The International Maritime Lecturers' Association – IMLA

The International Maritime English Conference - IMEC

IMEC 19

PROCEEDINGS

Papers and Workshops

Shipping and Transport College
Rotterdam - NETHERLANDS
9 – 12 October 2007

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Mr. Peter C. van Kluijven - IMEC 19 Local Organizer
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Maria Lozinska - Gdynia Maritime University, Gdynia - Poland.

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IMEC-19 TENTATIVE PROGRAMME

Monday October 8

18.00 hrs: registration of participants at the STC Building (main hall)

19.00 hrs: cocktail party – conference venue 13th floor

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Tuesday October 9

Tuesday morning
Chairperson: Peter van Kluijven

10.30 hrs: OPENING AND KEY NOTES (*tentative schedule*)

Mr. Erik Hietbrink – Chairman of the STC GROUP / Mr. Ton van Essen – Board of Directors
Prof Dr Peter Trenkner – Chairman of IMEC

Mr. Jaap Lems – Regional State Harbour Master and Port Security Officer
"International Maritime English, feasible of not".

Professor Gao Deyi - Chairman of IMLA and
Counselor of the Chinese Mission to the European Community

Berend Vree and Ivo Bezuijen – STC Students (Maritime Officer)

lunch

Tuesday afternoon
Chairperson: Peter Trenkner

time	Paper presentation	Presenter(s)	Theme
13.15 - 13.45 hrs	Do Not Mitigate! - A study about the usage of mitigation within the bridge team	Peter Björkroth - Sydvast Maritime Finland	Safety and Communication
13.45 - 14.15 hrs	A coursebook for a ME-programme: a project in progress	El-Dakhs, Dina and Mostafa, Karima - Arab Academy for Science and Technology Egypt	Communication and Skills
14.15 - 14.45 hrs	Service Letters (Engineering)	Sandra Tominac and Josip Luzer - Faculty of Maritime Studies Rijeka	Communication and Skills

tea *(continual Poster Presentation)*

Tuesday October 9

Tuesday afternoon
Chairperson: Boris Pritchard

time	Paper presentation	Presenter(s)	Theme
15.15 - 16.00 hrs	The MarEng project Ports of CALL: Computer-assisted language learning (CALL) as a means of focussing language goals within the maritime sector: the MarEng project	Barbara Katarzyńska - Gdynia Maritime University, Poland and - Alison Noble - University of Antwerp, Belgium	Course Design and Recourses
16.00 – 16.45 hrs	Yardsticks for Maritime English Assessment Purposes - A uniform tool for students, teachers, officers and end-users *A short presentation will be followed by a Group Discussion session*	Peter Trenkner – Wismar University – Dept. of Maritime Studies Warnemünde, Germany and Clive Cole – World Maritime University, Malmo Sweden	Assessment

Evening 1900 hrs
Reception at the Town Hall of Rotterdam

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Wednesday

Wednesday morning - parallel workshops
Chairpersons: 1 - Siep Konijn
2 – Josip Luzer

time	Parallel Workshops	Presenter(s)
09.00 - 10.30 hrs	1 - Creating Teaching Materials from the IMO Website	Inger Battista and Anne Pazaver / World Maritime University Sweden
	2 - The culture of safety onboard	Tandy Taylor – Marlins, Glasgow

coffeebreak *(continual Poster Presentation)*

time	Parallel Workshops	Presenter(s)
11.00 - 12.30 hrs	1 - SMCP in Pilotage	Conny de Beer / Shipping & Transport Group - Netherlands
	2 - An academic report writing course for nautical college students	Dina El-Dakhs and Karima Zayed - Arab Academy for Science and Technology & Maritime Transport - Gamal Abdel Nasser Road, Miami - Alexandria, Egypt

Lunch

CONFERENCE PICTURE

Afternoon: Outing

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Thursday

Thursday morning
Chairperson: Jin Yongxing

time	Paper presentation	Presenter(s)	Theme
09.00 - 09.30 hrs	The Influence of Language and Question Structure on Multiple Choice Test Scores: An Exploratory Study	Denis Drown, Robert Mercer and Gary Jeffrey	Assessment
09.30 - 10.00 hrs	The Compilation and Promotion of the English-Chinese Dictionary	Jin, Yongxing and Xie, Jieying - Shanghai Maritime University	Vocabulary
10.00 - 10.30 hrs	Creating Maritime Dictionary Projects in Class	Fabe, Dušan - Faculty of Maritime Studies of Portoroz, University of Ljubljana, Slovenia	Vocabulary

coffeebreak *(continual Poster Presentation)*

Chairperson: 1 - Maria Lozinska
2 - Peter Björkroth

time	Parallel paper presentations	Presenter(s)	Theme
11.00 - 11.30 hrs	1 - Portfolio Assessment: Helping the students evaluate their progress in Maritime English	Ethel Capellan - Maritime Academy of Asia and the Pacific - Kamaya Point Mariveles, Bataan Phillipines	Assessment
	2 - Phonetics in the Maritime English - think or sink	Garcia Carrascal, Antolina - Universidad de Oviedo, Oviedo	Language Systems
11.30 - 12:00 hrs	1 - Development of ME Teaching Materials in SMU of China	Xie, Jieying and Ruan, Wei - Shanghai Maritime University	Course Design and Recourses
	2 - The Maritime English Course - An Issue of the New Teaching and Learning Environment	Paula Manolache - Maritime Training Centre - Constantza	Course Design and Recourses
12.00 - 12.30 hrs	1 - Seamaster - an Innovation to improve Maritime English Teaching in China	Mary Liu - Wuhan University of Technology-Skaugen Training Centre	Course Design and Recourses
	2 - V-ing Forms in ESP Engineering Texts - Periphrasis and/or Translation	Nadya Naoumova - Naval Academy, Varna Bulgaria	Language Systems

Lunch

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Thursday afternoon - parallel workshops
Chairperson: 1 - Conny de Beer
2 - Alice Guo

time	Parallel Workshops	Presenter(s)
13.30 - 14.30 hrs	1 - Teaching English for VTS Operators, course development and teaching experience	Siep Konijn - National Dutch VTS Training Institute
	2 - Voyage	Nadezhda, Ivasyuk - Odessa National Maritime Academy

tea
(continual Poster Presentation)

Chairperson: 1 - Tandy Taylor
2 - Valerie Short

time	Parallel paper presentations	Presenter(s)	Theme
15.00 - 15.30 hrs	1 - Understanding The Language Of Salvage And Rescue Of Submarines	Yolanda Noguera Díaz Submarine School Cartagenal Naval-Spain	Safety and Communication
	2 - ----------	----------	----------
15.30 - 16:00 hrs	1 - Ship's Accident behind Cultural Barrier in English Communication	Purnama, Cahyana - Ganesha Maritime Academy - Yogyakarta	Culture
	2 - *Language Barriers in* Maritime Communication and Countermeasures	*Yan Qiu Wang - Dalian* Maritime University, Dalian, China	Safety and *Communication*

evening

conference dinner

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Friday

Friday morning
Chairperson: Sandra Tominac

time	Parallel paper presentations	Presenter(s)	Theme
09.00 - 09.30 hrs	1 - Learning by doing: Shiphandling Simulators For Maritime English Practice	Shi, Chaojian and Wang, Yingming - Merchant Marine College, Shanghai Maritime University	Communication and Skills
	2 - Combination of Onboard Experience and e-Learning for Communicative ME Training	Masahiro Sugimoto - National College of Maritime Technology Japan	Safety and Communication
09.30 - 10.00 hrs	1 - Teaching deck officer cadets how to get radio medical advice	Veronica Zykova - Institution Murmansk State Technical University, Russia	Communication and Skills
	2 - Maritime English Initiative at TUMSAT	Takagi, Naoyuki - Tokyo University of Marine Science and Technology	Assessment
10.00 - 10.30 hrs	1- Cultural and linguistic differences as factors of ineffective communication	by Čulić-Viskota, Adelija and Bielić, Toni - Faculty of Maritime Studies - Split	Culture
	2 –Test Construction Strategies. ESP and TQM	Nickolas Komninos - Università degli studi di Trieste	Communication and Skills

coffeebreak *(continual Poster Presentation)*

Chairperson: Clive Cole

time	Workshop	Presenter(s)
11.00 - 12.30 hrs	Conceptions of 'culture' in international communication - Limits to cultural explanations?	Fabienne Knudsen and Lisa Loloma Froholdt - Research Unit of Maritime Medicine; Department of Language and Communication Department of Maritime Research and Innovation University of Southern Denmark

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lunch

Friday afternoon
Chairperson: Takagi Naoyuki

time	Paper presentation	Presenter(s)	Theme
13.30 - 14.00 hrs	Maritime English: on board training for officers and cadets – a new initiative.	Valerie Short – Australasian Maritime Education Services LTD – New Zealand	Communication and Skills
14.00 - 14.30 hrs	Minimum vocabulary – some issues in Maritime English	Boris Pritchard - Faculty of Maritime Studies, University of Rijeka	Vocabulary

tea
(continual Poster Presentation)

15.00 hrs plenary session

Closing ceremony and IMEC 20 presentation – Shanghai Maritime University

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MET Facing the Challenge of the Development of Global Maritime Industry and Technical Innovation

Speech at the 19th IMEC conference

By GAO Deyi

Professor, Shanghai Maritime University

Counselor, Chinese Mission to the European Union

Mr. Chairman, Distinguished Guests,
Ladies and Gentlemen:

Good morning! I am very pleased to be invited here to attend this 14th IMEC Conference. Here, I would like to extend my warm congratulations to the convening of this conference in Rotterdam, Holland.

Recent years, the maritime sector was euphoric with spectacular market condition prevailing in the every related sector. It was the best period in many decades with all three major shipping markets. The theme of the conference is to discuss the challenges and opportunities facing global maritime industry, in particular the education and training on Maritime English, a well-chosen topic in a time when global shipping industry is experiencing a structural change. We, at maritime institutions, as the educators to fulfill with the development of global shipping and the technical innovation , would like to share our views on the future development of maritime education and training, and on the closer cooperation among maritime institutions and training centers.

1. Structural Change of Global Maritime Industry

There were a number of major maritime developments during the year. Since 1990s, globalization, the trend of world economy has been looming with the dramatic change of international economic and political framework, fast development of technology and growth of transnational investments. As a result, world economic and trade activities in a globalization era bring in new demands for maritime industry . On the other hand, developing countries, especially most Asian countries, are in the process of

industrialization. Asia was largely considered a region of exporting raw materials twenty years ago and European countries exporting products everywhere, but today, Asia has become the factory of the world by importing huge amount of raw materials from all over the world and exporting manufactured goods to other places. Asian countries are growing their shares substantially in global trade. It is estimated that Asia is responsible for 50 percent of world GDP growth currently.

Correspondingly, Asia stands on a leading position in global maritime industry now. Based on the latest statistics, 13 of the top 20 largest container shipping companies in the world are Asian companies, and these 13 Asian operators have controlled 70% of the total TEU capacity. In other words, from the location of the world's major maritime companies, we can see the trend that world maritime center is moving from the West to the East.

2. Maritime technologies

Along with the development of shipping industry, Maritime technologies enhance the industry's capability to cope with maritime adventures. Nowadays the leading maritime technologies are applied onboard, such as the automation technologies; information and communication technologies; the Electronic Chart Display and Information System(ECDIS); the Integrated Navigation System (INS)/Integrated Bridge System(IBS) which combining with ECDIS, GPS, RADAR/ARPA, echo-sounder and IMMARSAT; the Integrated Ship Information System (ISIS) with automation functions in navigation, collision avoidance and berthing; the ship management information system applied onboard with the integration of the ship equipment management system, internet-based information system for cargo to be carriage and logistic and shipping business information.

So automation, integration, information and intellectualized technologies have their main applications onboard. All the navigational devices are connected and provide necessary information for correct and timely information acquisition, analysis, decision-making and actions of the seafarers. Obviously, modern seafarers need sufficient education and training for their knowledge and skills in computer and electronic navigation before they operate those state-of-art apparatuses.

3. Some hints from the industry

Ships are built with large tonnage and high speed due to the rapid development of international economy and diversity of the goods to be shipped, as well as the advancement of shipbuilding technologies. Meanwhile, specialized transportation by ro-ro ships, Liquefied Natural Gas (LNG) vessels, offshore working boats, etc. are growing up fast. These signify as well the importance of the technical competence of the seafarers. Seafarers need to be educated and trained for special transportation purposes.

Maritime accidents cause huge damages and losses to the shipping industry, and have shown a close linkage with the quality of seafarers. The accidents provided painful but useful lessons for MET systems to make technical improvement for instance enhancing basic safety training such as fire-fighting, as well as to highlight the importance of cutting down the "Human Errors" such as communication problems, lack of seamanship, negligence in watch-keeping and short of safety awareness. The statistics of maritime accidents have sufficiently indicated that seafarers must be provided with more training in basic safety and maritime professionalism.

Some shipping policies may also give hints to the quality of seafarers, for example the Flag Of Convenience (FOC). The FOC or "secondary registration" policies in some countries are changing the traditional way of seafarers' recruitment to be a so-called "international recruitment". In such case, the professionalism of seafaring requires that the seafarers must be co-operative and internationally-oriented.

Questionnaires in MET researches revealed clearly quite common feedbacks from the owners and maritime administrations, that is, seafarers should have good professional knowledge and skills, good command of English, good skills in decision-making and capability in handling interpersonal relationship, etc. For instance, the comprehensive survey done between 2002-2003 by the Directorate of Education, the Ministry of Communications in China shows that the international and domestic ship-owners stress upon the quality of seafarers in respect of their maritime English skills, awareness in maritime safety and pollution prevention, commitment to maritime profession, decision-making skills and teamwork, etc.

4. The Importance of Maritime English Training

Maritime English, the language of the sea, is needed in today's shipping industry. The demands for competent seafarers require their proficiency in understanding and using maritime English. The mixture of the seafarers' different cultures makes maritime English a compulsory linguistic medium in aspect of the safety of life at sea, ship property, pollution preventions, etc. People commonly admit knowledge and sills of maritime English can ensure the effectiveness of communication between English speaking seafarers and non-English speaking seafarers; and between seafarers and offshore personnel. To some extent, guarantee of safety at sea relies on seafarers' communication in maritime English. Proper command of maritime English is not only for the essentials of seafarers but also for the appropriate operation of ship.

Although IMO has officially adopted maritime English as the language of maritime industry, there is a clear necessity for ensuring seafarers to gain maritime English communication skills in the current globalizing world shipping market. Most of maritime institutes are aware that mastering communication skills is one of the important components which ensure the safety at sea. In order to cultivate the high-quality seafarers, maritime English instructors should focus on teaching the particular terminology and communication skills that include listening, speaking, reading, and writing as required by IMO conventions in the international shipping industry. MET instructors should find effective ways to teach the language. All these will benefit maritime English education in the globalization of maritime industry.

5. China's Practice and SMU case

(1) China MET Update

China has rich human resource and a large MET system, which enables her to yield quite many qualified seafarers. With her large population, good education system, rich maritime traditions, well-educated, clever and diligent seafarers, the Chinese MET system has the confidences in meeting with the requirements above, and thus has great

potentials. Her goals in providing the international maritime industry with both quality and quantity of seafarers will be accomplished based on her commitment of serving international maritime industry and efforts made to keep the paces with the development of international maritime industry.

The 2006 Maritime Labor Convention is a significant outcome for seafarers in the world by integrating more than 60 conventions and recommendations enforced by the International Labor Organization since 1920. It has been described as "historic step forward", using international labor standards to help achieve "fair globalization" and to ensure "decent work" of the seafarers. It is also a prerequisite for quality seafarers. China stresses on the protection of the rights of seafarers via legislation. The applications of *The rules on the judgment of occupational injuries and illness, The rules on hearing personal injury cases for indemnity and The judicial explanations on the application of laws and regulation in hearing personal injury cases,* etc,. As well as the judicial decisions of a series of cases have adequately shown the rights and freedom of the seafarers such as welfare, payment, insurance are well protected.

As one of the important relevant respects linking to MET system, only with a good labor protection system can the system attract more and more quality prospective young men to engage in seafaring and finally can the whole industry achieve a higher level production.

(2) SMU's Development

On 18, May, 2007, a special article was printed on page seven on Lloyd's List with the title of "Academy strives for maritime excellence" which to give a full picture of the development of Shanghai Maritime University. "To fulfill the huge demand, Shanghai Maritime University will continue its effort to train students with the best moral, intellectual, and academic qualities to satisfy the needs of rapid development of the industry." according to Lloyd's List.

On the basis of the infrastructures currently being used for MET activities, SMU is increasing the number of the quality of the infrastructures during the progress of constructing Shanghai International Shipping Center and new SMU campus. The new

campus, which has an area of 133.33 hectares and is capable of holding 20, 000 students, is under construction and will accommodate first batch students in this September. Various facilities and installations such as LNG and LPG training facilities will be ready in place for maritime safety and specialized training then, which will expand SMU's MET activities into international level.

In the opening of this important event, I should also say with my colleagues from SMU, they sincerely hope that SMU could host a successful IMEC meeting in 2008, after Beijing Olympics. Welcome you and see you in Shanghai!

Thank you very much for your attention!

Do Not Mitigate
- A study about the usage of mitigation within the bridge team

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Abstract

In December 1978 United Airlines flight 173 crashed. The NTSB noted that "the probable cause of the accident was the failure of the captain to monitor properly the aircraft's fuel state and to respond to the crew members' advisories regarding the fuel state. [...]
The accident report noted that the first officer hade made several comments about the fuel state, but not in a direct or positive tone. The first officer had used a strategy to soften his messages. He had mitigated his message, e.g. used words such as "would" or "could". The following conclusions regarding mitigation were established in the study:

- Subordinate crew members used more mitigation than the captains
- Topics introduced by mitigated speech were less likely to be ratified by the captains

In this paper I present results from a study done to test the conclusions above. I use recordings from a ship handling simulator. I study the crew's communication in order to see whether mitigation is used, to what extent and how mitigation is done.

The seafarers taking part in the simulations were active at sea and their communication patterns can therefore be considered representative for, at least, Swedish communication patterns on board. The results are relevant for the teaching of Maritime English since the usage of qualifiers such as 'should' in my experience is common. The results from the study referred to above suggest that unmitigated speech should be trained and encouraged in a maritime context.

Key words: *Communication, Maritime Officers, Navigating Bridge Team, modal auxiliaries*

1 Introduction

"MET-institutions should use more time to practice effective communication, mustn't they?" This no-sense sentence makes a lot off sense and summarizes what my paper is about: there is a significant difference in the decisiveness of messages depending on whether they are mitigated or not.

It has been shown that subordinates in aviation often try to soften – mitigate – their propositions or such, when approaching a superior. In this paper I present some results from a study made on how maritime officers communicate. I focus on mitigation. The empirical part of the study was made in a shiphandling simulator with persons from the industry on the navigating bridge. The purpose of the study was to find out to what extent mitigation takes place in a maritime context.

The results show that subordinates do mitigate to a great extent, i.e. mates tend to mitigate their messages to the master, when the master is conning the vessel. The sample was not big enough to give any statistical evidence, but the tendency was clear and partly confirms the results from studies in aviation and partly the author's expectations.

2 Background

2.1 Aviation accidents

In the book *Flightdeck Performance – The Human Factor* (O'Hare and Roscoe, p. 218) three accidents are mentioned in which ineffective communication has played a part: the infamous Tenerife disaster from 1977, a United Airline crash in 1978 and an Air Florida crash in 1982. I will not discuss the Air Florida case since I find it outside the scope of this paper, but I will discuss the Tenerife accident and also look more closely at the United Airline's accident.

The Tenerife disaster in 1977[1] was a result of one plane running into another. The captain of plane A thought the runway was clear and started take off. Plane B was still on the runway and had answered the air-traffic control over the radio that: "Roger, we'll advice when clear". The flight engineer of plane A heard it and asked his captain (and 1st officer): "is he not clear then?" The captain answered "yeah, he is clear" (which it was not). (Wiki)[2] The flight engineer understands the situation in a different way than the captain. The situation is such that if the engineer is right, the captain's perception of the situation will have fatal consequences, and yet he *asks* a question instead of strongly telling the captain of his differing opinion. Thus he gives the captain a chance to answer and maintain his own perception of the situation.

The United Airlines crash in 1978, Portland USA, was caused by "the failure of the captain to monitor properly the aircraft's fuel state and to respond to the crew members' advisories regarding the fuel state." (O'Hare and Roscoe, p.218). The plane was circling around the airport for about one hour while they were dealing with a warning about malfunction in the landing gear. During that time the first officer tried to communicate the plane's fuel state to the captain, but "the comments were not given in a positive or direct tone" (Ibid.)

2.2 Mitigation as a communication device

Mitigation, i.e. "to cause to become less harsh or hostile" (M-W), is a linguistic device used to soften the effect of a message and to avoid giving offence. In my experience mitigating is often done by formulating a question rather than a statement (or an instruction), as in the Tenerife case described above. The engineer asks a question, rather than giving an instruction: "Stop! he is not clear!"
Another means to mitigate are to use qualifiers such as 'should', 'would' or 'could'. Both of the devices mentioned above were common in the simulator exercises I studied and will be discussed below.

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[1] Someone might claim that the examples are rather old, but since it is generally accepted that navigation is behind aviation when it comes to safety-work, I still find them useful.
[2] My source is a "Channel 4" TV-documentary (*The Black Box*), but a transcript of the radio- and cockpit-conversation can easily be found in the Wikipedia.

A third way of mitigating is to somehow 'hide behind something' or to open a door to a common way out of a conflict where neither of the parties must "loose face". When training VTS-operators in Finland I have reacted against one of their ways to mitigate. When for example they want to send a message to a vessel that is steering a dangerous course, they want to use the following kind of message:
"Vessel NN, This is Archipelago-VTS. WARNING: According to my instruments you are steering a dangerous course".
What I react against is the "according to my instruments". Since one of the purposes of training radio-operators is to minimize air-time, all redundancy should be excluded. To me the phrase "according to my instruments" is totally redundant since it is obvious: no vessel believes the VTS operators actually can see them! The VTS-operators are rather firm on this though, and argue it is about somehow covering their back. I also believe it is a mitigation device – they do not want to be offensive towards the vessels.

2.3 Who mitigates and when?

In the NTSB (the National Transportation Safety Board, the US.) study conducted after the United Airlines accident it was found that
"the speech of the subordinate crew members was much more likely to be mitigated than the speech of the captains. It was also found that the topics introduced in mitigated speech were less likely to be followed-up by other crew members and less likely to be ratified by the captain" (O'Hare and Roscoe, p.219)
It is thus the subordinates that mitigate and they probably do it when they either go against the superior's intentions, or when they want to suggest some actions the superior has not intended. This was the case in the two examples I use here:
In the Tenerife accident the flight engineer – definitely a subordinate to the captain – tried to express his mental picture of the situation to the captain who had another, wrongful, picture of the situation. In the United Airlines case, the first officer had made "several comments about the aircraft's fuel state" and the captain failed to take action. The plane crashed because it ran out of fuel! One would assume that a co-pilot noticing that they were running out of fuel would be able to state his message "in a positive and unmitigated way", but mitigation seems to have been so strongly in their communication habits that he failed.
The VTS-operators in Finland are all trained seafarers; they have all studied at least for a mate's certificate and thus have experience from working at sea. It is no secret that seafarers consider any attempt to influence their doings from ashore, as outrageous at the least. The VTS-operators must have internalized this mode of thinking. When they then begin working ashore, they no doubt feel subordinate to the vessels and a need to mitigate their speech arises. The question is: are they really doing the vessels a favor by being polite?

It is of course not good, or even dangerous, when the subordinate makes a correct suggestion that is ignored.

3 Results from simulator study

3.1 The simulator study

The study was conducted during the spring 2007 in a shiphandling simulator at Sydväst Maritime. The simulator has visual view and is equipped with instruments similar to the ones the test persons have on board the vessels they work on.

Both the two test groups consisted of master, mate and a pilot. The pilots were both active pilots in the area that was used in the simulation. Both groups did three simulations, each about 30 minutes long. The scenarios were:

1. Routine: entering the port of Helsinki, one overtaking situation, one meeting vessel and some yachts in the fairway
2. Increased level of stress: leaving the port of Helsinki, disturbing vessel before narrow passage, tug with tow that has to be dealt with in or immediately after narrow passage
3. Pilot on board, Engine failure: Leaving the port of Turku, one vessel ahead and one leaving directly after, engine alarm in the narrow passage out from port, call from chief engineer (the engines have to be stopped in about 10 minutes)...

The purpose of the study was not to create any statistical evidence about the communication, but rather to find out how mitigation is done, if it happens and to what extent.

3.2 Results

The setting in the simulations was such that it was the master who conned while the mate functioned as co-pilot. When the pilot was on board, the mate gave his place to the pilot. Both persons conning had the same equipment, e.g. radar etc., and both had unhindered view forward and to the sides of the vessel. There were around 30-40 speech initiatives during each simulation and the master's made close to 75% of them. The results from this study seem to confirm the previous results. The masters did not mitigate their speech with the mate, while the subordinates, the mates, did mitigate their. In one of the two test groups more or less all the mate's speech, in connection with the task, was mitigated. One of the few times the mate showed a similar assertiveness as the master was when he expressed something that absolutely could not be disputed: Mate: "there is a sailing yacht".

The following types of mitigation could be noticed:

Expressing uncertainty

The typical mitigation device used by the mates was asking and thus showing uncertainty:	Mate: "Is it *Norrbotten* [vessel's name] that comes there?"
	Mate: "Is there something coming, or what is that?
	Mate:" Should I tell the tug we are leaving berth? I think it was called *Neptunus*…
Another method was using qualifiers:	Mate: "We seem to be quite close to Gråhara [island] "
	Mate: "Seems to be a sailing yacht there…"
	Mate: "There is something small, or smaller coming"
The expressing of uncertainty was also used when answering, e.g. through using qualifiers:	Master: "This *Neptunus*, where was she going?" Mate: "I believe it was going…"

Silence

A slightly surprising phenomenon was the mate's hesitation to answer a question:	Master:" what was the next course again [as if talking to himself] … 320 degrees… Mate: -
	Master: Which side should we pass? Mate: well … [12seconds silence] Master: [rapid order giving – no discussion]

These two passages could of course be interpreted as if the master was thinking aloud and that *no answer* even was expected, but this is unlikely, especially in the second case. And should not the mate confirm the master's thoughts? Another way of interpreting the silence is of course to assume that the mate doesn't know…

Master's communication

The masters' speech initiatives were generally speaking a lot more assertive:	Master: "All three seamarks are visible." Mate: "yeah"
	Master: "OK, heading is ok, speed ok, … [unclear]

An interesting feature was the obvious expectation from one of the masters' side to be the one to take initiatives.

The expectation was shown by the masters' reactions to some of the mates' initiatives:	Mate: "Shall I take 200 now? Master:" Yes, I was just going to say…
	Mate: It looks as if … [unclear, talking about other vessel's movements] Master: Yes, I was just going to say …

Pilot on the bridge

When the pilot was on board the character of the speech-acts changed. The mitigation disappeared and instead a discussion that I would describe as a discussion between two equals took place

	Pilot: "hard a starboard" Master:"OK" Master" Slow ahead?" Pilot: Yes. that's good
	Master: "shall I kick a bit harder to get her turn better?" Pilot: "yes, do that".

This communication differs from the communication between the master and the mate. Even if we here see the master "asking" the pilot about the appropriateness about a certain manoeuvre, the master is actually active himself. The master suggests a new, not beforehand planned, manoeuvre. In the examples with the master and the mate conning, we see the mate asking whether it now is the time to take the new, beforehand mentioned and planned course (Mate: "Shall I take 200 now? Master:" Yes, I was just going to say…).

But also the pilots showed uncertainty. This was particularly clear during the second case when the pilot was instructing the anchoring of the vessel: "Pilot: we could begin, maybe even […] Pilot we could almost stop now, even stop totally now…"

Interesting passage

An interesting passage I want to mention, that had nothing to do with mitigation, took place between the first master and pilot. The simulation with the pilot on the bridge included an engine break down. The master was given 10 – 15 minutes before the main engines had to be closed down. During the second simulation the master and pilot reacted the way I expected they would, i.e. they begun to solve the problem about where to anchor etc. The first master and pilot however seemed to think nothing at all about the engine and the fact that they possibly would have to stop in a narrow fairway. Instead they told stories about previous experiences of similar incidents. I first thought this was a case of "not-taking-the-simulation-seriously", but I later revised my thoughts. The pilot and master begin discussing past experiences of engine breakdowns. They seem to be talking rubbish, but important issues are raised. For example they discuss avoiding rocks and finding mud or clay when having to beach the vessel. This indicates to me that what they actually are doing is that they are negotiating a mental picture of their present situation and the other person's preferences. That way, when it is time to make decisions, they have an idea about what the other person is thinking and enabling smoother decision making. This could be an interesting line of research: how do bridge teams prepare for decision making?

4 Conclusion

A study by the NTSB concerning cock-pit communication, showed that

- Subordinate crew members used more mitigation than the captains,
- Topics introduced by mitigated speech were less likely to be ratified by the captains.

In this study it was clearly shown that subordinates in a maritime setting also tend to mitigate their messages to a superior. The mates used different techniques when mitigating. The most common was to phrase a statement as a question. Another common technique was using qualifiers.

Whether the topics that were mitigated were likely to be ignored by the captain, as was shown in the NTSB study, can not be said on the basis of this study. The simulator cases were planned in a way that did not make studying this possible. The simulations probably need to be more challenging than these routine cases. Cases forcing the mate to make more initiatives would be a better way to study the possible ignoring.

Since it was not established in this study whether mitigation influences navigation negatively, recommendations to avoid mitigation can not be based on it. It might even be that mitigating ensures a smooth communication in a maritime context and in other hierarchical contexts! The aviation industry with its need for rapid decisions might be an exception in this matter?

It was a rewarding experience to study the communication and the language used by seafarers in a simulator surrounding. I believe a lot can be learned from it, not least when it comes to communication habits. The seafarers in this study used Swedish, and it would also be interesting to see how a change of language, e.g. into English, would change the communication. How the results from this study can be applied when teaching ME is not yet quite clear to me. But at least I can show the tendency to mitigate and discuss the usefulness of it. And I can hint that airplanes crash because of mitigation!

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CULTURAL AND LINGUISTIC DIFFERENCES AS FACTORS OF INEFFECTIVE COMMUNICATION

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Abstract

Inability to recognize cultural and linguistic predispositions of crewmembers is a component of human element frequently leading to maritime accidents. Recognizing general principles of taking actions by individuals of different cultural background within a multicultural community is based on identification of the essential culture-specific features. General cultural guidelines as a guide to successful communication as well as the importance of using simple, but correct working language in conditions of multinational ship crews are presented. Multicultural aspect of a modern crew represents a challenge to a maritime lecturer in general and language lecturer in particular as regards his/her ability to prepare future crewmembers for intercultural contacts. English need not be limited to working language only. It can be a means of taking a closer look at geographically distant cultures searching for similarities rather than differences. English is compared with other languages as for segmental and suprasegmental features that often differentiate them, and some strategies of bridging this gap are proposed.

Key words: *culture, group-oriented, individualistic, multiculturality, interculturality, predispositions, cultural topics, English course*

2. Introduction

From the early days navigation has aimed at distant shores. Consequently, maritime affairs in general have adopted a highly international character and great effort has been made to cope with multinational and multilingual ship´s crews, especially in the field of communication. The importance of studying and teaching maritime English has been increasing ever since. However, less importance has been given to "cultural literacy" and the importance of understanding culturally motivated human relationships although these can greatly influence ship´s business in particular, and companies´ business in general. Difficulties which can arise due to multicultural crews reach beyond the borders of safety made possible by putting down language barriers. This has long grown into the problem of creating a sense of cohesion among crewmembers, maintaining the required level of spirits and support to leadership. This paper aims at throwing light on certain problems which have already emerged and others to be expected, as well as proposing what the attention of students of maritime colleges and faculties worldwide should be attracted to in order to prepare them for being proper members of shipboard teams in the future. Problems cannot be expected to reach a solution by simply tolerating foreign habits and culture-specific features, but rather by introducing the notion of cultural differences much earlier into lecture rooms. Thus, studying different cultures on one hand, and studying English as a global and working language arisen from globalisation tendencies on the other, would play a significant role in their education. Among all sorts of problems a modern seafarer comes across there is also the need for bridging over cultural differences.

3. Culture, multiculturality, interculturality, cultural awareness

Culture is defined as "a shared, learned, symbolic system of values, beliefs and attitudes that shapes and influences perception and behaviour." (from Wikipedia, the free encyclopedia) The term draws its origin from the Latin noun *cultura,ae,f.* derived from *cŏlo,3. cŏlŭi, cultum* = to cultivate (land), to take care of, to respect, to honour. Thus, culture is said to consist of four elements that are "passed on from generation to generation by learning alone": values, norms, institutions, artifacts. They are all internalized, habitual, taken-for-granted and perceived as "natural" so that differences emerge and are perceived only through contacts with other cultures, i.e. in multicultural environments. *Multiculturality* is a descriptive term for the state of coexistence or simultaneous existence of two or more cultures in a certain area. The term describes the factual conditions without any closer particulars. Interculturality, on the other hand, presupposes interaction between/among coexisting cultures. Thus, the accent is on the relationship that representatives of different cultures form and on the resulting dynamics. Therefore, interculturality is a wider notion and refers to the process of building up a relationship between/among cultures and requires mutual respect and tolerance. Due to multicultural use of English as global language awareness has arisen that language and culture are inseparable because language reflects society and culture it belongs to.

3.1 Ship´s crew – an example of multicultural community

Almost every modern ship can be considered as a meeting point of representatives of different cultures gathering to form a working team with the purpose of realising the common aim of making profit for themselves and their employers. Lately it has become pretty obvious to shipping company managements that they have to make efforts to raise the level of cultural awareness with their employees as they have evidently become aware themselves that seafarers' education is still rather poor as far as cross-cultural communication is concerned. Such tendencies can be observed in different areas of human activity so that there is an increasing number of foreign language courses incorporating intercultural themes and lots of web pages giving insight into features of different cultures. Maritime industry has also realised the importance of such an approach to seafarers' training so that companies invest all their knowledge and efforts to make their crews function optimally.

3.2 An example set out by the Japanese shipping company NYK

The Japanese shipping company NYK has carried out a research which involved all of their employees originating from different countries and cultures: Japan, China, the Philippines, India, Slovenia, Croatia, countries of south-eastern Europe such as Albania, Bosnia and Herzegovina, Bulgaria, Kosovo, Macedonia, Moldavia, Romania, Serbia, Montenegro. Their research has resulted in the Guidelines for intercultural relations, i.e. a circular sent to masters of NYK-owned vessels with the following note:
"*It is hoped that through this Guidelines readers will have the awareness in breaking the barriers, deterring misconception and misjudgement against certain cultures that may hinder a productive relationship on board ship; and for a greater number of our people to feel greater satisfaction and enjoyment because of an enhanced good working relationship in any ship.*"
Thus, as it has already been pointed out, efforts are usually made in order to improve efficiency and increase profit. It is recommended to provide a copy of the circular in the mess halls and

other conspicuous areas on board to serve its purpose. Introduction to the Guidelines ends with the following citation:

"When people fail to understand the factors that define cultures and those that affect perceptions about the world in general, there will always be misconceptions and judgements against certain cultures. Conflict resolution and productive intercultural relationship always require a great effort to understand, to know and to accept the basic cultural diversity of man."

Author: Unknown

Two things can easily be noticed in the above mentioned part of the Guidelines at first sight: 1) the most important thing is the final result of all the efforts made and it is the "*productive intercultural relationship*" in which the employees will be entirely concentrated on the realisation of profit as they will not be distracted by mutual conflicts; 2) a citation is usually supported by the name of its author; otherwise, the degree of evidentiality of an utterance and consequently its reliability decreases.

In *Part One* of *the Guidelines* the notion of intercultural relations is explained and emphasis is put on the fact that people of different opinions and characteristics recognise different ways of coping with problems only in such a relationship that includes mutual influences. Also, attention is drawn to some basic rules of interculturality such as that no culture is common to all people; all of us differ from one another; all of us have different values, standards of life, attitudes and ways of acting and dealing with problems; cultural differences are a fact and all of us have the right of being different from the others and the others from us; we can learn from representatives of different cultures and gain enriching and exciting knowledge; similarities with representatives of other cultures should be sought as it can be a way of bridging the differences; we should learn how to enjoy while learning about differences. Furthermore, the danger of falling into the trap of generalisations or cultural stereotypes is pointed out. The situation occurs when on the basis of knowing general determinants of a certain culture people think they know everything about each representative of the culture in question. Next, some general instructions are given for successful intercultural relationships, e.g. every person will be pleased if a representative of different culture and language makes an effort of learning the correct pronunciation of the person´s name. That is the first sign of good will to support a further development of an intercultural relationship in which we become citizens of the world and are obliged to show respect for others. Due to cultural differences it is necessary to be careful in expressing one´s beliefs while communicating them to others should be done slowly avoiding unknown or culture-specific words or phrases. One should show interest for his collocutor´s country of origin, customs, tradition and listen carefully while the other person is talking about it. Above all, one should avoid arguing or being defensive about the differences in ideas and cultural practices. *Part Two* of the above mentioned *Guidelines* is called *Practice Cultural Sensitivity*. In the introductory part of this chapter it is pointed out that each person is unique despite his/her belonging to a certain group that may be characterized by set stereotypes. What is particularly emphasised is the need for respect of attitudes and customs of representatives of different cultures as well as taking into consideration that religion and culture influence each other and should therefore be considered as part of one´s personality. Thus, there will always be differences in the way representatives of different cultures see and interpret things but one thing that helps an individual contribute to the quality of intercultrural relationship is the awareness that differences of opinions and beliefs should be expected, and that consideration and respect should guide a person´s behaviour. The rest of the *Guidelines* is dedicated to individual cultures whose representatives are most usually found as crewmembers aboard NYK ships. Each chapter is divided into *Dos*, *Don´ts* and *Things to*

remember when with ... . But particular attention should be paid to the attempt of explaining certain basic notions of Chinese culture. Among the notions presented Mianxi is the one that seems to correspond to the notion of *face* in the western cultures. Namely, it refers to politeness in communication. According to Brown & Levinson (1987) one of the aims of developing strategies of polite communication is to enable ourselves as speakers to save the face of the listener in the speech act. The term *face* refers to the respect that an individual has both for himself and his collocutor as well as to maintaining of self-respect in public or privacy. The English term *face* was first introduced by Erving Goffman (1959) when referring to human relationships in everyday life. Goffman states that everyone is up to a certain extent concerned with how other people perceive him/her. We realize ourselves in the society by striving to maintain the identity we build in order to be perceived by the others. This public exposition of ourselves to others is what we project when coming into relations. Losing that *face*, according to Goffman, means to suffer public degradation of the perception of oneself. Usually we try to avoid making other persons feel uncomfortable as well as acts of threatening the collocutor's face (Brown & Levinson: *FTAs = face threatening acts*). These would be the speech acts that threaten the need of the listener to maintain self-respect and other people's respect. Thus, strategies of polite communication are means of softening the above mentioned acts. Therefore, people most often use what Brown & Levinson call *positive politeness*. This is but one example of cultural notions mutually shared by eastern and western cultures which is by no means exclusive. It is but one of the bridges leading to the other shore.

4. Cultural values and differences as highly influential socio-cultural factors

If cultural differences are exposed as intolerant or spontaneously inadequate relationship among representatives of different cultures within a group kept together by mutually carried out activity, communication barrier arises. Ship's crew is most often multimational and therefore exposed to risks of common work and tolerance due to specific circumstances and prolonged stay on board vessel as isolated and psychologically highly demanding working environment.
Mutual differences arise from different cultural habits and their different interpretation. Although representatives of different nationalities usually have good intentions as regards mutual acceptance, spontaneously wrong interpretation of habits, body language, symbols, religious notions as well as different varieties of spoken English can lead to inefficient mutual activity. Thus, communication in this sense should be considered not only as spoken exchange of information but also as entirety of communicative relations including:
a) cultural predispositions towards group and individual evaluation and taking action;
b) cultural predispositions towards leadership and authority;
c) cultural predispositions towards adapting to the new and unexpected.

4.1. Cultural predispositions towards group and individual evaluation and taking action

Most western cultures are directed towards individual as value subject so that individual reactions are usually not in interaction with other representatives of the same cultural background. Such individualistic social framework has been defined by Höfstede as "*social framework which is not tightly interwoven, but in which people are expected to take care of their own interests and the interests of their closest family*" (in Robbins, 1992: 18). On the contrary, group evaluation and consequent taking action by individuals result from the orientation of

certain eastern cultures towards group as a foothold for personal safety, attitudes and generally accepted values. Such framework is defined by Höfstede as *collectivism "characterised by tightly interwoven social framework in which people expect from the rest of the group of which they make part to take care of them and to protect them when they are in trouble*" (Robbins, 1992: 18). The above mentioned distinction is essential in taking appropriate action in emergencies as research has shown that "*national culture has greater influence on employees than the culture of their work organisation*" (Robbins, 1992: 267). As an example, Filipino Second and Third Mate on board a vessel with strong vertical organisation will be more strongly influenced by their own culture than by the working culture of vertical organisation. According to Robbins (ib.), "*this means that, no matter how organisation culture is important for understanding human behaviour at work, national culture is still more important*". Thus, starting from the fact that some of the cultural traits of the Filipino seafarers are weak initiative, community harmony, conflict avoidance and longing for steadiness and invariability, a conclusion can be reached that the Second and Third Mate will fit well into the above mentioned organisation framework since they are likely to expect guidelines for taking action, they do not like conflict of opinions and they generally respect authority. This of course does not imply that no Filipino seafarer shows initiative but can only be seen as a tendency arising from the cultural background. On the other hand, if we take a look at a vertical organisation in which all the officers and crewmembers are Filipinos, initiative and independent decision-making as uncharacteristic cultural traits will be held by the Filipino Master while the rest of the crew will show the above mentioned tendencies. In such a case the Master will have to overcome his culture-specific tendencies towards group attitudes with the help of his own personal traits. Because of the above discussed cultural traits, which are generally valid for most Asian countries, in case of an emergency occurring in conditions of vertical organisation the Filipino Master and Officers may be reluctant in taking action as such conditions imply the necessity of fast adaptation, fast and independent decision-making, i.e. showing initiative in defining the problem and finding a solution. According to Robbins (1992: 84) "*in dependence of the social orientation towards activity some cultures emphasize solving problems while others are focused on resigning to newly occurred situation*". Nevertheless, collectivist cultures cherish the spirit of the group and this is the trait that encourages cooperation within the team which is essential for effective teamwork. Such cultures focus on long-term expectance of the results of changes undergone which is another trait in favour of the teamwork that goes through well-defined phases in its development and requires a period of time to mature for optimum operation. Thus, with Filipino crews cultural obstacles to vertical organisation transform into advantage for teamwork since they do not have to adapt to it the way they do with the vertical labour organisation. In this case they freely express their own cultural tendencies that contribute to the quality of teamwork.

On the other hand, analysis of behaviour, values and attitudes of representatives of individualist cultures allows drawing the following conclusions: for example, in vertical labour organisation Second and Third Mate of English nationality will not easily adapt to the working ambient. This may at first sight seem contradictory to the English tradition based on class differences, aristocratic principles and social hierarchy. Still, it is exactly the case with such cultures that they have eventually developed mechanisms of formalizing authority which means that employees are not timid and do not fear their superiors. Their individualistic tendencies imply exchange of opinions instead of obedience. In vertical labour organisation with a crew composed of Englishmen only, the Master will apply the autocratic style of management which will be

tolerated by the Officers considering it inhibiting as far as their initiative, exchange of opinions and personal respect are concerned. Thus, vertical labour organisation with autocratic Master and Chief Engineer functions better if the rest of the Officers and Engineers belong to cultures favouring group instead of individual. In emergencies the English Master and Officers may react quickly but without unity because of communication barrier caused by possible contrary opinions resulting in separate initiatives. Exaggerated self-confidence which can also arise from marked individualism can in such circumstances lead to lack of objectivity and individual actions based on superficial evaluation of circumstances. As regards social unity and teamwork individualistic cultures have both advantages and disadvantages. Thus, on a vessel manned with the Englishmen where teamwork is to be introduced good basis for cooperation can be expected to follow from the need of expressing opinions and attitudes as well as from a marked initiative. What cannot be tolerated is individualism tending to transform into egocentrism and exclusivity. In such a case expressing opinions can transform into rivalry, attitudes can be differentiated as more or less applicable while initiative can start a competition for realising the personal feeling of importance. Besides, according to Kluckhohn-Strodtbeck, as far as time orientation is concerned individualistic cultures are focused on the present and near future in the achievement of work results which in relation to the time required to promote efficiency of a maturing team is not desirable. Thus, in emergencies the team can act homogeneously, quickly and efficiently if possible cultural contradictions have been overcome, or vice versa if the above mentioned negative characteristics are present.

4.2 Cultural predispositions towards leadership and authority

The Master´s authority can be defined in two ways: a) as a formal influence based on official function or status on board; b) as an influence based on his knowledge, experience and ability to organize and stimulate work. The realisation of authority requires a management style depending on the organisational structure of the vessel and nationalities of the crewmembers. The selected style of practicing authority is reflected primarily through communication as an important element of the organisational climate and processes. In this sense, communication in common carrying out duties on board can be characterized as subordination, implying inequality, and coordination, implying equality. In the former case the person of lower rank is passive expecting to be said what to do. In the latter case communication is based on equality and informality. The lower-ranked person expects to be included in the exchange of opinions. In the vertical shipboard labour organisation the crewmembers who are group-oriented will readily accept the Master whom they consider righteous. They expect just and authoritative leadership which makes them feel safe, as well as clear instructions and well-defined tasks. Under these conditions the crew culturally predisposed towards group shows respect and submissiveness to the Master. The weak link in such a chain of carrying out duties and tasks is a possible mistake made by the Master or superior Officer which will not be corrected by such a crew due to their inertia, undeveloped criticality and lack of self-initiative.

Teamwork organized with individualistic crews accepts authority and leadership in dependence of the degree of team maturity and the management style applied. If cultural components of initiative, need for expressing personal opinions and attitudes are in balance, the style of participative leadership can be considered appropriate to apply. In such circumstances the crew represents a complete human potential which allows the individually oriented crewmembers active participation in all the aspects of making decisions and putting them into practice which is of highest importance in emergencies.

Finally, heterogeneous crewmembers can mutually compensate for negative cultural components and expose the positive ones.
Therefore, a conclusion can be reached that the style of management and authority depends on cultural characteristics of the crewmembers and shipboard organisation.

4.3 Cultural predispositions towards adapting to the new and unexpected

Adaptation to the new and unexpected is also related to cultural predispositions. Group-oriented cultures strongly oppose changes in general. Their representatives often refuse different and new ideas and consequently the change of behaviour. However, with established processes which do not require fast adaptation, i.e. change of behaviour and quick reactions, group-oriented cultures are predisposed to careful planning and accuracy.
On the other hand, representatives of individualistic cultures readily accept changes and new ideas. Consequently, the change of their behaviour follows. Such crewmembers easily adapt to new, complex and even high-risk events. However, negative traits with easily adaptive crewmembers are unwillingness for planning, inaccuracy and time imprecision. Thus, a general tendency towards the new and indefinite cannot be considered positive if it conceals a lack of sense for consequences and irresponsibility.
The accidents of passenger vessels *Oceanos* (August 1991) and *Lakonia* (December 1963) whose crews were multinational point to extremely bad organisation and reacting to the emergencies that occurred, especially in the emergencies in the wider sense that followed the accidents. The crew on *Oceanos* was composed of the Greeks and Filipinos belonging to two different cultural groups with different predispositions towards accepting the newly occurred situation. In the emergency the Filipino part of the crew tried to abandon the vessel neglecting the passengers as the newly occurred circumstances had such an upsetting and frightening effect on them that they were not able to face the new circumstances according to their duties, but they simply followed the instinct of seeking personal saviour. The reaction of the kind encouraged by the lack of leadership and support is understandable and in compliance with the above mentioned predispositions of group-oriented cultures.
In the case of *Lakonia* the crew was composed of four nationalities. The development of the emergency situation from its occurrence to the actual accident points to entirely unrelated actions undertaken by the crewmembers as well as lack of internal communication. Besides different reactions the crewmembers were divided by the language barrier which intensified other cultural differences. Accompanied by other factors such as poor organisation it led to the tragic end of the accident.

4. Culture and interculturality in maritime education and training

Having examined the curricula of the study programmes at the Faculty of Maritime Studies in Split I have noticed that students are offered optional courses in *Communication science* as well as *Socio-psychology* and *Culture and ethics*, but none of the courses mentioned is taught to the students of Nautical or Marine Engineering departments which is a great mistake as these courses incorporate ideas such as "*socio-psychological differences should be recognized as richness (by no means as a threat) ...*" (course in *Socio-psychology*) while "*Verbal and non-verbal communication in other cultures*" is one of the topics discussed in *Communication science*. However, foreign language courses, especially that of maritime English, should also incorporate topics on culture and interculturality. It is of extreme importance that the students of maritime colleges become conscious of the existence of different cultures and learn to tolerate

their representatives as this is a vital prerequisite for common life and work in a limited space such as a vessel. In this sense English language can serve as a medium enabling one to get to know other cultures, to become conscious of one´s own culture spotting similarities and differences and consequently building themselves up into tolerant persons able to communicate with representatives of other cultures with the lowest possible degree of misunderstanding and the highest possible degree of effectiveness and safety.

4.1 Integrating cultural topics into English course

This integration can start through introducing *MarEng* project materials based on the voyage of a vessel named *Marina*, not an imaginary or any vessel as students have been faced with so far. The staff on board *Marina* are of different nationalities and as they introduce themselves, they point to some traits of the cultures they come from although all of them are Europeans and consequently rooted in the western culture. Nevertheless, this can be a beginning of cultural sessions with our students. These sessions can be organized with students who have already progressed in maritime English as their basic tool and should not be too long or too frequent. First, it is important to arouse the students´ interest for other cultures, a task for which any kind of material can be used, e.g. souvenirs, photos from travels abroad, pictures or videos downloaded from the Internet which in this regard is a rich well of material but this of course requires much preparation both from the students and from the lecturer. Tasks should be assigned to students, perhaps to investigate into aspects of a certain culture once talk about it has been initiated in the lecture-room. They should be given enough time to familiarize themselves with the topic and consequently be able to report about it to the rest of the group. This report can be in the form of a presentation as most students like computer work and design or in the form of papers which can then be distributed to the rest of the students who can be given tasks to compare what they have read about a foreign culture and then discuss in class in what ways it differs from their own culture. Evaluation and assessment in this case are not an easy task for the lecturer. They can only be based on students´ accuracy, willingness to participate and to do the material-digging. Nevertheless, the lecturer´s aim should be to involve all students into the activities, even the most reluctant ones. The above mentioned topics can easily be related to their English course, e.g. students can be taken to *www.duber.com* in order to be presented with *Project We Say Tomato* which was initiated in 2005 and has so far organized a collection of samples of a quotation pronounced both of native and non-native speakers of English who have added their original pronunciations both in their mother tongue and English. This is but one of the possibilities of facing the students with the pronunciation, rhythm and intonation characteristic of English as a time-stressed language. This differentiates English from languages which are syllable-stressed and this is certainly one of the reasons why world Englishes sound so different except for different phonetic characteristics of sounds in different languages. Phonetic features can also be successfully coped with if students are taken to Ted Power´s English Language Learning and Teaching web page in which different language background phonetic characteristics can be found in comparison to the English ones. So, English pronunciation practice for Croatian speakers can be found on this site with seventeen common pronunciation problems exposing common errors and suggesting practice materials. However, once set out to the sea of cultural and linguistic topics the lecturer should arm himself/herself with a lot of good will to look for convenient materials, to splice numerous phonetic and phonological exercises as well as with personal openness to allow him/her make his/her students close the gap between themselves and other cultures and their representatives no matter how wide it seems.

Conclusion

An educated seafarer should be able to grasp the similarities and differences among people, and thus improve the ability of solving problems. This could be accomplished by implementation of education curricula based on promoting critical minds as well as awareness of differences and interaction of different cultures. Ways of achieving this goal are numerous and complex but the following should be borne in mind:

- While in reality there are still unabridged distances between cultures in contact, there are widespread ideas of cultural relativism implying equality of all cultures or representatives of a single culture or nation. However, such relativism and "equality" most often conceal global tendencies based on western notions such as intercultural competence and understanding, but all this aiming at one and only universal logic – achieving efficiency and success.
- In an intercultural setting people do not share any orientation system which the participants in interaction originating from different cultures could rely on so that different cultural standards turn into problems.
- It is at this point that the conditions of "cultural shock" arise for representatives of certain cultures in which people who not used to foreign cultural standards support them but discomfort, anger and similar feelings which usually appear in such conditions are often compensated for by putting the blame on who and what is different which at the same time strengthens the existing, well-known stereotype.
- This battle can be fought in different fields, that of maritime English being one of them.

To conclude, the problem of globalisation and cultural differences arises also in other fields than that of maritime industry. This paper represents an attempt to analyse some ways in which maritime industry and education cope with it in search of possible solutions.

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Curriculum vitae: Adelija Čulić-Viskota

I was born in Split, Croatia in 1960. I studied English and Italian and graduated from the Faculty of Philosophy, University of Zagreb, Croatia in 1985. Since 1993 I have been teaching English at the Faculty of Maritime Studies in Split. In 2000 I won my M.A. degree in linguistics with special reference to English at the Faculty of Philosophy in Zagreb. I have finished my doctoral thesis and waiting for defence. I am a member of the Croatian Applied Linguistics Society. In 2005 I took part in the Maritime English Instructors Training Course held in Sczeczin, Poland and IMEC 17 in Marseille, France. Since 2007 I have started teaching English Phonetics and Phonology at the Faculty of Philosophy, University of Split, Croatia.

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Curriculum vitae: Toni Bielić

I was born in Split, Croatia in 1956. I took my university degree from Maritime faculty of the University of Rijeka, Croatia in 1983. Subsequently, I attended post-graduate studies on integral and multi-modal transport at Maritime faculty in Rijeka. I finished the studies and won my master's degree after having successfully defended my master's thesis «*Justifiability of Constructing an Auxiliary Container Terminal in Split*» in 1986. Eventually I became certified as Master of ships of 3000 GRT or more after taking the examination at the Harbour Master's Office in Dubrovnik in 1996. In 2003 I was granted a doctorate for the work on my doctoral thesis «*Organizational Model of Ship Managing in Emergencies*» at Maritime faculty in Rijeka. Since that date I published several papers and participated in a number of international conferences. I was employed as deck officer aboard merchant ships and I gained experience as Chief mate on container and semi-container ships. Furthermore, from 1984 to 1986 I worked in the development department of the port of Split on the tasks of the development of port technology. Since 1986 I have been employed at the Faculty of Maritime Studies in Split as lecturer of «*Cargo handling and stowage*» as well as «*Organization and management of ship's crew*». At the Faculty I took over the post of Head of Nautical department which I carried out until I was appointed Head of Seamen Training Centre. My activities in the Centre included active collaboration with Scandinavian Flight Academy in Stockholm (SFA) and Norwegian Shipowner Association in Oslo (NSA). In 1998 I became certified by SFA as workshop leader for «Bridge Resource Management» course. Around 250 seamen both from operational and management levels – masters, deck officers, chief engineers and engineers – have successfully

completed the above mentioned course under my leadership. My contribution to the course is the application of new methods of hazard assessment and operability of action (*Hazard and Operability* - HAZOP) in planning action in emergencies. It is the application of HAZOP method in team work conditions that has been elaborated in my doctoral thesis. I possess currently valid certificate of Master of ships of 3000 GRT or more as well as additional certificates required for work on board. On behalf of the Faculty of Maritime Studies in Split I have initiated collaboration with the Japanese Shipping Company NYK aboard whose container vessels I have served in the academic year 2006/2007.

Service Letters

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Service Letters are documents regularly issued by engine manufacturers and their licensees to inform engineers on various matters. Performance of each engine is continuously monitored and recorded data fed back to the manufacturers. The slightest irregularity is then investigated in order to eliminate its cause. The recommendations given in Service Letters often supersede those originally issued in the instruction manuals and the engine staff is advised to keep them as supplements to the relevant chapters of instruction books.

The paper aims at identifying the most frequent language structures that appear in Service Letters. For this purpose, a study has been undertaken of a specialized corpus, encompassing approximately 80 Service Letter reports, assembled from the MAN B&W Diesel A/S in the period between 1983 and 1999. Some tools employed in the investigation of Service Letters, such as frequency lists and concordances, have been borrowed from the field of corpus linguistics. Finally, the ultimate aim of the paper is to show the benefits of analyzing relevant authentic marine engineering texts for the purpose of identifying the most common language structures, which may then be included into English textbooks for marine engineers in order to focus students' attention to them and facilitate their acquisition and subsequent usage.

Key words: Service Letters, language structure(s), marine engineering, specialized corpus, corpus linguistics, concordances, frequency list

1 Introduction

Extremely rapid development of computer technology has made it much easier for foreign language teachers to access (or even assemble) and explore large amounts of electronically stored documents relevant to their students by using all kinds of

sophisticated computer software. In this way, significant and frequent language patterns can be determined and analysed and subsequently taken into consideration when developing materials, course books or designing classroom activities.

The following paper will focus on practical benefits that can be derived from the analysis of authentic materials relevant to marine engineering students, in this case Service Letters, which are regularly used by Marine Engineers as supplementary materials to instruction books. More precisely, the paper will investigate the most frequent language structures that appear in Service Letters. Tools used to facilitate the analysis, such as concordances and frequency lists, are borrowed from the field of corpus linguistic.

The following paper is laid out as follows: section 1 gives a brief and general introduction to the topic. Section 2 introduces the notion of Service Letters and their relevance. This section also gives a Service Letter sample and describes its typical outline. Section 3 deals with assembling and methods of accessing and analysing the collection of Service Letters used in this study. Section 4 gives an outline of the most frequent language structures found in Service Letters. And finally, section 5 summarizes the main points of the paper.

2 Service Letters and Their Relevance

Service Letters are documents regularly issued by engine manufactures and their licensees to inform engineers on various matters. Some of these matters are summarised below:

- revision of instructions regarding maintenance;
- change in overhaul intervals due to design modifications;
- recommendations regarding engine operations in particular conditions (for instance low output limits on heavy fuel);
- recommended modifications to be carried out by the ship's staff on engine components;
- introduction of checking procedures in order to discover abnormal wear;
- usage of new tools designed to facilitate dismantling and avoid damage and injuries;
- information about the replaceability of older engine components with others of latest design;
- warning against pirate manufacturers copying original engine parts but made of non-standard materials;
- recommendations to engage only authorized repairers for maintenance and repair work (non-authorized, unqualified service may give rise to damage)

Service Letters are the result of improvements in manufacture and design through accumulated experience arising from constant monitoring of the engine behaviour. Performance of each engine is carefully monitored throughout its service life, but especially during the guarantee period. On putting the vessel into commission, the engine operators are provided with a number of blank sheets for recording performance data to be fed back to the manufacturers. The filled-in sheets are returned

to the factory at the end of each voyage or at about monthly intervals for the builders' experts to judge the engine performance and discover probable irregularities. The slightest malfunction is then investigated to eliminate its cause. In case of trouble due to material failure, laboratory researches are carried out to improve its properties. After extensive testing and satisfactory results, the new material will find its application in the manufacturing process. In this way the most efficient, economic and up-to-date operation of the engine is ensured.

Furthermore, Service Letters can deal with specific engine types or contain general instructions for all engine types of that make. The recommendations given in them usually supersede those originally issued in the instruction manuals and the engine staff is advised to keep them in file to supplement the relevant chapters of instruction books. Service Letters are used by manufacturers as a reference when preparing up-dated instruction book editions.

2.1 Service Letter Layout

The heading of Service Letters gives only scanty information about the manufacturer if compared to business letter headings. It consists only of their name printed on the page top. However, at the foot of the page we can often find the address, phone, cable/telex and fax numbers of the head office, diesel service, production and forwarding, together with the e-mail address and a web page. (See Fig. 1)

Service Letters contain: (a) a sequential number and the reference line, (b) the indication to whom it is addressed, (c) the date, (d) the subject line indicating the type of engine the information refers to and (e) the body of the letter conveying the information. They are frequently signed and the manufacturer's name is re-written in full at the end of the letter. At the foot indication may be given of the number of pages or enclosures contained in the letter, together with the details concerning the head office, diesel service, production and forwarding.

2.2 Service Letter Sample

The sample shown below, Fig 1, is from the manufacturers of MAN-B&W Diesel A/S to report of a recently observed problem, i.e. burnt exhaust valve seats caused by a lack of spindle rotation. This brief, concise communication is at the same time an instruction stating that the indicator pin must only be activated for short periods of time since it is not designed for continuous work. By applying incorrect procedures, i.e. allowing indicator device to run continuously and wear a deep grove in the curved surface of the air piston, the free rotation of the spindle is obstructed. This, in turn, burns the valve seats. The letter also refers to the enclosed figure showing the damage and offers advice on how to correctly perform checks during starting and running and how to repair damage.

The layout of the letter, which was described in great detail in the previous chapter, is very simple: the letterhead has the Service Letter number, reference initials, the month and year of issue and the subject line referring to the types of engine and the engine components the problem and recommendations refer to.

MAN B&W Diesel A/S

Service Letter

SL97-352/KMJ
November 1997

K/L/S-MC Engines
Burnt Exhaust Valve Seats
Lifting/Rotation Indicator

Dear Sirs,

Burnt exhaust valve seats, provoked by a lack of spindle rotation, have recently been observed.

As a result of continuous activation, the lifting/rotation indicator pin had worn a deep groove in the curved surface of the air piston, thus obstructing the free rotation of the spindle. This situation is particularly prevalent at low engine load where the rotational force created by the exhaust gas forces on the spindle vane wheel is small. Please refer to the enclosed figure.

We therefore emphasize:

- That the indicator pin must only be activated for short periods to check the valve functioning, e.g. after overhaul work. Please refer to our instruction books, Volume I, Checks during starting and Checks during running, in Chapter 703. The indicator device was never intended or designed for continuous operation.

- At the next overhaul, the contact surfaces on the air piston and the indicator pin should be checked for damage. Small marks can be smoothened by grinding. Air pistons with extensive damage should be replaced. Repair by welding is not recommended.

Yours faithfully,

MAN B&W Diesel A/S

Carl-Erik Egeberg

Uffe Mikkelsen

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MAN B&W Diesel A/S
Denmark
Reg.No. 24 231

Fig. 1 Service Letter issued by MAN B&W Diesel, Denmark

The body of the Service Letter consists of short, clearly outlined paragraphs: the first informing the customers about the problem of burnt exhaust valve seats. The second paragraph reports cases of wrong procedures for the engine types mentioned in the

subject line, the third gives advice for the correct approach and the fourth recommends procedures for rectifying the damage. As majority of Service Letters it is signed by the company representatives. Sometimes, Service Letters are accompanied by a visual representation to facilitate the correct application of procedure.

3 Assembling and Analysing Service Letters: Creating and Accessing a Specialized Corpus

As it was stated earlier, this paper aims at identifying the most frequent language patterns of Service Letters. For this purpose, a study has been undertaken of a specialized corpus, encompassing approximately 80 Service Letter reports, assembled from the MAN B&W Diesel A/S in the period between 1983 and 1999. Some tools employed in the investigation of Service Letters, such as frequency lists and concordances, have been borrowed from the field of corpus linguistics

Corpus linguistics is a relatively new discipline that originated from the second half of the Twentieth Century when the first machine-readable corpora were compiled. Of course, large collections of texts had existed before then but one major difference was the introduction of computers. The rapid development of computer technology has had a huge impact on language teaching and linguistics, enabling linguists not only to store incredible amounts of data, as computers removed all restriction on the size of a corpus, but also to analyse them in a whole new way at much faster speeds. As a consequence, linguists can now make more objective language statements that are based on actual data, which can either corroborate or refute one's intuition, introspection or plain guessing. Therefore, the main goal of corpus linguistics is to discover authentic language patterns by analysing empirical data.

The first stage in the process of exploiting corpus data for teaching purposes (see Fox 1998, Willis 1998, Tominac 2005) and for possible inclusion in the textbooks would be to assemble or choose a corpus that is as relevant as possible to students because that will help to increase their motivation and raise their interest in the work. There exist many ready-made corpora in a number of specialized areas that can be found and downloaded on-line (some of them are free of charge). The other option would be to collect one's own data and create one's own corpus, which we have done for the purpose of our study. In this case, Service Letters have been chosen because of their importance in the work of Marine Engineers. Therefore, exploring their language patterns and including them in the English textbooks for Marine Engineers could be of great benefit to the Marine Engineering students.

Before going any further we should also briefly address the question of representativeness of a corpus. A corpus is defined as "a collection of naturally-occurring language text, chosen to characterize a state or variety of a language" (Sinclair 1991). It should be made clear that the corpus used in this study is not representative of general English, but rather of one of its specific registers. Therefore, it is not intended for research into the language as a whole but directed at a particular type of language. That is an important point to make because information in a corpus is never fully objective because the context dependency of words is related to genre, register or topic of the texts that it is built from. When we make generalizations about language we must see them in relation to the data on which they are based.

Perhaps the easiest way to access a corpus is by means of a concordancer. A concordancer is a special computer program designed to search the text and produce the occurrences of a single word or a phrase in the form of a list with the search-term in the centre and the context provided by the words to its left and to its right. Early in the text computing the KWIC (Key Word in Context) type of display was established and it is still the standard way of presenting concordance information. The concordancer allows us to determine the extent of the context, select the number of examples to be listed, compile word frequency lists, and perform various other functions depending on how sophisticated the software is. The concordancer used in this particular study is entitled MonoConc Pro (Michael Barlow 1999) and it is available on the website www.athelstan.com. Of course, this is not the only software of this type available and an Internet search will surely yield a number links to similar applications. Example of concordance lines for the verb *recommend* is shown in Fig. 2.

One of the useful starting points in investigating corpus data more directly is compiling a word frequency list to see which words appear with relevant frequency in a particular corpus. After the most frequent words have been identified, concordance lines can be generated around them and various language aspects, such as grammatical structures, etc. can be explored.

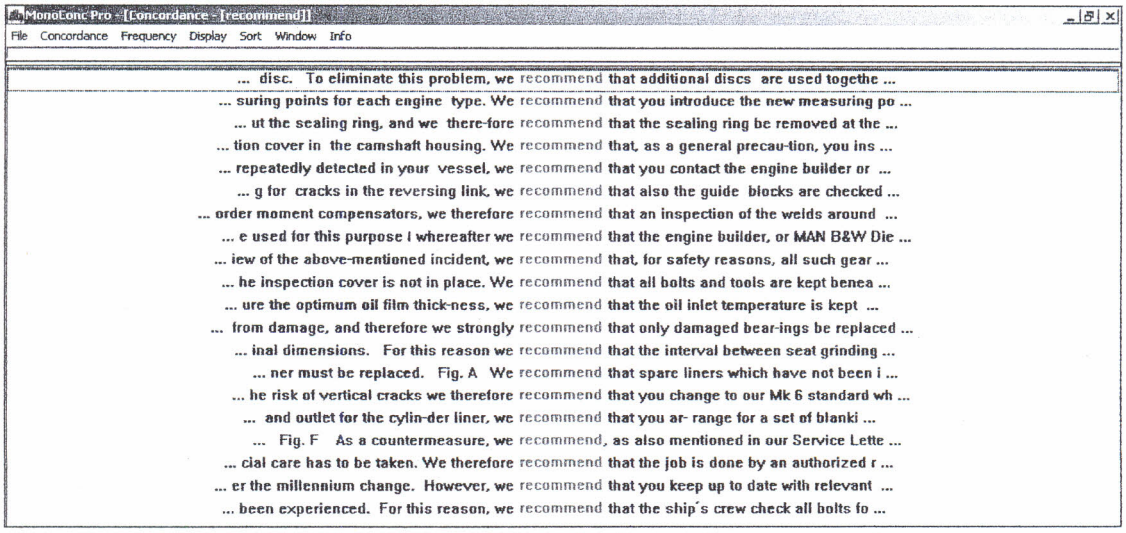

Fig. 2 Concordance lines for the verb *recommend*

4 An Outline of the Most Frequent Language Structures of Service Letters

Since the goal of this paper is to isolate and identify some of the most frequent language patterns of Service Letters, we have borrowed some useful tools from the field of corpus linguistics, namely concordances and frequency lists, in order to facilitate this study. It should be strongly emphasized that the paper's aim is not to describe every possible language structure that appears in Service Letters, but to focus on the most frequent ones.

When compiling a frequency list, we noticed that the word that appeared most frequently (just as is always the case in any corpus of English) was the definite article *the*. Other items, apart from the articles, that also ranked quite high were pronouns, conjunctions and prepositions. However, we have consciously chosen to put them aside and focus on verbs because of their high content. In the frequency list compiled from our collection of Service Letters it was clearly visible that the verb *be* and other modal verbs were ranked quite high. Therefore, we started our investigation by creating concordance lines with the verb *be* (and its other forms) as the node or KWIC. Since Service Letters typically offer instructions and recommendations, it was not a surprise to find that the infinitive form of the verb *be* (and its other forms), together with other modal verbs, such as *must*, *should* and *have*, which also appeared quite frequently, was actually part of a number of larger structures used to convey instructions and recommendations with varying degrees of directness. Apart from modals, we identified other verbs, such as *find*, *show*, *see*, *experience*, *observe*, *reveal*, *report*, *state*, *indicate* and *recommend,* which also formed part of similar and equally important structures. The structures that appeared most regularly are listed below:

The following structure is used very often to convey rules, regulations, orders or instructions:

Be (is/are) + to-infinitive

The *be (is/are) + to-infinitive* construction is extremely important and can be used to convey orders or instructions. It is actually a rather impersonal or indirect way of giving instructions and it is chiefly used with the third person (e.g. *All engine officers are to report to the Chief Engineer*). It often implies that the speaker is passing on instructions issued by someone else. This structure is also used in rules and regulations issued by authorities in order to standardise the correct procedures. This structure, or to be more precise, the structure *is/are + to-infinitive + past participle* appears regularly in our corpus and some of the examples are shown below:

After adjustment, the fuel valve ***is to be pressure-tested*** *in accordance with the directions in Chapter 909-6.3 of the Instruction Book, Volume II.*

The contact face of the piston crown ***is to be machined*** *with a relief groove and a tapered assembling surface.*

If the above conditions are not met, the rod ***is to be machined*** *to 5 mm below the original measurement (50 bore engines = 4 mm) and a spacer ring of special hardened steel* ***is to be installed*** *on the rod in order to restore the rod to its original dimensions.*

Another structure that appears frequently is the following:

Must + infinitive (usually with Passive)

This construction is used in written orders. *Must* expresses obligation imposed by the speaker. It can also imply that the speaker approves of an obligation.

For example:

To improve the fixing of the guide blocks, it ***must be ensured*** *that the guide pins are inserted in the holes with a tight fit.*

However, if the lowermost screw is loose, the pump ***must be lifted*** *and the below procedure must be applied for mounting the new screws.*

Important: In the following, care ***must be taken*** *to ensure that no foreign substances enter the gearbox when the inspection cover is not in place.*

In the examples with the verb *must* the obligation is a result of special circumstances. In other words, these procedures must be followed if the results are to be successful and if damage is to be avoided.

On the other hand, another frequent structure - *must not + infinitive* - expresses a negative obligation, order or prohibition.

Must not + infinitive

For instance:

Note: The guide block ***must not be caulked*** *after tightening.*

Max. grinding depth: ***must not exceed*** *the limit (G1) stated in Vol. II, Procedure 908-2, DATA.*

The only technical limitation on the number of discs to be used is that the block length of the spring ***must not be approached****, i.e. the maximum number of discs is limited to 5.*

Another structure that appears quite often is again found in written orders or instructions:

Imperative: bare infinitive or do not (don't) + bare infinitive

This structure can be used to give direct orders or to convey instructions, which are typical of engineering instruction manuals and, of course, Service Letters, which can be considered as their supplements

For example:

Check *that the dowel pins are not damaged.*

What to do Note: ***Do not clean*** *the spindle disc before inspection.*

Do not stand *near crankcase doors or relief valves – nor in corridors near doors to the engine room casing.*

It is interesting to note that although the verb *have/has* is the next verb after the verb *be* in the frequency list, it is mainly used to form the present perfect tense. It is interesting to note that out of 119 matches, only 2 were recorded in which the verb *have* is used in the following structure:

Have/has to + infinitive

This structure is also used to convey written orders and it was rather surprising to find that it does not appear that often in the Service Letters. It is used to express external obligation, i.e. obligation imposed by an external factor, unlike the same structure with the verb *must*, which expresses obligation imposed by the speaker. For example:

The difficulties are mainly caused by the clogging up of the grinding stone, which means that it ***has to be dressed*** *more often.*

We could perhaps conclude from the example given above that the frequent dressing of the grinding stone is an obligation consequently imposed by the clogging and not by the writer himself.

The next structure also appears regularly in Service Letters:

Should + infinitive

Should is used to express the subject's obligation or duty or to indicate a correct or sensible action. Here there is neither the speaker's authority, as with *must*, or external authority, as with *have to*. It is more a matter of conscience or common sense.

Another difference between *should* and *must* and *have to* is that with *must* and *have to* we normally have the impression that the obligation is being or will be fulfilled. With *should* we do not necessarily feel that the obligation is being or will be fulfilled.

However, *should* can be used in formal notices and on information sheets, such as Service Letters. In such cases *must* could be used instead of *should* without the change of meaning, but *should* expresses it more gently.

For example:

The new screws ***should not be locked*** *by caulking, as hitting the screw head improperly, could lead to a reduction of the tightening force of the screw.*

Pistons with extensive damage ***should be replaced****.*

Air pistons with extensive damage ***should be replaced****.*

It can be concluded from all of the structures identified above that the use of various modal verbs in structures which express instructions, orders and advice is quite prominent and obviously significant in Service Letters. This should come as no surprise since one of the most important features of Service Letters is to give instructions and advice based on previously recorded observations or problems.

Apart from structures with *should + infinitive*, another verb which expresses advice appears with relevant frequency – the verb *recommend.*

Recommend + that + object + (should) be
or
Recommend that + noun/pronoun + infinitive

For example:

We therefore ***recommend that the sealing ring be removed*** *at the next suction valve overhaul.*

The major part of the main bearing population in service will not suffer from damage, and therefore we strongly ***recommend that only damaged bearings be replaced*** *with the revised type.*

However, we ***recommend that you keep up to date*** *with relevant information from the suppliers on their respective www page sites on the Internet.*

Another phrasal expression with regular appearances indicating obligation or compulsion, apart from *must + infinitive* or *have to + infinitive* is the following:

It is + adjective + sentence starting with to-infinitive

For example:

In all cases ***it is essential to ensure*** *that the height of the intermediate spacer corresponds exactly to the height of the material removed in order not to affect the compression and maximum combustion pressures in service.*

It is necessary to protect *the fuel pump housing against drilling chips when drilling the hole, for instance by means of the collector shown on the above-mentioned drawing.*

It is very important to round *the edge of the hole in the pump housing as shown on drawing No. 559645-0.1.*

However, Service Letters do not only offer advice and instructions but also describe various engine parts and their conditions and report on the results of the investigation or inspection. For that purpose, particular verbs can also be encountered regularly. These are: *find, show, see, experience, observe, reveal, report, state, and indicate.* They usually appear in this structure:

Verb in passive form + that-clause

For example:

It has *occasionally* ***been reported and observed that*** *the space between the top cover and the fuel pump barrel has been blocked with coked heavy fuel oil due to a combination of leaky sealing rings and a blocked internal drain.*

Investigation has *recently* ***revealed that*** *a cause of these cracks may be a pressure build-up of approx. ten times the normal shock absorber working pressure between the sealing ring, Pos. 1, and the guide ring, Pos. 2.*

Recently, however, ***it was experienced that*** *a crankcase explosion took place shortly after the alarm mist sounded.*

Finally, it should also be mentioned that the tense which seems to appear the most, especially in the part of Service Letters referring to descriptions and observations, is the Present Perfect Tense, especially in the passive form:

Have/has (been) + past participle

For example:

We ***have*** *recently* ***experienced*** *incidents in which damage* ***has occurred*** *to the sealing ring on the fuel pump suction valve slide.*

*These cracks **have been found** in both the support faces for compensators mounted in connection with the main chain drive aft, and in the support faces for compensators mounted at the fore end.*

*Fretting between the piston crown and piston rod **has been observed** on some engines in service, and in rare cases fine cracks **have appeared**.*

The Present Perfect tense may be said to be a sort of mixture of present and past. It always implies a strong connection with the present. When the Present Perfect is used it does not necessarily imply thinking of any one particular action (the action may have occurred several times) or of the exact time when the action was performed.

5 Conclusion

The rapid development of computer technology has made it considerably easier for language teachers to compile and access real language corpora and further investigate them by using various types of software. The findings from such research can be used to create more suitable teaching materials. In order to demonstrate this, an investigation was undertaken of a specialized corpus of Service Letters, i.e. documents regularly issued by engine manufacturers and their licensees with the purpose of informing engineers on various matters. Tools used to investigate this corpus were frequency lists and concordance lines. They provided useful help in isolating the most frequent grammatical structures. The idea was to show the usefulness of investigating authentic texts relevant to students and to recommend that the language structures which appear with relevant frequency in such texts be included in English textbooks and that students' attention be drawn to them.

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Abbreviations

KWIC – Key Word in Context

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Ports of CALL
Computer-assisted language learning (CALL) as a means of focussing language goals within the maritime sector: the MarEng project[1]

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Abstract

The paper analyses the significance of CALL as a language-learning medium with an increasingly important mission in today's global economy. By presenting a case study of the MarEng project,[2] the paper emphasises the extent to which a web-based English language learning tool can provide a valuable contribution to a specific economic environment; the maritime sector. The paper first examines the nature of CALL, assessing the typically volatile and diverse characteristics associated with this particular method of language learning. By then focussing on the MarEng project, the paper offers a study of the pedagogical advantages and disadvantages of a computer-based tool that aims to provide authentic, tailor-made English language training for seafarers from multi-national backgrounds at global level. The role of teachers and material developers in the project is examined within an ESP context. The paper concludes with an analysis of the potential language-learning advantages of the MarEng tool.

Key words:
CALL, web-based, English language learning tool, maritime sector

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[1] For further details about the MarEng project refer to the website at http://mareng.utu.fi/

[2] Refer also to:
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1 Introduction

This paper will discuss the MarEng project focussing on its role as a CALL tool within the maritime sector. The objective of the MarEng project was to produce a maritime English learning tool available on the Internet. The project, which was partially financed by the Leonardo da Vinci programme of the European Union ran from October 2004 to June 2007. It was an international project which aimed to promote the maritime English language competences of those working in the various maritime professions in Europe.[3] In other words the MarEng end-product is a computer-assisted language learning tool designed for a specific category of learners, namely those employed in or associated with the maritime sector. This paper will briefly discuss the concept of Computer Assisted Language Learning (CALL) before moving on to examine MarEng as an example of how CALL can contribute to learning English within a specific economic environment, the maritime sector.

2 Computer Assisted Language Learning (CALL)

Levy (1997:1) defines Computer Assisted Language Learning (CALL) as "the search for and study of applications of the computer in language teaching and learning." It is a definition which covers a multitude of possibilities and can be applied to all languages as well as a vast range of subject matter and skill areas. Forty years ago pioneers of CALL believed that language researchers and teachers should play a key role in developing the concept. Subsequently these participants were often subjected to fierce criticism spawned on the one hand by the overwhelming variety of language learning materials on offer and on the other by the headlong pace at which computer technology evolves. CALL is thus by its nature extremely volatile and it took – and still takes - courage to research and develop products in this sphere in the awareness that technology may have labelled them "old-fashioned" within a relatively short time. Nevertheless, language teachers, in particular teachers of English as a Foreign Language (EFL) and English for Special Purposes (ESP), persevered and eventually brought CALL to the world's attention. CALL prospered and to date there is no sign of interest in the field diminishing. Indeed it would now be impossible to imagine a university or academic institution without recourse to computer-based material.

This is not to say that computer-assisted learning tools consistently offer the learner the best alternative. The rapidly evolving nature of technology and the 'blips' which sometimes cause it to fail at crucial moments contribute to its volatile image. It is indeed through trial and error that computer-based learning systems evolve and improve on an almost daily basis but the rapid evolution and flaws inherent in technology can sometimes 'scare' the learner. Complaints are often voiced that the technology in question looks too complicated and is therefore best left alone. Computer applications should however not be designed to blind the learner with technology but should set a challenge which he or she feels attracted to undertake.

Despite the negative aspects which the volatile nature of CALL at times reveals, the computer has created for itself an integral role on the language-learning circuit. By the same token the use of computer-based technology to support language teaching, English language in particular, has infiltrated widely into current global industry and commerce. The rise of English as the *lingua franca* of the global economy has led to the recognition that that this

[3] Details of the project and a download of the learning tool can be found on the MarEng website at http://mareng.utu.fi/

particular language is a "must-have" for anyone entering the commercial arena of the 21st century and that failing to equip oneself with the necessary communication skills in English can potentially impede the expansion of trade and industry at certain levels. One only has to surf the Internet to discover the vast market in CD-ROMs offering English language courses for specialised purposes. At which point the market for online language courses becomes, or indeed has become, saturated lies beyond the scope of this paper yet it is clear that the demand for and popularity of computer-based learning tools remains undisputed. The question as to why online learning has achieved such popularity should, however, at this stage be examined.

The reasons appear manifold. In the first instance there is the infiltration of technology into every aspect of 21st century life. Current society has to a large extent become reliant on technology and words such as network, mobile, wireless and surf, to name but a few, are firmly embedded in the global vocabulary whilst LAN, iPod, Blackberry, Wii and Bluetooth have become household terms. Combined with this is the high level of learner familiarity with current technology and thus the ease with which current learners are able to "tap into" the range of technology on offer. Busy managers or members of staff working under time restraints can no longer afford the luxury of transferring to a traditional classroom environment to learn a second language but prefer, for example, to optimise their time by accessing an interactive language course on their laptop during the lunch break. The hardware is available, the software can be downloaded and the learner feels comfortable with his surroundings and in most cases with the technology in question. Computer-based learning transcends time barriers and global barriers. In addition, computer-based learning is renowned for the variety of authentic materials which it is able to offer. Last but not least the element of fun and challenge in computer-based learning should not be underestimated. CALL empowers the learner who is able to select and adjust the pace at which he works, estimate the challenges involved and gain satisfaction from completing tasks correctly.

3 Expert MarEng meets CALL expectations

This section of the paper will examine the MarEng project in greater detail, specifically looking at the way in which it combines expertise in maritime English with the aforementioned considerable benefits associated with CALL. When studying the literature on CALL there can be little doubt that the role of the English teacher as author or material developer has come to be regarded as central to the concept and indeed the

CALL survey conducted between September 1990 and March 1991[4] revealed that 73.2 per cent of respondents felt that teachers should be involved in writing CALL material (Levy, 1997: 141). Moreover when the language in question is English for Special Purposes (ESP) the greater the need to involve highly specialised individuals. The partners in the MarEng project were therefore selected for their expertise in education and the maritime sector and included teachers of (maritime) English, researchers, training managers, seafaring professionals and representatives of the maritime industries. Maritime institutions represented in the project consortium were wide and varied and included the Institute of Transport and Maritime Management Antwerp (University of Antwerp, Belgium), Gdynia Maritime University (Poland), the Latvian Maritime Academy (Latvia), The University of Helsinki

[4] It would seem logical to support the view that teachers of English should be integrally involved in the production of CALL materials on the grounds that it would, I feel, be difficult to prove that an IT specialist without experience in language teaching were the best candidate to develop language-learning materials. A combination of the two might prove a more attractive solution.

(Finland), Sydväst University of Applied Sciences, School of Maritime Studies (Finland) and the University of La Laguna, School of Nautical and Sea-related Studies (Spain). The Centre for Maritime Studies, University of Turku (Finland) acted as co-ordinators of the project. Throughout the project the diverse pedagogical experience represented by the project's ESP teachers proved crucial to material authorship. To date there would appear still to be a great lack of dissemination of teaching material in the field of maritime English. Pritchard (International Maritime English Conference (IMEC))[5] reminds us that specific teaching materials may well exist but have been targeted at a narrow, often local audiences and only disseminated to a relatively small user population, thus limiting their availability to a wider, global audience, namely teachers and learners worldwide. Despite coming from diverse pedagogical and cultural backgrounds the MarEng partners were in agreement about the difficulties they had faced over the years in obtaining teaching material or being able to refer students to extra-curricular maritime material. Tales of burning the candle at both ends in order to complete a lesson plan might not sound unfamiliar, but having to do so on a regular basis simply for want of available material is not so common. Initial MarEng partner meetings thus quickly established the potential appeal of MarEng as a unique and long-overdue project; it would not only serve as an autonomous computer-based learning tool for seafarers, the first free-of-charge material of its kind, but could also be used in the classroom as a teaching aid. Round the table discussions at the same time rapidly brought to light the importance of tailoring the material very specifically to the needs of the maritime community. Once more the need to draw on the contribution of experts in the field was indisputable.

4 Authentic English for maritime purposes

Having noted the crucial role of experts as authors of ESP material I will next examine the content and structure of the MarEng web-based maritime English learning tool and focus on the niche which MarEng fills by virtue of its ESP qualities. MarEng is an organised database of various maritime English teaching and learning materials, arranged into thematic modules each containing a number of units which are aimed at different language levels (intermediate and advanced). The intermediate section follows the voyage of a virtual ship, the MS Marina, as she travels within Europe from the Port of Santander in Spain to the Port of Kotka in Finland. On the voyage, the crew of the ship faces different routines and exceptional situations in which maritime English needs to be used on board and in port operations. The first units examine the structure of a modern port and the loading of the MS Marina. Once the ship embarks on her voyage the crew is confronted with heavy weather, an encounter with the coastguard and changing the watch, amongst other situations. The advanced section offers more specialised material not only for seafarers but also for other members of the extended maritime community, such as shipping managers. This section includes units on cargo handling, port operations, shipping and maritime management, ice navigation and port state control. All of the material is English-English and is based on language used in actual situations on ships, in ports, in shipping companies and elsewhere in the shipping chain. The STCW95 (Standards of Training, Certification and Watchkeeping) of the International Maritime Organization (IMO) were taken into account when preparing the material, as was the Standard Marine Navigational Vocabulary (SMNV) and, in particular, the IMO Standard Marine Communication Phrases (SMCP).[6]

[5] The IMEC website includes a range of articles related to maritime English. Available online at http://home.planet.nl/~kluijven/articles.htm

[6] Refer to the list of references for further details of these codes and standards.

MarEng thus focuses on the unique and specialised character of maritime English and, as stated, the material is based on realistic maritime situations at sea and on land. Realism and authenticity are keywords in the maritime English environment given that not only is English the *lingua franca* of the shipping industry but is, moreover, compulsory and required by STCW and International Convention for the Safety of Life at Sea (SOLAS) conventions. There is however little doubt amongst the maritime community that English is a key player in marine safety enforcement and that communications deficiency at sea can lead to casualties and occasionally fatalities. There have been several notorious cases in the past, including the "Sea Empress", an oil tanker which in February 1996 leaked crude oil onto the picturesque Pembrokeshire coast in Wales in the United Kingdom. The disaster was largely due to the fact that the only two Coastguard tugs available were, at the time, far from the incident in their home bases and the authorities proved incapable of mobilising them promptly. Instead it transpired that there *was* an extremely powerful tug in the neighbourhood, but the situation quickly took on a somewhat ludicrous nature when this tug arrived at the scene of the disaster. It soon became apparent that none of the tug's Chinese-speaking crew was competent enough in English to communicate efficiently with those on board the Empress. Eventually the tanker was floated free but only after many more tugs had finally arrived to assist. The Sea Empress need never have foundered and the subsequent investigations into the disaster emphasised the need for a common language, specialised maritime English, which could be competently used by the seafaring community worldwide.

A specific example from the advanced level of the learning tool which clearly illustrates MarEng's focus on a standard and specialised English language is to be found in the section on Radio Communication (Message Markers, Exercise 1). This exercise instructs the learner in the use of message markers regularly used in Vessel Traffic Services (VTS) during ship to ship or ship to shore radio communication. It is interesting to note the linguistic reasoning behind the use of message markers. Trenkner (2005) of the International Maritime Lecturers Association (IMLA) sub-committee on maritime English, explains that the meaning of certain words in English are dependent on the context in which they appear. Such words are frequently misunderstood by non-native speakers and thus pose a risk which can potentially lead to accidents if used, for example, in VTS communications. The conditionals "may", "might", "should" and "could" are in particular not only prone to misinterpretation but, as teachers of ESL will recognise, are notoriously difficult for the student to master. They are therefore excluded from the SMCP.

Consider then this example within the context of MarEng. In the latter the learner is taught to respond using the standard message markers *Instruction*, *Advice*, *Warning*, *Information*, *Question*, *Answer*, *Request*, *Intention*. Instead of asking "*Could* you stop your engines immediately?" which is open to misinterpretation, the learner is drilled to recognise and use the message marker, in this case "*Instruction*: Stop your engines immediately". By the same token the student is steered away from the use of the potentially unclear conditional "You *should* steer course 180 degrees" and learns instead to use the marker "*Advice*: Steer course 180 degrees." The exercise is set out below.

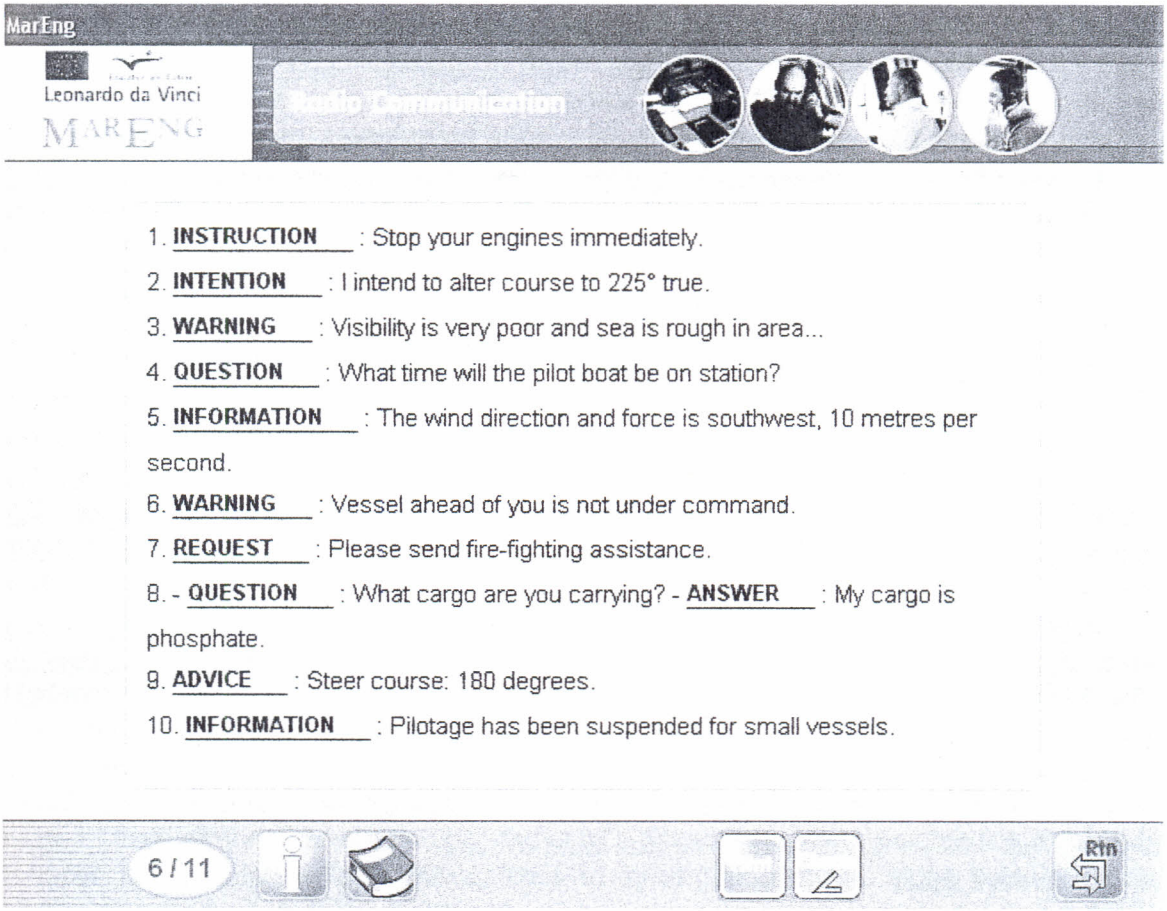

Figure 1: Example of MarEng exercise
MarEng/Advanced level/Radio Communications/Message Markers/Exercise1

In addition to VTS message markers, Standard Marine Communication Phrases (SMCP) are awarded a unit to themselves in the advanced section, providing another example of the 'field specific' English in the MarEng learning tool. The IMO's SMCP were adopted in November 2001 and replaced the Standard Marine Navigational Vocabulary (SMNV) of 1977 (amended in 1985). The ability to understand and use the SMCP is required for the certification of officers in charge of a navigational watch on ships of more than 500 gross tonnage or more and hence the decision by the partners in the MarEng project to highlight the SMCP's central and crucial role in maritime English. The chair of the IMO Working Group on the Standard Maritime Communication Phrases (SMCP) notes that it is "of paramount importance (…) that the (SMCP) are taught embedded in a well thought-out methodical apparatus generating a close to real-life maritime environment and appropriate situations, preferably applying the content-based communicative approach" (Trenkner, 2005).

A specific example of the SMCP can be found in the advanced level in the unit on weather.[7] In this 'drag and drop' exercise the learner is required to match the descriptive term to the wind speed, as shown in the correct transcript of the exercise below.

Rapidly	Moving	at	35	to	45	knots
Slowly	Moving	at	less	than	15	knots
Rather quickly	Moving	at	25	to	35	knots

[7] MarEng/Advanced level/Weather/Winds/Exercise 3

Very rapidly	Moving at more than 45 knots
Steadily	Moving at 15 to 25 knots

By a process of matching the correct term to the speed the intention is that student absorbs and adopts the SMCP and understands that the given terms are the only descriptions in English permitted in the maritime context of weather.

5 Setting goals and achieving competency

It would not be fair to leave the topic of content without mentioning that MarEng is not purely a vehicle for 'field specific' English but also recognises the maritime community's need to achieve a competent level of English in order to function in today's global maritime sector. The generic skills, writing, reading and listening are all included in the MarEng learning tool and those learners wishing to improve their knowledge of grammar may consult the separate grammar section which accompanies the intermediate level. There are numerous exercises which also offer the learner the opportunity to improve his competency in English by, for example, practising verb forms. The advanced level's section on Shipping and Maritime Management includes an exercise in which the learner has to write a sentence including the correct form of verb in the past.[8] The following are examples from the exercise.

Question: What was your rank when you first went to sea?
Hint: be/deck cadet
Answer: I was a deck cadet.

Question: How long have you been working in shipping management?
Hint: work/since 1985
Answer: I have been working in shipping management since 1985.

Speaking is the one skill which is not represented in MarEng for the reason that computers still have difficulty in promoting speech. Speech technology would still constitute a risk and probably pose a financial burden. It was thus deemed to be beyond the scope of the project.

At this stage the question must be posed as to benefits of MarEng within CALL environments as opposed to traditional teaching environments; in other words why, for example, is a computerised version of the exercise at Figure 1. more effective than, for example, paper photocopies of the same exercise distributed to students in a traditional classroom environment? Learning a language has always involved an element of 'drill' and early versions of CALL material tended to focus on this necessary, but often tedious, method of learning, partly because the available software at the time lent itself more easily to this particular application (Levy, 1997: 15). Given that, to date, computer-assisted learning is still not available on a worldwide basis, teaching methods in certain areas of the world still have to resort to this style of drilling. Colleagues from the MarEng project who had recently attended a conference in China had had the opportunity to visit a maritime institution. They told me how they had witnessed large numbers of students seated in a tiered lecture theatre being made to repeat after the instructor, in drill fashion, standard maritime words and phrases in English. This was seemingly the most effective method of learning available to

[8] MarEng/Advanced/Shipping and Maritime Management/Ship Management (Interview) Exercise 3

them. The use of the computer, however, can circumvent or, at the very least, alleviate drill methods of learning. Thus learning message markers via the MarEng exercise, for example, need not prove a monotonous process of stimulus, response and reinforcement (drill) but can become interactive, fun, autonomous and, at the same time, provide a degree of authenticity.

6 Providing interaction and creating flexibility

The degree of interactivity present in CALL varies from programme to programme. In the aforementioned exercise the learner, having read and assimilated the instructions about message markers, is required to give the appropriate marker in the context by writing the answer in the space provided. If the learner requires assistance he or she can request this by clicking on the 'hint' button provided. A 'check' button finally confirms whether the learner has provided the correct answers. The computer software thus encourages the learning process by interaction and it must, undoubtedly, be true to say that the intention of the majority of CALL authors is to inject an element of fun into this interaction in order achieve a successful learning method. I assisted with the piloting[9] of the MarEng learning tool and results clearly revealed that the units and exercises which appealed the most were those involving the greatest interaction. The keen student will struggle with a passive role but, in contrast, will be encouraged to learn through interactive processes which move away from repetitive learning and encourage exploration and discovery. The piloting revealed one of the most popular exercises to be the intermediate level's Unit 4 (The Ship) which includes a tour of the MS Marina and 'drag and drop' exercises requiring the learner to provide the correct name in English for different parts of the ship[10]. Should the learner attach the incorrect label to a part of the ship the label springs back to its original position at the bottom the screen, challenging the learner to think again.

The element of autonomy and flexibility involved in computer-assisted learning should be emphasised in this context; the learner is able to move through MarEng not only at a pace which suits him but also at a time and place which he has chosen. In terms of pace, 'stop', 'hint' and 'continue' options are perceived as indispensable to current computer-based learning tools since these permit the learner to regulate the speed at which he works. The MarEng tool is no exception in this case and Lingonet Ltd.,[11] the partner responsible for the technology and production of the learning tool, refined and enhanced the product to match current expectations of online flexible learning. As far as time and place are concerned I refer again to current working environments where the opportunity to transfer to a classroom does not exist yet computer hardware/software is often accessible. One of the major advantages of CALL is that the computer, here in a tutor role, provides flexible language instruction in the absence of a teacher (Levy, 1997: 205). Thus the seafarer at leisure onboard or onshore visiting the port's local Mission for Seafarers may choose to access a computer at any time of day and improve his or her knowledge of maritime English with the MarEng tool.

7 Establishing realistic learning tools

The ability to offer a wide variety of authentic language and communication opportunities to the online learner is arguably the computer's greatest asset and cannot be matched by the

[9] Piloting of the MarEng tool in Belgium was carried out in December 2006 by the Institute of Transport and Maritime Management Antwerp and the Department of International Business Communication, University of Antwerp, and took place both at ITMMA and the Antwerp Maritime Academy.
[10] MarEng/Intermediate Level/Unit 4 The Ship/A Tour on the MS Marina/Ex. 2 and 3.
[11] Lingonet Ltd., Linnankatu 11 A, FI-20100 Turku, Finland.

solitary teacher in the classroom. The authentic, or at the very least realistic, nature of the material used in the MarEng tool was considered of prime importance and became the subject extended discussion during the project. It is appropriate here to mention Trenkner's (2005) reference to the globally increasing numbers of multi-lingual crews often with a sub-standard qualification in maritime English. Confronted with Trenkner's statistics the author of CALL materials must acknowledge that not-only the standard of English within the seafaring community should be addressed but also this community's ability to *understand* both native and non-native speakers of English, especially in emergency situations. MarEng thus includes a variety of audio exercises and a conscious decision was taken to use both native and non-native speakers of English when recording the voices for these exercises. The introduction to the intermediate section of the MarEng tool[12] immediately illustrates this point. Captain James and the crew of the MS Marina introduce themselves and the student hears them speaking. Captain James is from Weymouth in the United Kingdom. He is a native speaker of English. Chief Mate John Andersen, however, is a Dane, from Copenhagen whilst Second Mate Timo Ranta is from Turku in Finland. They are non-native speakers and have corresponding accents. Unit 12 of the intermediate section[13] offers the learner the opportunity to hear radio communication between a native and a non-native speaker in an emergency situation. In the dialogue Captain James (native speaker) sends an emergency message by radiotelephone requesting that a badly injured crew member be air lifted to hospital. The call is made to the MRSC (Marine Rescue Sub Centre) in Helsinki, Finland. The member of staff manning the MRSC radio telephone is Finnish and speaks English with a corresponding accent. Other examples of national and regional accents can be found in the advanced level's unit on the engine room, which includes an interview with Peter Lund, a native of Australia, in which he talks about his job as a trainer at Wärtsilä Land and Sea Academy. Visual material also contributes to the realistic character of the learning tool and provides another example of how the computer as tutor, as opposed to the traditional tutor, is able to offer immediate, interactive feedback, in visual form. The unit on shipping and maritime management in the advanced level of MarEng contains a 'matching' exercise on the definition of different types of vessels[14]. Once the learner provides the answer, by matching the correct vessel name to the definition, a photograph of the corresponding vessel appears in a window.

Although financial parameters in a project such as MarEng to a large extent govern the quantity and quality of audio-visual and multimedia materials produced, I would still suggest that the MarEng learning tool accomplishes its objective of using multimedia software to support the teaching of English in authentic and realistic maritime situations.

8 Recommendations

As regards recommendations there are several valid observations. Firstly the success of the tool will clearly depend on both the material content and the computer programme, but piloting of the project leading to elimination of errors and enhancement of the computer/learner interface has undoubtedly improved the end-product, enabling the programme to give correct and reliable feedback and fulfil its role as tutor. It may be that some errors still exist and, as previously mentioned, the generic skill of speaking is not included in the tool, but, as with any CALL project or material, today's product will serve as

[12] MarEng/Intermediate/Introduction/A Voyage on the MS Marina Captain James and his crew.
[13] MarEng/Intermediate/Helicopter Rescue/Read and Listen
[14] MarEng/Intermediate/Shipping and Maritime Management/Chartering a Ship (Telephone Conversation)/Exercise 1

a platform for tomorrow's, thus paving the way for improved language learning tools in the future. Secondly there is the question of the transient and volatile nature of CALL materials. Egbert and Hanson-Smith (1999) argue that "computer-assisted language learning (CALL) is changing so quickly and significantly that the only constant is change itself". If this was the case in 1999 at the time of publication, such a statement must be even more applicable to state-of-the-art technology with its breakneck innovations and trends. As I previously mentioned one of the more formidable aspects of CALL is the rate of change which it, by its very nature, encompasses. Hence one of the questions confronting the partners, and in particular the co-ordinators, of the MarEng project is the future maintenance of the learning tool in the face of changing technology, learning materials and, indeed, the English language itself. In order for the material to remain up-to-date rather than slipping into obsolescence a considerable amount of maintenance will have to be applied on a relatively regular basis. Finally, the MarEng end-user must play a role in future recommendations. The intended users of MarEng are maritime English teachers and students as well as individuals working in different maritime professions. The intention is, therefore, that the MarEng material can be used not only in distance education and for self-study but also online in the classroom. Piloting carried out in Belgium at the Antwerp Maritime Academy showed students to be enthusiastic about using MarEng in a CALL classroom environment, with a teacher on hand. To date, however, MarEng does not include specific instruction, such as an online teacher's handbook, for the maritime English instructor. This would be a project for the future.

9 Conclusion

This paper has set out to examine the MarEng learning tool within a CALL context and illustrate the potential advantages of computer-based English learning within a specific field, the maritime sector. MarEng does not claim to provide definitive instruction in maritime English to every name, rank and number in the marine community, but it does attempt to optimise the many advantages of CALL, including interaction, autonomy, flexibility, authenticity, entertainment, within an ESP environment. Trenkner (2005) states that "shipping companies pay utmost attention to the ME performance their crews are able to render, this ranks second out of all the criteria". MarEng, as the first free computer-based English learning tool for the seafaring community fills a gap in the market and aims to improve performance in maritime English. Within a global context it is proven that competence in field-specific English, including knowledge of standard marine vocabulary and, in particular, the IMO Standard Marine Communication Phrases (SMCP), contributes to improved safety and enhanced trade and the hope is that learning English onboard the MS Marina as she makes her various ports of call will focus and achieve language goals in the sector.

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YARDSTICKS FOR MARITIME ENGLISH ASSESSMENT PURPOSES

- a uniform tool for students, teachers, officers and end-users

A Position Paper for discussion

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Abstract

Assessing student performance accurately and meaningfully has always been one of the great predicaments of education. A result expressed as a number of marks out of a maximum total, or as a percentage, is simple to read but often lacks any true meaning when read by an outsider with little or no knowledge of the subject and/ or the difficulties involved in achieving the result, and when read by the student if there is no additional feedback. This has become no less important when the IMO STCW Convention is under review and global assessment goals are being required.

Reliably assessing competence is no easy task, especially on an international level, but the process can be facilitated somewhat by establishing credible "Yardsticks" against which student performance can be measured while at the same time providing goals for the tasks and requirements of the seaboard ranks. Thus a practicable and internationally accepted assessment tool, namely the Yardstick, that identifies the Maritime English communication performance required for the STCW95 operational and management levels would be more than an academic exercise – it being meaningful for students, MET institutions, officers and not least for end-users (i.e. shipping company management) who have frequently asked for such a device to become available.

For IMEC 19 the authors have prepared this Position Paper to kick-off a Group Discussion session.

1 Background

Assessing student performance accurately and meaningfully has always been one of the great predicaments of education. A result expressed as a number of marks out of a maximum total, or as a percentage, is simple to read but often lacks any true meaning when read by an outsider with little or no knowledge of the subject and/or the difficulties involved in achieving the result, and when read by the student if there is no additional feedback. This has become no less important when the IMO STCW Convention is under review and global assessment goals are being required.

The creation of a practicable and handy Yardstick was first addressed within the Maritime English context at the German Association of Maritime English (GAME) Summer Seminar held in Gdynia, Poland in 1994 in a paper entitled "Bring on the bands" (Cole, 1994a; Echo August 1994 Nr 28 pp 4-12). Here the author proposed supplementing assessment scores (marks and percentages) with banded descriptors that would be "accurate, easily understood and meaningful to both the individual student and to faculty members at large" and challenged the participants to draft appropriate Yardsticks.

This was taken up in the same year at the GAME Autumn Seminar held in Hamburg, Germany, where in a session entitled "Language performance assessment of (future) ship's officers and ratings" working groups were asked to consider two Yardstick proposals prepared by Palti and Katarzynska. As a result of the discussions Cole compiled a "Yardstick of English language competency for ship's officers" (1994b; Echo December 1994 Nr 29 pp 10-11). This document, while often referred to in the

literature, received no further attention, most likely due to the fact that in the mid to late nineties the development and application of the Standard Maritime Communication Phrases dominated the activities at Maritime English gatherings.

Nonetheless, what has become evident, as voiced at the time, is that a practicable and internationally accepted assessment tool, namely a Yardstick that determines the Maritime English communication performance as set out in the STCW95 operational and management levels and in the SOLAS Convention, 2004, has great potential – it being meaningful for students, MET institutions, officers and not least for the end-users, namely the shipping industry. In particular the personnel departments of the shipping companies which recruit their shipboard crew on a worldwide scale, frequently voice the need for a practicable instrument against which they could determine the Maritime English proficiency of an applicant for a deck or engineer officer position and assess whether s/he is suitably qualified to meet the communicative requirements of the position envisaged or whether a recurrent testing of an actively sailing officer is necessary – this may prevent shipping companies from making costly or even safety endangering wrong choices.

This became obvious during the authors' research for the IAMU PROFS Project, 2005-2006 (Iberica, autumn 2007) leading them to recommend that "issues concerning assessment ... should be the topic of further research; in this respect standards should be established". As a result the authors have since revisited and revised the 1994 Yardstick adding depth to the descriptions and identifying the minimum band level expected of the various officer ranks. It is this document that is presented for the consideration of the participants at IMEC 19, and when refined, hopefully receives international recognition. This, the authors believe, would be best achieved by ensuring that it is ideally included among the list of STCW issues to be reviewed by the IMO STW sub-committee due to be finalised during 2008; the resulting amendments are expected to enter into force on 1st July 2010, or in any other appropriate directive IMO document as, for instance, an annex to the IMO SMCP which will be under revision in 2008.

In this respect it is worth noting that the International Civil Aviation Organization (ICAO), which like IMO is also a specialised agency of the UN System dealing with international transportation, will integrate an ICAO Language Proficiency Rating Scale into the annex to its Procedures for Air Navigation Services, Rules of the Air and Air Traffic Services, entitled Aeronautical Telecommunications, Montreal 2006 as revised – this should be feasible for IMO, too.

2 The Yardstick

When developing the Yardstick below the authors deliberately did not include the identification of Maritime English communication requirements of the different shipboard rating ranks, i.e. the STCW95 Support Level, but restricted themselves to the personnel covered by the STCW95 Operational and Management Level educated and trained at higher MET institutions.

The shipping industry, however, may wish to have a Yardstick available for shipboard rating ranks, too. In this case an appendix would need to be developed together with the industry as the Maritime English requirements set out in the STCW95 (Part A, Chapter II, Table A-II/4 and A-III/4) regarding ratings are comparatively vague and need to be considered in the review of STCW95.

Furthermore, requirements concerning general English language proficiency have not been included *expressis verbis* as in the authors' understanding a certain command of general English is a basic prerequisite in this respect (cf IMO SMCP 2002).

YARDSTICK OF MARITIME ENGLISH COMPETENCY FOR SHIPS OFFICERS		
Band	***Definition***	***Descriptor***
9	**Expert User** (Senior Navigation Officers/ Senior Engineer Officers/Masters)	Has a full command of Maritime English as to safe navigation, technical ship operation, emergency management, cargo handling and administration; meets fully all the Maritime English requirements as laid down in STCW 1978/95. Communicates fluently on radio complying with the Radio Regulations, is fully conversant with the IMO-SMCP and uses them flexibly when the addressee gives reason to apply them. Expert in the use of glossaries/dictionaries, and seldom needs aids when reading IMO and other documents or handling professional correspondence. Unhindered when leading meetings, even controversial ones, with other officers, crew, authorities, services and outsiders. Able to develop personal skills to include the instructions of others in the use of the English language on board.
8	**Very Good User** (Senior Navigation Officers/ Senior Engineer Officers/Masters)	A command of Maritime English approaching that of the expert user in safe navigation, technical ship operation, emergency management, cargo handling and some administrative tasks; meets fully the Maritime English requirements as laid down in STCW 1978/95. Copes well even with demanding and complex language situations, whether in oral or printed/written form, with only rare uncertainties and minor lapses in accuracy, fluency, appropriateness and discourse which do not affect communication. Communicates fluently on radio complying with the Radio Regulations. Fully conversant with the IMO-SMCP. Gives clear and sufficient orders in all situations connected with job and rank. Able to develop personal skills to include the instruction of others in the use of the English language on board up to band 6.
7	**Good User** (Junior Navigation Officers/ Junior Engineer Officers)	Uses Maritime English effectively but may need to take special care in complex and difficult situations; meets the Maritime English requirements as laid down in STCW 1978/95. Communicates well enough on radio complying with the Radio Regulations. A few lapses in accuracy, fluency, appropriateness and discourse and in conveying or comprehending the content of a message, but communication is effective, consistent and unmistakable. Conversant with the IMO-SMCP. Can give clear and succinct orders to ratings. Understands written and

YARDSTICK OF MARITIME ENGLISH COMPETENCY FOR SHIPS OFFICERS		
Band	***Definition***	***Descriptor***
	Minimum required for certification as Chief Officer	succinct orders to ratings. Understands written and spoken instructions in how to use, maintain and repair equipment. Any lack in Maritime English skills does not hinder safe ship operations. Able to draft the messages, reports and letters required for ship business occasionally using dictionaries, glossaries and/or correspondence guidelines.
6	**Competent User** (Junior Navigation Officers/ Junior Engineer Officers) **Minimum required for certification as OOW/EOW**	Uses Maritime English with confidence in moderately difficult situations; meets basically the Maritime English requirements as laid down in STCW 1978/95. Noticeable lapses in accuracy, fluency, appropriateness and discourse that may lead to difficulties in complex situations. Communication is effective on most occasions. Can communicate on radio under the supervision of senior officers applying selected standard phrases and occasionally using manuals in order to comply with the Radio Regulations. Speaks, reads and writes Maritime English sufficiently well for ship operations. Is familiar with the IMO-SMCP. Competent use of language in giving and executing orders. Able to respond competently in emergencies. Able to comprehend nautical/engineering publications. Able to write up logbook without causing misunderstandings.
5	**Effective User** (Assistant Navigation Officers/Assistant Engineer Officers)	Uses the language independently and effectively in all familiar and moderately difficult situations. Can read and pronounce the IMO-SMCP applicable to the working sphere. Frequent lapses in accuracy, fluency, appropriateness and discourse, but usually succeeds in communicating. Basically abilities as at band 6 but permitted to act only under constant supervision. Effective use of Maritime English in giving and carrying out orders.
4	**Modest User**	Uses basic range of Maritime English, sufficient for familiar and non-pressure situations. Many lapses in accuracy, fluency, appropriateness and discourse that restrict continual communication so that frequent efforts and guidance are needed to ensure that the communicative intention is achieved. Renders the minimum level required to follow specialist instruction in Maritime English using the IMO-SMCP. Able to ask and answer basic questions referring to the vessel, its cargo, equipment and machinery. Can pass on distress/urgency and safety messages and ask for assistance in cases of

YARDSTICK OF MARITIME ENGLISH COMPETENCY FOR SHIPS OFFICERS		
Band	***Definition***	***Descriptor***
		emergency using the relevant IMO-SMCP.
3	**Limited User**	Can communicate using sentences and questions. Problems in accuracy, fluency, appropriateness and discourse so that communication frequently breaks down or is difficult to maintain. Understands and executes orders from the IMO-SMCP for basic shipboard needs such as general emergency drills, person over board, and standard wheel/engine orders. Can speak about basic duties on board.
2	**Intermittent User**	Uses a very limited range of Maritime English. Adequate for basic needs and simple situations. Able to verbalize and understand such items as names and ranks, ship's name and certain specifications of the vessel and/or its machinery. Can look up basic phrases from the IMO-SMCP but uses them inflexibly. Can ask for help and assist officers directing passengers in different situations, particularly in cases of drills or emergencies.
1	**Non User**	Uses a few words or phrases such as common greetings. Capacity limited to elementary listening and reading skills. Recognises notices and signs within the working sphere but has difficulty in interpreting the information into action. At the lowest level, recognises which language is being used. Should not be admitted as Navigation Officer Cadet/Engineer Officer Cadet without prior pre-sea Maritime English training.

© GAME November Seminar 1994, GAME Newsletter 29/1994, Warnemünde (p 11), C. Cole & P. Trenkner 2006

3 Conclusion and the task at hand

The Yardstick is an attempt to provide a standard that could be applied internationally. It was inspired by the "English Speaking Union Framework – performance scales for English language examinations" (1991) which proposed the Yardstick ladder as a tool for describing language performance in terms of quantity and quality where:

- quantity means the scale has a number of levels, or bands, corresponding to the rungs on a ladder, so that a learner's performance can be measured at a certain level on the scale, and
- quality refers to the accompanying descriptions which are intended to outline briefly and clearly the main features of the language performance to be expected at each of the levels.

Using the Yardstick as a starting point the authors encourage IMEC members to offer their opinions in general on aspects of quantity and quality with the aim of providing a Yardstick of English language competency for ship's officers that would be recognised internationally and could be implemented under one of the legal instruments of the IMO – here we believe that the members of IMLA-IMEC are those best qualified to contribute to the development of that Yardstick.

An accepted Yardstick needs logically to be accompanied by corresponding testing tools, especially to aid those assessors from the shipping industry who are normally not qualified Maritime English lecturers and require detailed guiding in this respect. This material would have to be designed to determine the communication performance of an examinee according to the descriptors corresponding to the different bands of the Yardstick so that consequently appropriate qualification measures can be undertaken; but this will warrant an extensive follow-up project.

The Influence of Language and Question Structure on Multiple-Choice Test Scores: An Exploratory Study

by
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Abstract

The authors surveyed international methods of examination for STCW 95 Certificates of Competency, particularly use of multiple-choice (MC) tests, and presented the research at IMLA 14. The survey showed variation in national applications of written and practical examination methods, and for MC generally more use in North America and Asia than in Europe. Survey responders commented on the lack of training provided to MC test constructors, and students' difficulties in fully comprehending English language used in the tests. While agreeing that properly constructed, standardized, validated and reliable MC tests are appropriate within a multi-dimensional examination structure, survey responders were concerned that factors other than subject knowledge may result in artificial test scores.

This paper comments on MC testing, drawing on studies in other subjects and other professions. The paper describes an exploratory study attempting to identify factors that may produce artificial test scores. In the study a MC test was compiled using questions taken from a database of typical marine MC questions, including those used in Maritime English education. The test was applied to 157 post-secondary students without marine technical knowledge, but with similar secondary education and of similar age to mariners in the early stages of their careers. The results show scores exceeding chance and other inconsistencies. The conclusion is that these inconsistencies reflect the influence of question structure, language and intuition.

MC testing and examination is used to assess both the knowledge and the competence necessary to safely operate onboard ship. The effectiveness of the assessment is therefore very important. The authors believe that the exploratory study described has not previously been attempted in maritime education, and further research is required.

1. Introduction

The effectiveness of examination methods and procedures is crucial, being the principle means to assess competency to operate onboard safely and with least environmental impact. In this paper 'MC testing' refers to both the formal process in STCW (1995) examinations and to course-work testing procedures within maritime education and training schools (METS). Examination and testing are equally important since they both lead to a professional qualification either directly or indirectly.

Drown et al. (2006) surveyed methods of examination used by maritime administrations and METS for STCW Certificates of Competency, with particular reference to use of multiple-choice questions (the Survey). The Survey shows considerable differences in examination

methods. There are no comparative studies as to whether the varying examination methods for STWC standards are of any consequence. To comply with the spirit of STCW respecting reciprocity between maritime administrations it is essential that examination processes are not only consistently of high standard from country to country, but are also of a standard that is common, or shown to be comparable. Muirhead (2006) comments on STCW processes that fail to ensure senior officers have demonstrated their competence. Muirhead suggests a proactive approach by government and industry to ensure standard assessments are put in place for valid and reliable competency measurement.

The paper comments on MC testing and factors influencing test scores, drawing on studies in other subjects and other professions pertinent to maritime education and training. The paper describes an Exploratory Study attempting to isolate factors producing artificial test scores.

2. MC Observations

In 1980, following STCW 78, Canada revised its maritime examination system, replacing some essay or calculation questions with MC. About the same time the United States introduced MC examinations for determining mariner competency, although the introduction was controversial (Stutman 1992). Discussion on the advantages and disadvantages of MC testing continues as evidenced by the voluminous literature, although the authors find very little specific to maritime education other than advice from the IMO (c1992) and the Nautical Institute (1992).

According to Case and Swanson (1998), while MC tests are an inexpensive and efficient way to check on factual knowledge, they are not useful for assessing critical or higher order thinking, nor are they useful for assessing abilities to write, apply knowledge and solve problems. Tumino (2006) supports this view, believing that MC testing reduces the complex conceptual processes to mechanical easy to follow operations, resulting in a student body that is not only increasingly incapable but also intolerant of being asked to think in complex ways. Contrarily, Cresswell (2006) maintains that well designed MC tests can assess both lower level thinking skills, such as recognition and recall, and higher level thinking skills, including the ability to apply, synthesize and integrate material. However, testing factual knowledge or cognitive skill does not guarantee mariner competence, which requires a combination of knowledge, skills, attitudes and communication ability.

There has been controversy regarding MC testing effectiveness since the method appeared in the 1930s. Students often perceive MC tests as 'unfair' (McCoubrie 2004), and refer to them as 'multiple-guessing'. Critics say it is possible to get a MC item correct without knowing much or doing any real thinking, and that the difficulty is in deciding the level of knowledge even for those scoring 100%. MC items expose students to a number of responses containing wrong answers (misinformation), and simply reading and repeating statements increases the probability that the statements will be judged true (Roediger and Marsh 2005). Banning MC tests is the way to improve the education system, according to Intintoli (2000), who believes the increasing use is driven by accountability translating into comparability, quantification and standardization. Intintoli links poor writing and thinking skills, and minimal emphasis on individual and group problem solving, to the passivity of MC testing, sending the message to students that language understanding, complexity of thought and articulate writing do not really matter.

In maritime education, Holder (2007) believes that with today's obsession with paperwork and computers there is a tendency to forget assessment is about testing mariners' abilities to do complex and demanding jobs. Lee's (2001) reminder is that no computer software, however sophisticated or easy to use, can compensate for poorly written MC items, since the strength of MC assessment lies in the quality of the test items and not in the mode of delivery.

Supporters of constructed-response items hold that essays are more reliable than MC in assessing knowledge and encouraging intellectual thinking, since answers are more difficult to recall than recognize (Case and Swanson 1998). However, essay questions, although quick to set compared to MC, take longer to mark, can be subjective in grading, and are not easy to analyze. However, it is possible to have a balance between 'closed' and 'open' assessment methods using MC test variants designed to improve reliability and effectiveness. These include confidence rating, alternative scoring procedures such as response-weighting and negative marking (Hutchinson 1993). Parsons (1992) proposes "thought-provoking" MC items which have a regular MC question stem, but give the student a number of alternatives that may all be correct. Students select the answer they think best then write why they think the answer is correct. Parsons' work was with social science students, but may have maritime education application. Essay components can also be added, as for example in the written section of the United States Scholastic Aptitude Test, and in medical examinations.

3. Factors Influencing MC Test Scores

3.1 General

There are many studies of MC testing in relation to persons in professions such as aviation, medicine and nursing; and for secondary and post-secondary students in courses for mathematics, economics, chemistry and language, to name a few. It seems reasonable to apply much of this knowledge to maritime students who, at the licensed level, have similarities in educational background.

3.2 Question Structure

Much has been written about MC question structure since Giles M. Ruch's rules for multiple-choice tests in the 1930s (Madaus 2001). Frey et al. (2005) analyze classroom assessment textbooks to identify a consensus list of item-writing rules addressing four validity concerns, namely: potentially confusing wording or ambiguous requirements; the problem of guessing; test-taking efficiency; and controlling for testwiseness. Frey finds forty item-writing rules, but with only four supported by research. Bush (2006) observes that writing good MC items is not easy especially when creating large databases, and Burton (2005) notes the importance of teacher training in MC construction.

The most difficult task in constructing MC items is creating distractors. These should be plausible for students whose mastery of the content is incomplete or who are making informed guesses (Tileston 2004), but they should not trick knowledgeable students into incorrect responses (Tindal 1990). Implausible distractors can disrupt the student's state of mind, since there is a tendency to pause and imagine how such an option can be made to fit the question (Wiersma and Jurs 1990).

A MC test must be validated to ensure it does what it is meant to do. The more a test is validated, the greater its reliability. Bush (2006) describes test reliability as the degree to which it repeatedly yields scores that truly reflect test-takers' knowledge and understanding. Test reliability increases with test length, assuming the tests are well written and administered and that there is time for all questions to be answered (Burton 2001).

3.3 Testwiseness

Frey et al. (2005) define testwiseness as "... the ability to recognize patterns in the answer options, identify unintentional clues, or use other skills unrelated to the level of knowledge or ability which is the intended target of the test". Dewey (2006) finds that MC testing encourages students to study examiner preferences and specimen questions at the expense of learning the subject matter.

Students can be taught testwise strategies to find the right answer to a MC question independent of subject knowledge, for example: looking for grammatical clues; mistakes in test construction; and key words. Nursing students look for clues from key words such as 'best' or 'first', matching a positive action in the stem to a similar action in the answer (Highfield and Wong 1992). MC tests may provide options such as "a and c', or "a but not b". Here each option is treated individually as a true-false item, and then merged according to the combinations listed in the distractors (Wiersma and Jurs 1990).

3.4 Language

Language and phrasing of the question stem is a very important factor in MC testing. The authors' Survey indicates that in some METS lack of comprehension in IMO English is a significant factor in MC assessment. The authors searched for studies comparing the performance of English first and second language students in examination for a common technical standard, such as STCW. An example is Stupans' (2006) study of Australian pharmacy students' knowledge recall as opposed to knowledge application, compared to international students in the same program. Based on MC exam results, Stupans finds that international students have problematic language proficiency, and learning styles and attitudes at odds with persons of an English-speaking background, and, for students stereotyped as passive rote learners, there is an incompatibility with knowledge application as opposed to knowledge recall.

When the phrasing is unclear students may read more into the MC question than the item-writer intended, particularly if the writer is inexperienced or untrained. There is the possibility of a word in the question stem stimulating an association with a word in one of the responses, which may or may not be the correct answer. Word and concept associations may be checked using lexical databases, although the authors find none specific to maritime education. Cassels (1984) emphasises the importance of question style, where excessive formality used to achieve precision can result in pompous and alien language. Cassels also finds that minor changes in parts of speech do not seem to influence performance, and framing the question in the active or passive voice has little effect.

3.5 Guessing and Chance

Chance may affect scores in MC tests in two ways: first, the examinee may be fortunate in the selection of questions; second, marks may be obtained by guessing. Guessing and chance,

as opposed to pure luck, have exercised educationalists for some time. Madaus (2001) describes Giles Ruch's work in 1930, and there are references to the effects of chance in the work of Kuder and Richardson (1937). Bereby-Meyer et al. (2002) suggest that exams be considered as situations where students face a series of decisions under uncertainty, with an increasing tendency to guess when a low grade is anticipated.

The chances of guessing correctly can be reduced by having more distractors, although Burton (2001) notes that increasing the choice from four to five does not improve test reliability. The difficulties are designing additional distractors, which penalize honest but wrong attempts when all distractors are plausible. Variations of MC tests may reduce or discourage guessing, or it may be better to accept just three distractors with simple marking and allow for this in the overall assessment plan (IMO c1991).

3.6 Gender

Gender differences in maritime MC testing must be considered significant, with increased female recruitment to a traditionally male-orientated marine industry. Several studies find females do worse on MC tests than on essay tests (Hellekant 1994). Walstead and Robson (1997) attribute lower MC test scores for females to social and cultural differences that create sex-role stereotypes. Ramos and Lambating (1996) conclude that MC tests promote values of objectivity, factual knowledge, and rapid performance (male socialization), and devalue subjectivity, reflection, introspection and feelings (female socialization). Teaching regimes may also be a factor, such as an unfriendly or chilly classroom atmosphere, biased educational materials and poor instructor role models.

The shift from pen-and-paper towards computer-based testing may affect assessment, especially regarding gender. MacCann (2006) concludes that the difference is small when restricted to short-answer and MC items, noting that males and females have different patterns of classroom interaction, with males likely to dominate computer use at school, and with females exhibiting higher levels of anxiety and lower levels of confidence in operating computers.

3.7 Intuition

Sarnacki (1979) defines intuition as "a subject's capacity to utilize the characteristics and formats of the test and/or the test-taking situation to receive a high score", with a definitional addendum that "testwiseness is logically independent of the examinee's knowledge of the subject matter for which the items supposedly measure". There are anecdotes about ability to answer MC questions correctly with little or any subject knowledge (Drown, personal correspondence), implying a connection between testwiseness and intuition, where intuition is a function of cognition.

3.8 Other Influences

Other factors described in the literature that may influence MC test scores are lefthandedness (Hook 2000); changing responses (Kruger et al. 2005 and Harvill 1997), and cheating (Cizek 2003). These are not considered significant in the Exploratory Study.

4. The Exploratory Study

4.1 Objective

The Exploratory Study (the Study) applied a MC test comprising typical marine questions to post-secondary students without marine technical knowledge, but with similar secondary education and of similar age to mariners in the early stages of their careers. The Study's objective was to identify extraneous factors that may produce artificial test scores.

4.2 Study Participants

One hundred and fifty-seven students from university, technical college and vocational college participated. The students were in nine programs unrelated to seafaring, including: nursing; early childhood education; industrial engineering; criminology; and hair styling. The participants were English first-language Newfoundlanders (Canadians) with secondary education graduation, and with MC testing familiarity from primary education onwards. The participants were in two groups, according to the level of secondary education graduation required for university/technical college entry and for vocational college entry.

4.3 Study Test

The Study test comprised ten knowledge-based (factual) MC questions selected from a database of over 500 'working' questions, provided by METS and marine administrations in eleven countries, on 26 navigation and engineering marine subjects ranging from basic chartwork to boiler systems to Maritime English. Five of the eleven countries had English as the first language; four countries had English as a second language; two countries were open registers. The test was 'benchmarked' by a control group of knowledgeable maritime students from Memorial University's Marine Institute.

4.4 Test Procedure

Participants were told that the subject matter was technically foreign, but in order to reduce blind guessing were asked to carefully read each response and mark which one occurred to them as correct. Informed guessing, in the sense of having partial subject knowledge, did not apply, since participants with any maritime experience were excluded. The possibility that participants may have acquired some shipboard information in a maritime province such as Newfoundland cannot be discounted, however this was not felt to be significant considering the test's technical nature. The participants were given ten minutes to answer the ten questions. The Study's objective was explained after the test.

4.5 Results

Table 1 summarizes the Study results. Greater numbers of participants are needed for statistical significance, and a more specific study instrument is required before attempting conclusions. However, some observations may be made. In Group 1 a majority of participants scored between 4 and 7 out of a possible 10. In Group 2 this was reversed, with the majority scoring between 0 and 3. The secondary education graduation entry requirements for Group 1 are more stringent than for Group 2. Within Group 2 the highest scorers were students in Criminology and Legal Studies, where the graduation entry requirements are more specific than for the other vocational students. The participants were disproportionately female (124)

as against male (33). Group 1 had no difference in male/female mean scores (both 4.0), while Group 2 mean scores favour male (3.4) over female (2.9).

The Study's objective is to identify extraneous factors that may produce artificial test scores, considering anecdotes about ability to answer MC questions correctly with little or no subject knowledge. Study results exceed a probability of 25% (2.5 mean) scores being obtained by serendipity (luck), raising the question as to what influences are at work. It may be that long exposure and experience with MC testing enables a correct response to be selected intuitively, a faculty proportional to educational level. However since virtually all of the Study's participants have MC experience since primary education no comparisons are made.

Table 1

GROUP 1
Nursing School, University and Technical College

		Ten Questions			
		Score 4-7		Score 0-3	
	Mean: Range 0-7	Participants	%	Participants	%
Participants (76 total)		47	**62**	29	**38**
Male (24 total)		14	**58**	10	**42**
Female (52 total)		33	**63**	19	**37**
Participants by Course					
1. Trades Technology	3.9	18		12	
2. Nursing	4.1	9		5	
3. Prim/Elem Educ	3.8	9		5	
4. Industrial Eng.Tech	4.2	11		7	
		47		29	
First Education MC Experience					
Primary		42	**55**	28	**37**
Secondary		0	**0**	1	**1**
Post-secondary		5	**7**	0	**0**

GROUP 2
Independent Career (Vocational) College

		Ten Questions			
		Score 4-7		Score 0-3	
	Mean: Range 0-7	Participants	%	Participants	%
Participants (81 total)		27	**33**	54	**67**
Male (9 total)		4	**44**	5	**56**
Female (72 total)		23	**32**	49	**68**
Participants by Course					
5. Office Admin Tech		5		17	
6. Hair Stylist		2		8	
7. Criminology		8		8	
8. Therapeutic Recreation		4		10	
9. Legal Studies		8		11	
All Courses	3.1	27		54	
First Education MC Experience					
Primary		31	**38**	45	**56**
Secondary		0	**0**	0	**0**
Post-secondary		1	**1**	4	**5**

5. Factors Influencing the Study Test Scores

5.1 General

It can be argued that any of the factors described in Section 3, except subject knowledge, may to a greater or lesser extent influence the Study results. However, according to the nature of the Study the following factors are either considered significant or not significant influences.

5.2 Significant and Not Significant Factors

Question Structure – Significant
The Study questions are those presently used in maritime education and examination. They are accepted without analysis; without details regarding the processes of construction and validation, and without information regarding reliability.

Testwiseness – Not Significant
Specimen questions and examiner preferences are not factors since the Study participants have no connection with, or knowledge of, the maritime industry. Test strategies are not factors since the participants are not prepared for the tests in the same way as other professionals are prepared for their particular examinations.

Language – Significant
Language comprehension is a factor, particularly since the Study shows higher scores associated with a higher level of secondary education graduation.

Chance – Not Significant
Chance is not a factor in the sense that the 25% chance of selecting the right answer from the four possible responses is recognised.

Guessing – Not Significant
Informed guessing is not a factor, since participants are 'uninformed' regarding maritime matters, with test instructions to limit blind guessing, that is to carefully read each possible response before selecting the one that seems correct, rather than simply choosing A, B, C, or D at random.

Gender – Not Significant
There is no significant difference in male/female mean scores overall, even though the Study participants are 20% male and 80% female.

Intuition – Significant
Intuition, as described in Section 3.7, is a factor considering the anecdotal evidence.

5.3 Summary

Subject knowledge is definitely not a factor in the Study. The influence of the other factors is debatable, although in the context of the Study the most significant are considered to be question structure, language and intuition. A more precise study instrument is needed to closely identify the influence and significance of these factors.

6. Conclusion and Further Research

It is important to show that MC testing used in maritime education and examination is reliable. That MC testing may reflect influences other than subject knowledge is a concern in any learning situation, more so in maritime education where multiple-choice is part of testing and examination leading to professional qualification.

The conclusion is that the Exploratory Study provides a rationale, and demonstrates the feasibility and a methodology, for similar and more extensive research to identify factors influencing maritime MC test scores, particularly the influence of language, question structure and intuition.

The research would focus on the identification of factors relevant to maritime education such as described in Section 3, and support or refute the significances described in Section 5. The objective would be to closely identify and better understand maritime MC testing, particularly since testing leads to professional qualification.

The research would involve a number of participants sufficient for statistical significance, and gather information about educational and other backgrounds, including previous MC test experience. The participants would again be non-mariners, since the exclusion of subject knowledge appears to highlight the other factors influencing MC test scores. The MC test used in the research would contain validated and reliable cognitive as well as knowledge-based questions.

By comparing educational regimes, that is those regimes using MC testing more than others, the research could also test a hypothesis that long exposure and experience with MC testing enables a correct response to be selected intuitively, and that this faculty is proportional to educational level.

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Compilation and Promotion of an English-Chinese Maritime Dictionary

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Abstract

The first edition of The English-Chinese Maritime Dictionary was published in 2002, and shortly after it won the "Science and Technology Advancement Prize" awarded by the China Institute of Navigation. This year the second edition, which has taken the compilers five years of dedicated work, was published. Compared with the first edition, this new version is much improved in style, organization, and functionality. In particular, the unique style and arrangement of this dictionary have received the unanimous acclaim of Chinese users.

In this paper, we will briefly introduce the core features of this maritime dictionary. Next, we will describe how we compiled it to meet the needs of the EFL dictionary-user in China, focusing particularly on strategies and methods adopted. The following stages of compilation will be discussed separately: collecting words, generating additional fields, defining words, and editing each entry for publication. And then, because the definitions of many words were still inadequate and some examples needed to be added, the further work we have done in these years will also be described.

The paper aims at providing an efficient way to compile a bilingual maritime dictionary. We trust that the methods used can be widely accepted and used as a reference for other EFL countries.

***Key words**: English-Chinese Maritime Dictionary, compilation, promotion, strategies and methods*

1. Introduction

Building on large amounts of research, we set out to organize a group to compile an English-Chinese Maritime Dictionary in August 1997. At the same time, we decided on the persons to be involved in the project, the general requirements of compilation and main style as well as the sequence of compilation.

After five years of sustained cooperative efforts on the part of the compilers, we completed the dictionary in February, 2002. As a result of our conscientious application to research and development, this dictionary was rewarded with the distinction, of Shanghai Tenth Five-year Plan Key Book Publication Project. It is the first dual-function dictionary that integrates a general bilingual dictionary with the technical terms of navigation, marine engineering and related subjects. In particular, the unique style and arrangement of this dictionary have received unanimous acclaim from Chinese users.

Adapting to changing times and scientific advances, the compilation group continually amended and revised the dictionary during its five years of development. An addendum of up-to-date additions will be incorporated in the second edition of the English-Chinese Maritime Dictionary to be published in November, 2007.

2. Why did we compile the English-Chinese Maritime Dictionary?

Given their vastly different cultural backgrounds, the English and Chinese languages have tremendous differences in word-formation, etymologies, and so on. An understanding of English vocabulary and usage depends on the examples a dictionary provides. Although, in China, there have been English-Chinese maritime dictionaries, English-Chinese marine engineering dictionaries and English-Chinese marine electric dictionaries, they are almost always based on lexical collocations without complete

paraphrases and examples, much less with maritime features. These dictionaries are limited in application and unable to satisfy the readers' needs. Therefore, it was necessary for us to make an in-depth study and compile a reference book for maritime English to meet the demands of users--hence the English-Chinese Maritime Dictionary.

1.1 Urgent Requirements of International Conventions

English is the lingua franca of international seafarers and other personnel engaging in international shipping. In particular, from many IMO conventions we find the standards of English competence for persons involved in navigation and management onboard from a non-English speaking country are becoming higher and higher.

1.2 Urgent Requirements Arising from Rapid Development of Navigation Technology and Relevant Techniques

In recent years, navigation technology, marine engineering and related techniques have developed rapidly, and a great number of new technologies, new materials, new rules and new criteria have sprung up. Therefore, a great number of new English words, abbreviations, technical terms and related English expressions are coming into general use.

1.3 Urgent Need for Chinese Seafarers and Shipping Personnel to Improve their English

Owing to the development of the international shipping industry and multinational crews, the international seafarers' labor market shifted eastward Competence in the English language has become one of the most important competitive factors in the labor market. As a great seafaring nation, China should continuously improve the English competence of its seamen in reading, listening, *speaking and writing. Only in this way can we remain invincible in the fiercely* competitive international shipping market.

In that quest for language competence, the English-Chinese Maritime Dictionary will prove a valuable tool for ships' crews and shipping personnel in general.

3. How did we compile the dictionary?

The compilation of the dictionary was a great systematic undertaking. We wanted to meet the needs of all seafarers, no matter whether they were engaged in navigation, marine engineering, or electricity. To accomplish this innovative objective, we were obliged not only to gather many experts together, but also to make a rational division of work.

The editor in chief and sub-editors were teachers conducting research into maritime English and engineering English; there were lecturers on examinations for certificate of competence; and nationally- famous professors doing English linguistic research. Some renown professors of maritime English were also invited to join the group.

During the research and compilation, many graduate students also contributed their time, as did the 100 people listed in the dictionary.

A reasonable division of work according to the characteristics of this dictionary had been made in readiness for the commencement of compiling. On the basis of alphabet division, compilers from the Navigation, Marine Engineering and English departments made amendments and revisions; meanwhile, experts in areas like maneuvering, anti-collision, meteorology and cargo-handling prepared entries from their own fields. Finally, veteran English teachers examined the writing for clarity, precision and concision.

4. What principle and method do we adopt?

4.1 Research Objective

This dictionary is the first large dual-function dictionary to integrate a general bilingual dictionary with technical terms from navigation and marine engineering. The content exhibits the characteristics of our times as well as the navigation features and innovation (especially in style) of all related technical fields such as navigation, marine engineering and transportation.

(a) Characteristics of the Times

Over the past ten years, science and technology have changed rapidly; cross-disciplinary connections are more and more and common. Since the ship is a technology-intensive space, navigation has become a field crowded with all kinds of new technologies.

Therefore, we must in the dictionary draw attention to new technologies, new equipment and new rules of navigation and marine engineering that became operational in last ten years. In that way we can illuminate the characteristics of the times. For example, new technologies like GMDSS, GPS, VTS, ECDIS and AIS were added to our dictionary. Moreover, some amendments and an appendix of international conventions were also added to include SOLAS, MARPOL, STCW, ISPS, etc.

(b) Navigation Features

This dictionary is arranged not only to interpret general English words, but also to explain technical terms of navigation and marine engineering. Therefore, the seafarers and shipping personnel can pursue their interests in learning English through using this dictionary. An emphasis on navigation is one of the important principles we followed while compiling the dictionary. Users will find it different in style from others dictionaries.

(c) Bold Innovation

After careful study and prolonged discussion, and by changing the traditional style of English-Chinese Maritime dictionary, we broke through with our new ideas.

3.2 Research Methods and Technical Path

To solve those questions that arise with the work of compilation, we insisted on the following research methods and technical path:

(a) The style is the soul of the dictionary. From the editing of the first draft of the dictionary, we continually followed the pre-determined style to avoid unnecessary reworking. Therefore, we were able to devote more time and energy to the quality of the compilation.

(b) Paraphrase is the key to the quality of dictionary. The paraphrases in this dictionary must be accurate, definite and offer a simple Chinese

translation. Moreover, we refer to some authoritative general English-Chinese dictionaries, English technical magazines and books from both home and abroad. Among them are, for example, the IMO Model Course, Maritime English, English for Maritime Engineering.

(c) Well-defined duty and rational division of work assure efficient dictionary compilation. The compilers were divided into several groups according to their different fields of expertise. The editor in chief and the sub-editors controlled the process of compilation to guarantee the quality of the dictionary.

(d) Selection of the paraphrases and examples for the entry.

- The selection principle: We prefer commonly-used words and words with good capacity for collocation. These were selected mainly from advanced English language materials such as New Concept English□ English for Today□and Advanced English.
- Basic division principle of navigation, marine engineering and related subjects was as follows:

Navigation

Main subject	**Related subject**
Celestial navigation:	algebra, spherical triangle, cosmography, aviation, space technology
Geo-navigation	geography, geology, hydrology, oceanography
Ship handling	theoretical naval architecture □ hydrodynamics
Ship equipment and repair	Naval architecture, ship building technology, marine engineering
Cargo handling	Cargo theory, chemistry, physics
Ship instruments	Acoustics, computer
Radio navigation	Radio technology
Marine meteorology	Weather routing, facsimile technology
Ocean shipping operation	International shipping management, shipping economics, foreign trade correspondence and telecommunication, financial, science of public relation, custom
Maritime law	Insurance operation, economic law, maritime law
Ship anti-collision	Traffic engineering, fishery marine

	environment, psychology
Maritime safety	Management, maritime management
Seamanship	Seafarers techniques, marine medicine

Engineering

Main Subject	**Related subject**
Marine power plant	Engineering mechanics, material science hydrodynamics, marine engineering, mechanism design foundation
Marine auxiliary machine	Computer technology, systems engineering
Marine automation	Electronic technology
Marine eclectic equipment and system	Mechanicals of materials
Engineer repair technology	Mechanicals of materials
Marine refrigeration	Thermodynamics
Ocean anti-pollution	Ship safety management
Marine engineer management	Metal technology, marine environment, marine hull insurance

- Some examples of general words are selected from the examinations for the Certificate of Competence in China in the past ten years. Additionally, some relevant examples in the Lloyd's List in the last ten years were added to assist professional users.

5. Fruitful Results of Hardwork

In 2002, the English-Chinese maritime dictionary of more than 8,000,000 words was published. During the long process of compilation, about 100 researchers including SMU professors, experts in related subjects and scholars all have been participating. To guarantee the quality of the dictionary, senior professors in the Foreign Language Department critically examined and amended each draft. The guidance of experts and scholars ensured the value of the preliminary research as well as the final form of this dictionary.

In October, 2004, the first edition of the English-Chinese Maritime Dictionary won the honor of the "Science and Technology Advancement Prize" awarded by the China Institute of Navigation. Moreover, it was favorably reviewed in the newspapers.

6. Promotion of the Dictionary

After the publication of the first edition, we still found aspects of the dictionary

unsatisfactory: some differences in style, overlarge, too heavy, and not easy to carry. In addition, some contents need to be updated with the rapid development of navigation and engineering.

Therefore, in the subsequent five years, the compilation team concentrated on amending and revising the contents of the first edition. New technologies as well as new international conventions and rules were added to the second edition.

The second edition of the dictionary adds pictures to stimulate the users' interests. It will be published in Novermber, 2007.

The dictionary covers a large number of subjects and fields of knowledge. Not surprisingly, then, we discovered unsatisfactory details. The continued development of navigation and engineering technology as well as the dynamic nature of maritime English present us with a challenge. But we are determined we will make the further additions to the second edition of the dictionary in order to make it perfect.

7. Conclusion

(a) This dictionary incorporates the new technology, equipment, and rules as well as the essence of hundreds of dictionaries, foreign magazines and international conventions. It is a dual-function dictionary, which integrates general English-Chinese dictionary with the vocabularies and terms from navigation, engineering and related subjects.

(b) This dictionary has a large vocabulary of 8,200,000 words and more than 10,000 entries, among which 4,700,000 belong to a specialized vocabulary and 3,500,000 are from a general vocabulary. The entries cover all the fields of navigation, engineering and related subjects. The paraphrases and examples are selected from the maritime publications, international conventions, and authoritative English publications.

(c) With a description of the compilation process of the English-Chinese Maritime Dictionary, we hope to provide a useful methodology for anyone seeking to create a dictionary. This could be used a model for other EFL countries.

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Biography

Mr. Yongxing Jin was studying nautical technology in Shanghai Maritime University from 1978 to 1982. He had been on board ship for 3 years as an ocean-going vessel's Chief Officer. From 1995 to 1997, he was majoring shipping management and got master degree. He is now researching on modern seamanship and ship's safety management. Mr. Jin is a professor and vice president of Shanghai Maritime University.

Creating Maritime Dictionaries in Class

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Abstract

Part of the maritime English language course at our Faculty of Maritime Studies and Transport is dedicated to creating maritime dictionary projects using the TshwaneLex professional lexicography software. Students may work on a bilingual or monolingual dictionary. Each student is assigned a definite number of lemmas to work on, which are selected from various maritime corpora. In order to find senses, definitions, combinations, translation equivalents, examples, etc., students use available on-line dictionaries. The final product counts as a seminar work and constitutes a part of their final grade. The workshop will present how the dictionary projects are carried out.

Key words: dictionary, lemmas, senses, definitions, combinations, corpora

Introduction

Ever since I started to teach maritime English I have been fascinated with the semantics of its terminology. The fascination developed as I came across inexplicable examples of semantic changes, obscure etymology, different individual conceptualisations of semantic fields, vague understandings, etc. All this aroused curiosity and to satisfy it I conducted in-depth research into the subject field. However, it never resulted in a complex bilingual dictionary given my fear of team work and the extensive and complicated support needed to carry out such a demanding project. Now, having managed to obtain professional lexicography software (TshwaneLex), I was finally encouraged to start the project. Yet, I soon realised that still I alone could not cope with the huge project. Then, luckily, it occurred to me that my students could make up the team. And this I found turned out to be an excellent idea.

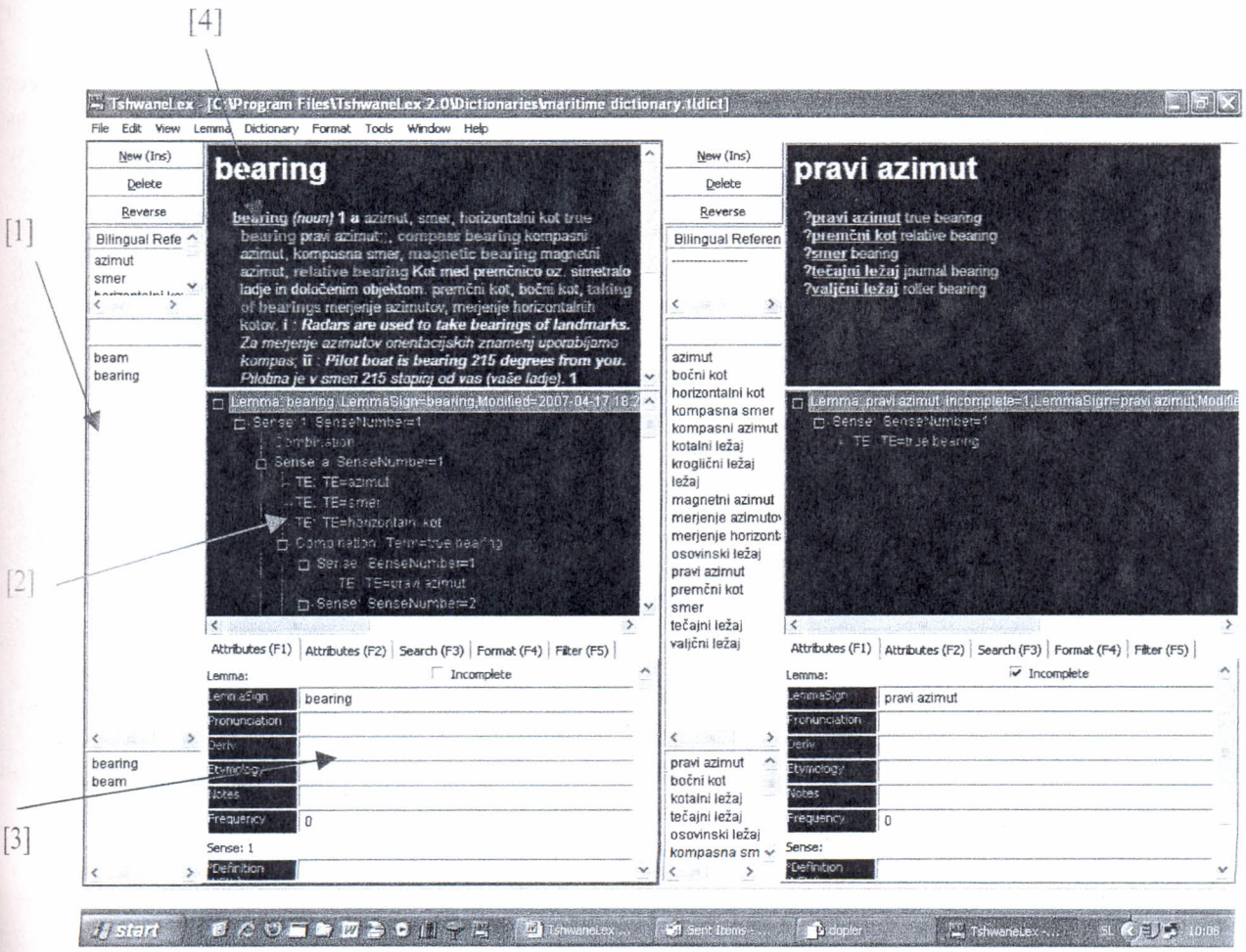
Project planning

The bilingual English–Slovene and Slovene–English dictionary project is supposed to be completed with the help of 3 generations of students. It started in February 2007 and is expected to be finished by June 2009. Since I have maritime English courses only with the first and the second year students, I decided to involve the second year students in the project. We have a computer lab with 22 computers available each year for 30 hours. Each student is given 30 lemmas to work on. These are selected from various maritime corpora; e.g., maritime English

textbooks, particularly IMLP, and also other maritime books and magazines. Some of the lemmas selected require more extensive analysis than others, of course, but on average all students have more or less the same quantity of work to do. They are further supplied with various existing monolingual and bilingual dictionaries to be able to figure out senses, definitions, combinations (collocations), translation equivalents, examples, etc. In addition, they are given access to available on-line dictionaries and encyclopaedias; e.g., a comprehensive Oxford English Dictionary and Wikipedia, which they like very much indeed. Their individual products count as a seminar work and constitute a part of their final grade. At the end of the three-year project I will have to gather all students' products, edit and revise them as necessary.

Project Execution

Students are given instruction, how to use the TshwaneLex lexicography software and their work is monitored by the teacher from the central computer. To start a new dictionary project they select the "File/New dictionary" menu option. A dialog will appear prompting for basic information about the dictionary project, such as the name of the dictionary and optional description. Under "Dictionary type" they select the bilingual (i.e. consisting of two "languages/sides") dictionary database. Once they are satisfied with the basic properties for their dictionary, they click "OK". The TshwaneLex editing environment will appear, allowing them to begin compiling their dictionary. For a bilingual dictionary, the interface is split down the centre and editing interfaces for each side of the dictionary are shown side by side.



The four main editing areas, as indicated by the coloured arrows above, are the "Lemma list" [1], the "Tree View" [2], the "Attributes and Tools sub-windows" [3], and the "Preview Area" [4]. The editing interface of the other side (target language side) has the same (mirror-like areas). Bach will now be discussed briefly.

The Lemma list [1] is a scrollable list of all lemmas in the dictionary. New lemmas can simply be added by clicking on the "New (Ins)" button, or by pressing the "Ins" key on the keyboard. A dialog is presented, in which one can type the new lemma sign.

The Tree View [2] dictionary article has a hierarchical structure, e.g. a lemma contains senses which may further contain subsenses. The Tree View is used to view or modify the hierarchical structure of an article, i.e. to add senses, subsenses, usage examples, collocations, cross-references, etc. Right-clicking on any element in the Tree View displays a menu with a list of editing options available for that element, such as adding child elements.

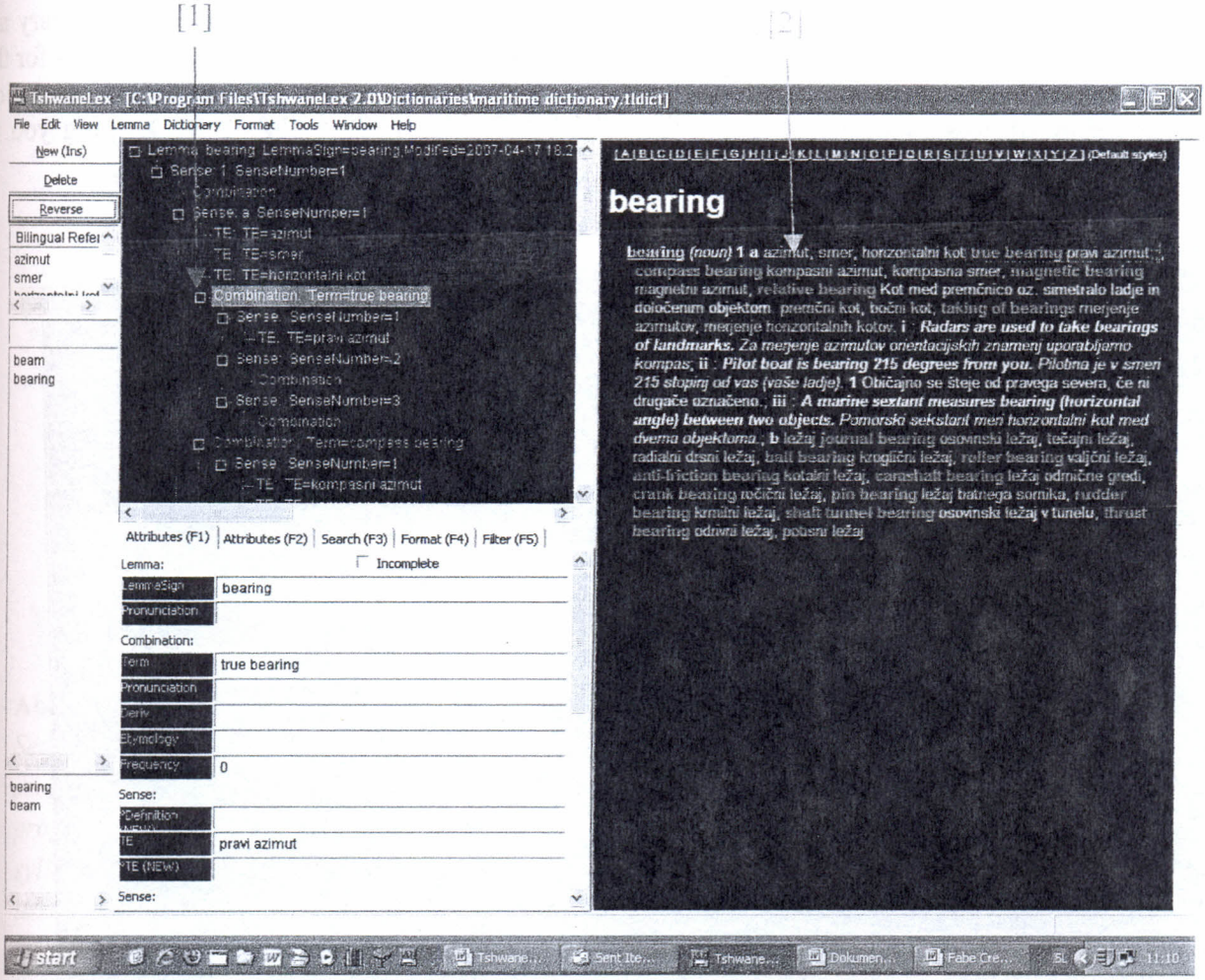
The Attributes and Tools sub-windows [3] consists of five sub-windows, which can be accessed quickly using the shortcut keys "F1" to "F5". The first two sub-windows are used to edit the so-called attributes of the currently selected element in the Tree View, i.e. the actual values that are associated with the element. For example, the "F2" indicates that the lemma is noun, verb or adjective.

The Preview Area [4] window displays an approximate representation of how the currently selected article will appear in print (a so-called WYSIWYG ("what you see is what you get") view), as well as displaying the articles immediately following the currently selected article. Note that the Preview Area updates immediately as changes are made in the Tree View or Attributes (F1 and F2) and Format (F4) sub-windows.

One very useful feature of the Preview Area is the displaying of *related cross-references* of the currently selected lemma – all lemmas that are cross-referenced *by* the current lemma, as well as all those that have cross-references *to* the current lemma, are displayed in the Preview Area.

For a bilingual dictionary, the four main editing areas are shown for *each language*, side by side. Each of these sides (containing the four main areas) is known as a "language editing window", and the *currently active* language editing window is highlighted with a red border. The currently active language editing window may be expanded to occupy the entire TshwaneLex work area by selecting the "Window/Expanded view" (Ctrl+W) menu option. This is useful for increasing the size of the work area when working mostly on one side of the dictionary.

See below an example of the Tree View area [1] and the expanded Preview work area [2] of the lemma *bearing*.

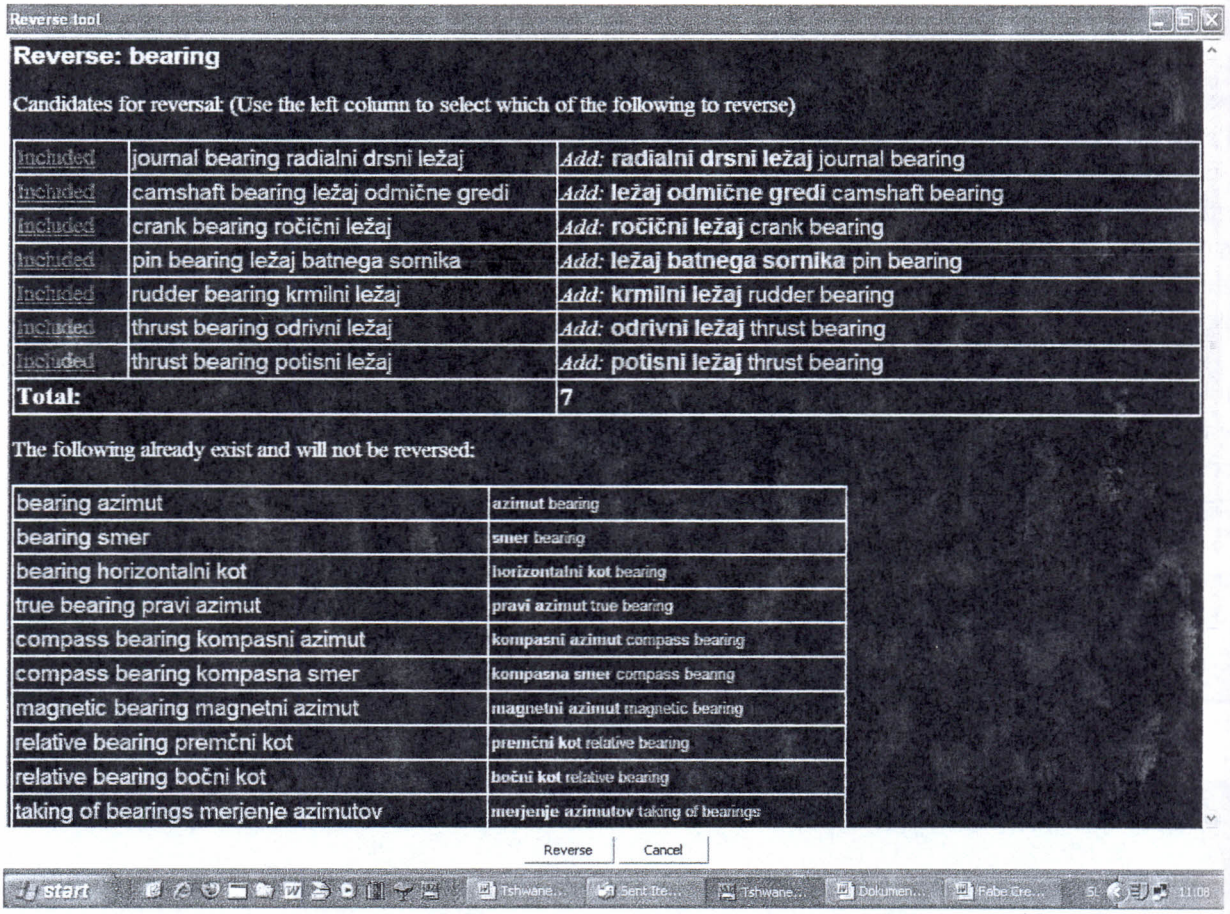


bearing *(noun)* **1 a** azimut, smer, horizontalni kot **true bearing** pravi azimut;, **compass bearing** kompasni azimut, kompasna smer, **magnetic bearing** magnetni azimut, **relative bearing** Kot med premčnico oz. simetralo ladje in določenim objektom. premčni kot, bočni kot, **taking of bearings** merjenje azimutov, merjenje horizontalnih kotov. **i** : ***Radars are used to take bearings of landmarks.*** *Za merjenje azimutov orientacijskih znamenj uporabljamo kompas;* **ii** : ***Pilot boat is bearing 215 degrees from you.*** *Pilotina je v smeri 215 stopinj od vas (vaše ladje).* **1** Običajno se šteje od pravega severa, če ni drugače označeno.; **iii** : ***A marine sextant measures bearing (horizontal angle) between two objects.*** *Pomorski sekstant meri horizontalni kot med dvema objektoma.*; **b** ležaj **journal bearing** osovinski ležaj, tečajni ležaj, radialni drsni ležaj, **ball bearing** krogljični ležaj, **roller bearing** valjčni ležaj, **anti-friction bearing** kotalni ležaj, **camshaft bearing** ležaj odmične gredi, **crank bearing** ročični ležaj, **pin bearing** ležaj batnega sornika, **rudder bearing** krmilni ležaj, **shaft tunnel bearing** osovinski ležaj v tunelu, **thrust bearing** odrivni ležaj, potisni ležaj

The TshwaneLex also provides functions for automated reversal of articles. These functions are intended primarily as an aid to speeding up the compilation of the reverse side of the dictionary. You may reverse the currently selected lemma or perform a *full* language reversal.

The selected new reversed lemmas will be generated and added to the other side of the dictionary. The reversal may also be automatic. The related lemmas on the other side of the dictionary are immediately shown whenever you work on a lemma. That is, the language editing window for the *other* side automatically displays all articles whose lemma signs appear as a translation equivalent in the currently selected article. This allows for quick comparison, helping you to ensure balanced treatment of related lemmas on both sides of the dictionary.

See below an example of the reversal of the lemma *bearing*.



Conclusion

Let me conclude with the experience gained during the last six months working on the dictionary project together with my students. Involving students in the project was really an excellent idea, as I indicated already in the introduction to the paper. Students are extremely motivated to work on maritime terminology and on finding Slovene equivalents. For the first time in my teaching career I had to force them to leave the computer lab at the end of the classes. And, besides, what represented a tedious and exhausting task for me (handling the computer software), has turned out to be fun for them. I learned that they mastered the software easily, soon outmatching me. On the other hand, they needed more help while they were making up their own definitions of terms or while putting terms in context by writing examples in sentences. They needed assistance particularly while translating whole sentences into Slovene. And, finally, without this experience they would never have been aware of the available sources on-line to help them with understanding maritime terminology.

SEAMASTER – AN INNOVATION TO IMPROVE MARITIME ENGLISH TRAINING IN CHINA

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Abstract:

Seamaster English is designed to address perceived common deficiencies in Chinese seafarers' English communication skills. It is the first branded Maritime English training program in China and improves beyond measure traditional ME system in all aspects: syllabus, course plan, course material, teaching methodology, resource configuration and assessment.

Key words:

Seamaster
Maritime English
Chinese seafarers
English communication skills

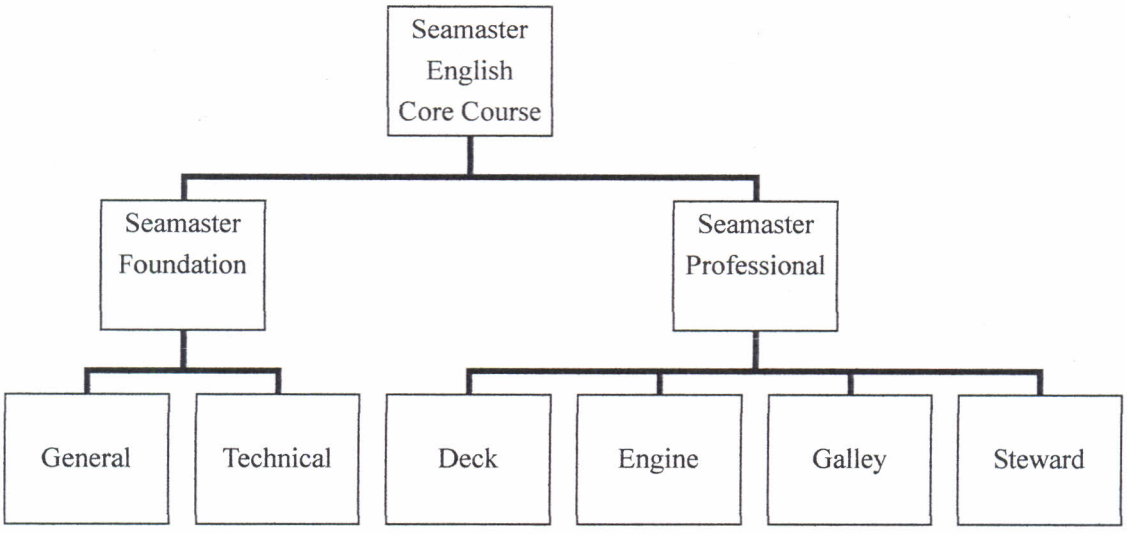
Introduction:

There are 12 courses under the brand of Seamaster. The most popular course is the Seamaster English Core Course (SECC). Using this as an example, details of Seamaster will be presented in the following sections:

1. Open and flexible structure
2. Course material
3. Classroom activities
4. Composition of teaching personnel
5. Technical back up
6. Teaching facilities
7. Assessment

1. Open and flexible structure

The following chart is the structure of SECC



There are 9 topics in the General section and 10 in the Technical. After a class completes the Foundation part it is split up into groups: Deck, Engine, Galley and Steward. There are 16 topics for Professional-Deck, 15 for Professional-Engine and 6 each for Galley and Steward respectively. A typical SECC class is one month with 24 working days. However it can be prolonged or shortened as per clients' requirements.

2. Course material

Tailored material is used to meet specific requirement of different ship operators. For example, Ship Familiarization is one topic of Technical part. We use different materials for different companies. In Cargo Familiarization different contents are used for different companies, such as Gas Familiarization, Cargo Familiarization for Chemical Tankers, Container Type Index, Container Secured Devices, Lashing Gears, etc.

3. Classroom activities

Read as a group

It is the most efficient way to let trainees open their months, especially those who are middle aged with long shipboard working history. It might be very difficult for them to read in class individually but most of them enjoy reading aloud as a group.

Team work

Trainees work in teams to practise conversational English, to correct pronunciation, to discuss with each other, to prepare role play or seminar and

even to discuss technical problems.

Pair work

Two trainees work together, most in reading dialogues. One is asking and the other is answering. This is the most frequently used method in Seamaster classroom.

Seminar

This method is often used for Professional section. The purpose is to help trainees in improving their ability to discuss technical problems. Deck trainees may talk about cargo operation or paint system while the Engine group may discuss the engine room configuration and the function of lubricating system for the main engine.

On site training

Some topics are carried out on board WUT training vessel, such as Ship Familiarization, Mooring Operation and Painting System. The topics can be carried out in the Engine Room Lab or the Simulator are Engine Room Introduction, Personal Safety in the Engine Room and Engine Failure and Trouble Shooting.

Student lecturing

We choose topics with which trainees are familiar technically but difficult in describing in English, such as Garbage Disposal Plan, Mechanism of Diesel Engine or the Lubrication of Marine Diesel Engine.

Presentation

It can provide students with opportunities to improve narrative skills. The topics we give to the trainees are closely related to their shipboard life and operations, such as My Last Voyage, The Ship I Like Best, Fire Fighting Drill, etc.

Role play

This is used as comprehensive exercise. It is the most exciting classroom activity in promoting interaction using English. The topics we used include: Pilot in the Bridge, From Shanghai to New York, Attending the Company's Conference, The First Day I Joined a Ship, etc.

These methods should be used in each class and thus make the classroom interactive and 'noisy'. There is a Rule for Seamaster classroom work which is **SILENCE IS NOT PERMITTED.**

4. Composition of teaching personnel:

Native English speaking teachers

We recruit well-educated native English speakers and train them to be Seamaster trainers. Their knowledge of English language can guarantee Seamaster course modules are linguistically correct. We insist that Seamaster English is language training no matter how technical the contents might be. Therefore we should provide good language training with the purpose of improving our trainees' English communication skills.

English Speakers drawn from various South Asian countries

It is required by our clients who employ seafarers from South Asian countries in addition to Chinese seafarers. Therefore it is necessary to let our trainees get used to the accents of English speakers in this area.

Good English speakers who have Putonghua as their mother tongue.

Candidates who apply for a teaching position in Seamaster team should speak good English. In addition to their spoken fluency our Chinese teachers all have a Maritime background, including Maritime Technology, Maritime Management, Automation and Telecommunications. The Maritime background is helpful for our trainers to understand technical aspects of Seamaster modules accurately.

5. Technical back up:

Being a professional seafarer training centre, WSTC provides strong technical and professional back up to its Seamaster English team. Shipmasters and chief engineers are engaged by WSTC to act as consultants to the Seamaster English team. Because of the Skaugen background WSTC provides excellent STCW tanker courses such as LPG Tanker Familiarization, LPG Tanker Safe Operation, Chemical Tanker Familiarization, etc. In addition to those courses of the minimum requirements WSTC also provides higher level tailored courses including Chemical II, Gas II and LPG Tanker Cargo Engineering. The development and delivery of those advanced courses reflects the state of the art of dangerous cargo handling and ship maintenance technology. Seamaster English programs benefit from this. In 2006 a new Seamaster course OCIMF Chemical Tanker Inspection was launched. It is the resulted of strong technical back up from the expertise we have gained.

6. Teaching facilities:

Valuable installations in WUT are available to us to add value to our Seamaster English On Site Training. They include the following:

- **Training Vessel**
  Some topics can be carried out on board the training vessel, for instance, Ship Familiarization
- **Engine Room Laboratory**
  The topics can be carried out in the Engine Room Lab include: Engine Room Introduction, ER Equipment and Tools, etc
- **Full Mission Bridge Simulator**
  The topics include: Mooring Operation, Helm Order, Lookout, etc.
- **Engine Room Simulator**
  Engine Failure and Trouble Shooting
- **Container Laboratory**
  Secured Devices and Lashing Gears

7. Assessment:

We assess trainees before and after training to gauge their progress. We assess them in the following 3 aspects:

- Spoken fluency:
- Spoken accuracy
- Listening comprehension

We set 5 grades for each item: from E to A. E is the lowest and A is the highest. We have clear criteria for grading. Our trainers were trained to do the assessment. In addition to the grades we provide a detailed assessment report to our clients.

8. Conclusion:

Seamaster English was created because of demands of seafarers' training market. It grew up under the interaction between the training center and our clients. We keep up the quality of Seamaster English training by continuous improvement. The course modules are frequently updated. The Seamaster team members work together every day to exchange information on the course progress and students' response. If one method is not effective to a specific class we will try another. New courses were developed to meet the increasing requirements of shipping market. It is by constant communication with our clients and the market that we keeps the product full of vitality.

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Member of Maritime English Teaching Guidance Committee, the Ministry of Communications, P. R. China in 1998 - 2003
Over 20 academic papers published including:
"New Methods in Maritime English Teaching"
□Higher Learning in the Ministry of Communications□Volume 39 (The 3rd issue, 1996) ISNN1004-6585/CN42-1312/G4, Sept. 1996
Chinese translation of the
□Introduction to Canadian Politics and Government□
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Peking University Press, June 2004

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PHONETICS IN THE MARITIME ENGLISH CLASSROOM. *THINK* OR *SINK*.

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Abstract

Phonetics is the word that gives any learner of English the shivers. Pronunciation, the unfinished business for most speakers of English as a second language. When it comes to Maritime English, things do not get any easier. To every problem present in the foreign language classroom, we must add those particular of this discipline, such as lack of teaching time, huge range of subject matter, diversity of instructors' profiles, students' levels, materials, etc.

This paper aims at presenting some clues as to how to introduce and use phonetics in the Maritime English classroom by, first, raising awareness of differences and similarities between the pronunciation of English and learner's L1 (contrastive phonetics) and, second, introducing the International Phonetic Alphabet (IPA) as a tool for classroom and autonomous use.

Key words: Pronunciation instruction, English phonetics, Maritime English, English for Specific Purposes

1 Introduction

The aim of this paper is to present a series of tasks that help introduce the teaching of English phonology and phonetics, i.e., English pronunciation, in the Maritime English classroom. These tasks are geared towards the needs of a specific group of learners (adult native speakers of Spanish with some previous knowledge of English) but I believe and hope some of the issues they address can be useful to learners of other nationalities.

I will start by talking about what led me to choose the learning objectives for these introductory lessons to English phonetics. Next, I will present and discuss the tasks selected, which deal with, first, phonemic transcription, second, word stress placement and third, stress in connected speech. Finally, I will mention some of the outcomes resulting from this proposal and practice.

2 Teaching context

The tasks aim at introducing English pronunciation in about 10 hours' instruction. The target audience are, on the one hand, 1st year students taking their marine engineering and nautical degrees at the Escuela Superior de la Marina Civil (Universidad de Oviedo). These 10 hours

are distributed along the academic year, in their respective subjects, rather than taught as one solid unit at a specific time in the year.

On the other hand I also use these activities in a ten-hour phonetic module as part of an introductory course to Standard Maritime English, financed by the European Social Fund within the Perseus Program, and imparted at the Centro de Seguridad Marítima Integral Jovellanos (Maritime Safety Training Centre Jovellanos). In both cases the tasks are virtually the same but, of course, each context and students / trainees occasionally demand some adjustments.

3 Exploring differences between systems

Due to the introductory nature of the lessons, the time allotted to them, the vastness of the field of English phonetics / pronunciation and the student's profile, it was crucial to decide on what aspects of English phonetics should be picked out. I usually start by asking my students what their perceptions about English pronunciation are, i.e., "what do you feel when you hear a native speaker of English talk?" Invariably, answers revolve around, first and most, the idea of speed / pace: "they talk too fast, I can't follow them"; "it sounds as if they swallowed half their words". Second, they say some things about the nature of some sounds / segments: "they seem to be munching some words"; "they sound as if they were chewing gum" (especially for American English, which is something of a commonplace, too). And finally, when we broaden the scope of our discussion, they complain about the little help English spelling provides to English pronunciation.

These comments, in essence, reflect the clash of various phonological aspects of two rather different languages, despite their apparent similarities. To begin with, Spanish and English have very different accentual systems: stressed-timed (English)[1] vs. syllable-timed (Spanish). Next, there are well known segmental differences, such as the number of single vowel sounds: 5 monophthongs (Spanish) vs. 12 monophthongs -five long, seven short- (English)[2]; lack of plosion and aspiration in Spanish plosives, which is conveyed onto the articulation of English plosives -to name just a few problems. Finally, Spanish and English show very different spelling systems: near phonetic (Spanish) vs. "[of] notoriously confusing nature" (English), Roach (1991: 3).

These, together with some other difficulties such as, for instance, the problematic complex consonant clusters of English (the 'munching' above) led me to the setting of the following two aims:

-explain the differences between the two systems

-focus on the problems stemming from those differences that impair intelligibility

Looking back at the students' perceptions about English pronunciation, not many of them suggest any concern about the nature of segments -sounds-, but most of their comments point to suprasegmental features such as stress and rhythm. In view of this I decided to pay attention to those elements of English phonology that could be easily explained and could account for the frenetic pace of English. Therefore I cut the list down to talking about the dynamicity of English stress –as compared to Spanish stress- and about the most frequent but least prominent of English sounds: 'schwa' /@/.

4 Phonemic transcription

An introductory module / series of lessons on English pronunciation that begins with (long) theoretical explanations about the prominence factors of English stress will not exactly win

our audience over. So after the exchange of comments and opinions about English pronunciation and a brief phonological explanation to some of them, I usually introduce to my students the phonetic symbols of English.

Practice 1: English phonemic transcription

p	t	k	f	s	T	S	tS
b	d	g	v	z	D	Z	dZ
h	l	r	w	m	n	N	j

I	i:	u:	U	eI	I@	@U
@	3:	O:	Q	aI	e@	aU
e	&	A:	V	OI	U@	

➢ **Look at the sounds underlined in the words below. Put the words under the correct symbol for that sound**

helm	wide	this	target	mark	change	jettison	long	moor	measure
sea	port	beach	ship	rig	line	rain	wind	you	air
full	miles	deck	fire	move	ice	think	data	anchor	vessel
pan	tow	course	fog	oar	tug	give	search	bay	not
foul	hold	oil	veer						

➢ **/dZVst f@ fVn/**

-Which words do the following transcriptions represent?

- /"deIndZ@r@s/
- /rI"kwest/
- /rVf/
- /"SIpjA:d/
- /p@"zISn/

-Transcribe the following words

- pilot
- launch
- starboard
- damage
- available

(adapted from the *Headway Pronunciation* series)

Taking into consideration the students' profile: adult, with prior knowledge of English, mostly exposed to written materials and educated in a language whose written form is almost purely phonetic, the phonetic symbols may effectively bridge the gap between written and spoken English. Furthermore, the phonetic symbols provide a good and easy first contact with segments, without going deep into their description[3].

The main aim of teaching the phonemic symbols of English is to make students capable of reading / interpreting the phonetic transcriptions given in dictionaries so that they can pronounce a word even if they have never heard it before. Besides, hearing and repeating are not always enough to achieve proper production since some English sounds are not part of the students' inventory of phonemes and they need to be trained in them.

Many people think that the teaching and learning of a new 'code', such as the International Phonetic Alphabet, is not worth the effort, but in my view it offers, at least, a couple of interesting advantages. On the one hand, phonetic transcription is a useful classroom tool. It provides a standard means of representing sounds avoiding personal scribblings, which seem perfectly intelligible when we note them down but they turn out to be impossible to figure out a couple of weeks later. Transcriptions also act as reminders of items difficult to pronounce and give students some 'tangible', physical clues to their pronunciation when the acoustic image of the word begins to fade.

On the other hand, the International Phonetic Alphabet provides an unbeatable one-to-one sound-symbol relationship and, as far as English phonemes are concerned, few symbols pose serious problems.

Hence, we first take a look at the consonant phonetic symbols which look unfamiliar. This way, out of the 24 consonants of English we end up with 7 very odd looking ones /T S tS D Z dZ N/. The rest can be easily handled.

Next, we focus on the sounds each one of the symbols represents and we pay attention to those our mother language does not have. We start with the voiced / lenis fricatives /v D z/ and voiced / lenis affricate /dZ/. At this moment I introduce the notion of voicing in order to help students produce these sounds. The phonological concept of voicing is extremely convenient here because the absence / presence of voice is the only feature that distinguishes /f T s tS/, which Spanish speakers already have in their native language, from /v D z dZ/, which they do not. Besides, voicing is easy to teach and practise since the vibration of the vocal folds can be easily perceived by placing our fingertips on our larynxes. After a short explanation and practice most students can produce these voiced sounds without much trouble.

As regards vowels, our main concern has to do with recognising the symbols and making students aware of the complexity of the English vowel system as compared to the Spanish one. We mention the length diacritic and the fact that short and long English vowels are not just quantitative variants of the same sound but that they also exhibit qualitative differences. For that purpose I use Daniel Jones' quadrilateral to compare the position of Spanish and English vowel sounds and we practise perception and production by means of some exercises with minimal pairs.

Finally we devote some extra time to dealing with the short unaccented vowel /@/, 'schwa'. We revise the concepts mentioned about unstressed syllables stemming from the students' perceptions of English rhythm and pace. We also mention some facts about /@/ such as frequency, production and emphasise the fact that "correct obscuration of the unaccented syllables of a word is as much a part of the word's accentual pattern as the full vowels on the accented syllables." Gimson and Cruttenden (1994: 119).

If we could make our students utter the unaccented syllables correctly, a good deal of pronunciation problems could be solved, for, as a side effect of right de-stressing, we would, possibly, achieve correct stress[4] placement, which, apparently, is more crucial for intelligibility than the accurate production of sounds[5].

However, English word stress is not easy to predict. General tendencies observed in accentual patterns are made into rules for foreign learners with the good will of helping them to place word accent correctly. But exceptions to the rules abound and the effort of learning the rules seems to be greater than the benefits obtained. How, then, can we approach English word stress?

5 Word stress

In order to tackle stress I decided to focus on two main difficulties the Spanish learner of English has. The first of them is linked to language typology: English is a Germanic language, and Spanish is a Romance language. Therefore, stress assignment in both language branches differs dramatically[6] but students systematically apply their Romance / Spanish stress-pattern to any words they don't know but look familiar. Thus, a word such as *purpose* /"p3:p@s/, becomes *purpose* */pur"pous/. In this respect I propose a simple rule to follow:

"if it looks like Spanish, it won't be pronounced the Spanish way"

We, then, try displacing stress as far left in the word as possible, taking into consideration that English accent is so 'powerful' that in many cases the rest of syllables are reduced to having a very weak vowel sound ('schwa' mostly), despite misleading orthographies.

In order to do some practice, we first try to prove our rule:

1: Try and pronounce the following words. Which is the stressed syllable in each one of them?

natural interesting courage purpose

Then we apply it to some specific vocabulary:

2: Now apply the 'leftmost rule' to the following terms. Mark the syllables that contain /@/.

engine turbine measurement temperature forecastle

Finally we start developing the rule further by adding some 'new rules':

"suffixes such as *-age -able -ous* never carry stress and contain very weak vowels"

3: Choose the weak vowel (/@/ or /I/) that corresponds to each of the suffixes in the words below. Mark the stressed syllable on each of the terms and try and pronounce the words.

comfortable floodable leakage buoyage serious anxious

Once again we pay special attention to the production of the weak syllables by pointing out to their lack of stress and their good chance of containing a /@/ sound in them. As a rounding up of the topic, we comment on the characteristic rhythmical pattern achieved by the alternation of stressed / unstressed syllables. We also mention the fact that English stressed syllables tend to be very prominent as compared to the unstressed ones, which seem to be uttered at high speed and perceived as an indistinct whisper. This characteristic rhythmical pattern spreads beyond the word boundary and passes on to connected speech where alternation is maintained further by means of the weak forms.

6 Stress in connected speech: weak forms

No attempt whatsoever is made at making students learn the full list of English weak forms by heart. As in the exercises above, emphasis is placed on raising awareness about differences and trying to find some initial solutions to the difficulties these differences pose. In order to introduce this topic we talk about the tendency of English speech to move from stressed syllable to stressed syllable tip-toeing over unstressed ones, and how words which convey meaning ('lexical' words) tend to be more prominent than those which hold the structure of the sentence ('function' words.)

We, then, do some traditional rhythm exercises with a view to, once again, putting theory into practice. We apply the division lexical / function words to speech, and check whether the rhythmical pattern achieved would, anyhow, resemble the native pace which puzzled us so much at the beginning of the course / module.

a. Assign a maximum of two stresses to each sentence, then pronounce the sentences going from stress to stress and obscuring weak syllables.

- the fish jumped
- the fisherman jumped
- the fisherman was jumping
- the fisherman had been jumping

After this short activity, a final more complex task is suggested.

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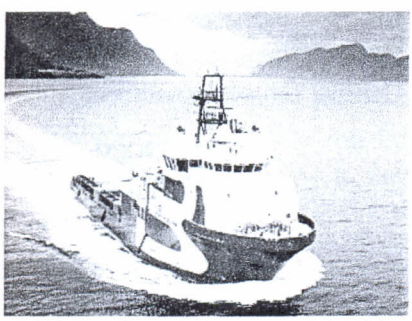
News Podcast

Exercise 3. This is part of the tapescript from the video you have just watched. There are several mistakes in the text due to the fact that a number of weak forms are missing. Guess the words and place them in their correct positions.



On Thursday 12th April, Shetland Coastguard received call assist ship capsized. Martin Sykes takes up story.

"It massive incident specially when boat capsized persons on board; very, very big."

Bourbon Dolphin arrived in Shetland Islands only few days before incident occurred. When manoeuvring anchor in chain drilling rig, Transocean Rather, Bourbon Dolphin suddenly capsized. Fifteen people on board. Ten people recovered sea, three later pronounced dead, further five declared missing.

Despite extensive search, five missing crewmembers not found. vessel eventually sank before it be salvaged. It major incident coastguard in Shetland attracted global media attention.

Now listen to the fragment and check your answers.

If you wish to check the full text, click here

As it can be easily gathered from the number on the slide, this exercise is preceded by two others designed for listening comprehension: the first one is a *listening for gist* exercise, the second one a gap-filling activity. The material used in the preparation of this task comes from the Maritime and Coastguard Agency web site, where their monthly news podcasts can be accessed.

The main aims of this exercise are to predict, perceive and practise English weak forms. At first we read the text –and while at it, the guessing of the missing words also allows for the revision of some grammar points such as the use of the articles, verb tenses, and prepositions-. Students usually make remarks on the fact that it can be easily understood despite its missing words. This helps us explain and refresh the concepts 'lexical' and 'function'.

After the reading and guessing, we check the answers against the recording. We underline the fact that those forms are especially hard to hear because, precisely, they are not meant to stand out in the speech. For that reason they are not stressed, they contain weak vowel sounds (especially 'schwa'), and they even exhibit elision of some of their sounds (e.g.: h-dropping in forms of the verb *have* as an auxiliary.)[7]

Finally, we read the full text trying to apply the general guidelines we have been discussing and developing through the task.

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Maritime and Coastguard Agency

Maritime and Coastguard Agency
News Podcast

Exercise 3. Full text.

On Thursday the 12th of April, Shetland Coastguard received a call to assist a ship that had capsized. Martin Sykes takes up the story.

"It's a massive incident specially when a boat's capsized and there's persons on board; very, very big."

The Bourbon Dolphin had arrived in the Shetland Islands only a few days before the incident occurred. When manoeuvring the anchor in chain of a drilling rig, Transocean Rather, the Bourbon Dolphin suddenly capsized. Fifteen people were on board. Ten people were recovered from the sea, three were later pronounced dead, a further five were declared missing.

Despite an extensive search, the five missing crewmembers were not found. The vessel eventually sank before it could be salvaged. It was a major incident for the coastguard in Shetland and attracted global media attention.

If you wish to check the full text and the audio fragment, click here

7 Conclusion

Here I would like to mention some of the outcomes of these introductory lessons to English phonetics.

I must say they differ a little depending on the group of students involved. For trainees taking the introductory course to Standard Maritime English, phonetic / phonological explanations constitute a good answer to some of the problems they perceive. They help them understand that pronunciation difficulties are not about an innate inability of the Spanish learner to understand / speak English but that they are the result of trying to match up two different systems.

For students at university, phonemic transcription generally becomes their main interest. 'Seeing is believing' for speakers of languages with near phonetic spellings and once they have grasped the basics of transcription of the phonetic symbols, they appreciate having visual reinforcement of the pronunciation of new words. I must say that this 'ready' acceptance of phonetics on the part of students has also to do with the fact that pronunciation is assessed in both the oral and written exams. However, in the end, transcription proves a useful tool and most students take it willingly as such. As a result, most of them attempt phonetic exercises in the written papers, despite amounting to very few points out of the total, and pay attention, make transcription notes and ask about the pronunciation of difficult terms while preparing their oral presentations.

To sum up, it *is* possible to teach phonetics in the Maritime English classroom. Despite some sceptical looks on the part of students at the outset, most of them can follow explanations and complete the tasks without major difficulties. Some even enjoy the topic and adopt some of the strategies we explore in the classroom.

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[1] I am aware of the fact that the notion of 'stress-timing' falls very short of a comprehensive description of English rhythm. For comments on this, Gimson and Cruttenden (1994: 226-7) and Roach (1991: 120-3).

[2] I use British English RP Standard as reference.

[3] No phonemic account of English can go without a description, explanation and practice of its segments, but for such a short introduction to English phonetics I find this approach much more useful.

[4] I use 'stress' and 'accent' indistinctively to refer to the most prominent syllable of a word.

[5] "Despite the fact that an English listener will tend to interpret a distorted sound or accentual pattern [...] in terms of his own (correct) pattern [...], it may nevertheless happen that a word pronounced with the correct sound sequence may be misunderstood if the relative prominence of the syllables is incorrect." Gimson and Cruttenden, *(1994: 215-6).*

[6] Whereas Germanic languages assign stress beginning at the left end of the word, Romance languages start at the right periphery of the word. For a more detailed account see, for instance, Lass (1997: 77).

[7] Despite not being exactly the same thing, it may be worthwhile recalling here contractions as orthographic evidence of other elision processes in English.

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CV

BA from the Universidad del País Vasco. Research Grant from the Spanish Ministry of Education. MA from the Universidad de Oviedo. Lecturer in English Language. I have taught a varied number of subjects, from English Phonetics to various Englishes for Specific Purposes. Since 1999, most of my lecturing and research duties and interests have been devoted to Maritime English.

Development of ME Teaching Materials in SMU of China

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Abstract

Maritime English is a sub-set of English for the exchange of information and transfer of knowledge to be used as a working language in the international maritime world. The teaching of maritime English can be affected by many factors such as course syllabus, teaching materials, teaching facilities, teaching methodologies, teachers, students etc. Among these factors, teaching materials are found to have the most defects by many teachers and learners of Maritime English in China.

In this article, at first, I will discuss on the characteristics of ME as English for Special Purpose (ESP), especially in respect of learner's oriented. Next, we will provide a brief view of current situation of ME teaching materials used in SMU as well as introduce the new compiling ME teaching material. And then, I will analyze this two teaching materials with reference to the characteristics mentioned before, and some statistics and reports shall be quoted in it. And finally, some special considerations when designing the new ME teaching material will be suggested.

The article aims at providing some suggestions for promoting the compilation of ME teaching materials in Chinese MET institution so as to satisfy specific needs of learners, motivate them in class and help them increase their English.

Key words: Maritime English (ME), new compiling ME teaching material, English for Special Purposes (ESP), learner's oriented

1. Introduction

ESP stands for English for Specific Purposes. The earliest definition was brought forth by Halliday in the book The Linguistic Sciences and Language Teaching (1964):"English for civil servants; for police men; for officials of the law; for doctors and nurses; for specialists in agriculture; for engineers and fitters". Obviously, ESP is not a particular kind of language or methodology, nor does it consist of a particular type of teaching material. It is an approach to language learning, which is based on learner need. The foundation of all ESP is the simple question: Why does this learner need to learn a foreign language? ESP, then, is an approach to language teaching in which all decisions as to content and method are based on the learner's

reason for learning.

2. Teaching materials

2.1 Roles of Teaching Material

Materials have multiple roles in ELT and can serve as(Cunningsworth,1995):

- **a resource for presentation material(spoken and written)**
- **a source of activities for learner practice and communicative interaction**
- **a reference source for learners on grammar, vocabulary, pronunciation, etc.**
- **a source of stimulation and ideas for classroom language activities**
- **a syllabus(where they reflect learning objectives which have already been determined)**
- **a resource for self-directed learning or self-access work**
- **a support for less experienced teachers who have yet to gain in confidence.**

It is generally accepted that the role of materials is to be at the service of teachers and learners but not to be their master. Its role is not to exercise a tyrannical function as the arbiter of course content and teaching methods. However, it has to be recognized that teaching materials can exert considerable influence over what teachers teach and how they do it. Consequently, it is of crucial importance that careful selection is made and that the materials selected closely reflect the aims, methods and values of the teaching program.

The relationship between teacher and materials is an important consideration and is at its best when it is a partnership, which shares common goals to which each side brings its special contribution. The aims of the materials should correspond as closely as possible to the aims of the teacher, and both should seek to meet the needs of the learners to the highest degree. The partnership is helped when aims and objectives are well defined, and when the different but complementary roles of teacher and materials are clearly perceived and well balanced.

2.2 Material Evaluation

The ability to evaluate teaching materials effectively is a very important professional activity for all EFL teachers and is of great importance for the language learners. Evaluation can take place before a material is used, during its use and after use, depending on circumstances and the purposes for which the evaluation is being undertaken. In this case we are looking at future or potential performance of the material.

There are two principal ways in which teachers can carry out their evaluations. One is to rely on evaluations carried out by "expert" reviewers. In some cases (such as the Survey Reviews the journal provides from time to time), the reviewers identify specific criteria for evaluating materials. However, in reviews of individual course books, the criteria often remain inexact and implicit. Alternatively, teachers can carry out their own evaluations. There are numerous checklists and guidelines available to help them do so (e.g.Cunningsworth 1984, Breen and Candlin 1987,Hutchinson and Waters 1987,McDonough and Shaw 1993).

Ellis(1997)claimed that in order to collect information in a more systematic manner teachers should conduct an empirical evaluation. According to Ellis, the process of evaluating a task can be divided into the following seven steps:

Step 1:Choosing a task to evaluate

Step 2:Describing the task

A task can be described in terms of its objectives; the input it provides for the students to work on; the conditions under which the task is to be performed; the procedures the students need to carry out to complete the task; and outcomes taking the form of the product(s)the students will accomplish and the processes that will be engaged in performing the task.

Step 3: Planning the evaluation

Planning a task-evaluation involves working out answers to a number of questions concerning the purpose of the evaluation, audience, evaluator, content, method, and timing (see Table 1).

Step 4:Collecting the information for the evaluation

The information needed to evaluate a task can be collected before, during, or after the teaching of the task .

Step 5:Analyzing the information

Two ways of analyzing the data are possible. One involves quantification of the information, which can be presented in the form of tables. The other is qualitative, where the evaluator prepares a narrative description of the information, perhaps illustrated by quotations or protocols.

Step 6:Reaching conclusions and making recommendations

Conclusions are general statements about what has been discovered about the task from the analyses that have been performed. Recommendations are the evaluator's ideas regarding future actions.

Step 7:Writing the report

Strictly speaking, it is not necessary to write a report of an evaluation unless the evaluator intends to share the conclusions and recommendations with others. However, by writing a report the teacher-evaluator is obliged to make explicit the procedures that have been followed in the evaluation and, thereby, is more likely to understand the strengths and limitations of the evaluation.

2.3 Features of ESP courses

A number of features are often thought of as criteria to ESP courses, but at the same time it is not uncommon to find courses which the organizers wish to think of as ESP courses but which do not appear to fit these criteria (Robinson, 1991).

a) ESP is normally goal directed. That is, students study English not because they are interested in the English language (or English-language culture) as such but because they need English for study or work purposes.

b) An ESP course is based on a needs analysis, which aims to specify as closely as possible what exactly it is that students have to do through the medium of English. Whereas needs analysis formerly focused rather exclusively on target or end-of-course requirements, now it is usual to take account of students' initial needs, including learning needs.

Other features of ESP courses may be seen as characteristics rather than criteria since they do not always apply, although they might be seen as corollaries of the two criteria described above. First, there is usually a very clearly specified time period for the course. This means that objectives should be closely specified and their realization related to the time available. Next, the students on

an ESP course are likely to be adults rather than children. It is often assumed that ESP students will not be beginners but will have already studied EGP for some years. However, ESP can certainly be taught to students who are beginning their study of the language. Finally, ESP courses may be written about as though they consist of identical students that is, that all the students in a class are involved in the same kind of work or specialist studies. This may certainly be the case in many parts of the world, but equally we can find many mixed ESP classes. Even when students have identical job or study needs, however, they are still likely to be different in terms of the rate at which they learn English.

2.4 Needs analysis

The above features of ESP courses reveal that needs analysis plays an important role in ESP materials design and selection. In fact, what distinguish ESP from General English is the existence and the awareness of a need (Cunningsworth, 1995). If learners, sponsors and teachers know why the learners need English, that awareness will have an influence on what will be acceptable as reasonable content in the language course.

3. ME Teaching Materials Used in SMU

The quality of teaching material will directly influence the performance of the teacher as well as the students. It has great influence on the effects and quality of maritime English education. The appropriate teaching material can not only help the students to improve their language ability and handle the professional knowledge of navigation but also can stimulate the initiative of leaning and increase the interest of learning. As to teacher, the appropriate teaching material can make them put more effects on making the courseware instead of paying a lot of time on collecting the supplement materials of the course. Therefore, the whole process of teaching will be in perfect order and the objective of teaching can be attained soon.

3.1 Review of Current Situation

In China, the teachers of ME have realized the importance of the teaching materials and make effects on the compiling of the ME teaching material in several ways. Some of them edit course books by themselves and others directly import the foreign teaching materials or make some adoptions on the basis of foreign teaching materials. However, in view of the condition of the teaching material used in maritime academies in China, there are still quite a few attendant problems, which need to be solved.

3.2 Questions need to be solved

Firstly, the English teachers in all kinds of maritime academies and training institutes find out that there is not enough room for them while choosing the ME teaching materials. According to *Research Paper on English Education of Navigation Department in Universities in China, 2003,* the course books of oral English and listening as well as the course book for reading and comprehension are quite limited as well as some foreign course books are rather expensive and not suitable for the students in China.

The second question is that the editing of teaching material is lack of guidance of High-level teaching theory. Some ME teaching materials are not be compiled according to some teaching theories and principles, and they only put some materials together without considering the teaching objectives and methods. Since this kind of course book is lack of definite and

universal guideline, presently this ME teaching materials is still lack of systematization and logic.

Thirdly, in China, the maritime English is one of the examination subjects in order to get the competency certificate. Therefore, the contents of some teaching materials are quite examination-oriented without considering promoting the practical application of English. This kind of teaching material is sure to lead to examination-oriented teaching method, which emphasize on memory of the professional knowledge instead of stimulating the creative thinking and practical competence of students.

Fourthly, the content of the teaching material of maritime English is quite out of date. However, the navigation industry is developing with each passing day and more and more new international conventions, rules as well as technologies and machines are coming out. Obviously, all these changes shall be added into the teaching materials. But the teaching materials we used today could not provide the latest information on navigation. This teaching material without practicality will influence the motivation of learning as well as cause difficulty on teaching activity.

Fifthly, while compiling the teaching material, some editors place too much emphasis on language skills. Those exercises in book are focusing on traditional exercises such as grammar, vocabulary and translation. On the contrary, some other editors focus on the professional acknowledges and blindly copy the contents of foreign teaching material. The exercises in book can only check the memory of the text without considering training basic teaching principle. Therefore, the compiling of the teaching material fails to follow the rule and method of language learning as well as integrate with navigation acknowledge.

3.3 Introduction of New Compiling ME Teaching Material

The new edition of ME teaching material in SMU will be put into used in year of 2007. Comparing with the old edition, the new one has quite a few advantages and characteristics.

Firstly, the content of the course book has been updated. This new course book is composed of nine units involving latest navigation technology, international conventions, publications, and etc. As to the notes to the text, we use the pattern of English-English paraphrase in order to solve the problems of confusion. While reading the notes, the students can not only understand the right meaning of the word, but also handle the right usage of it. Moreover, the students can find out the background reading in each unit so as to enhancing the comprehension of the text. The articles of background reading are selected from some professional magazines and publications abroad. They could also help the students to broaden their vision and knowledge as well as stimulate their motivations of learning. In respect of the exercises, the editors selected them from the examination of competency certificate. As the students of navigation department have to attend this kind of examination in their senior year, the students could use these questions we selected here to check their studies. Considering the quality of teaching, we only choose some typical questions so that the students could draw inferences about other cases from one instance instead of only memorizing them. Moreover, we also add some questions in reading comprehension. The students could not only attain the latest information on navigation, but also improve their reading ability under the assistance of teacher. Furthermore, we design a topic writing in each unit in order to enhance the writing ability of students. We think it is truly a good way to integrate the language learning and profession knowledge together. The students are given more spaces to talk about their ideas and attitudes

in a written form after learning the text. At the same time, teachers could check the studies of students so as to adjust or improve their teaching method.

As well as print material, we also have a rich supply of audio and visual materials for ME teaching. Cassettes, pictures, cards, slides and video are those frequently used in the ME classrooms. As a usual practice in many universities in China, students, after finishing their first two years of fundamental English study, begin to take the specialized courses in their field from the third year. In order to give these beginners some understanding of the important concepts in their own field of study, pictures, slides and even animations can be brought into the classroom, which provide the students with genuine meanings to convey in their language practice.

As far as meeting learners' needs is concerned, new ME teaching materials have sometimes been in advance of general materials, as they have been developed specially for students who were perceived to have specific needs which could not be met fully by general materials. During the process of compilation of new ME teaching material, we hear the opinions from students, teachers and some experts. They all gave us some good opinion so as to make it more perfect.

4. Further Working

Although, we take a long time to compile this new ME teaching material, it still leaves something to be desired. What kind of theory of language influences the ME teaching material? Are the books strong and long lasting? Are they attractive in appearance? Do any parts of the package require particular equipment, such as a language laboratory listening center or video player? If so, do you have the equipment?

If the study may serve as an initial effort made to inspire more studies on the design and selection ME teaching materials the same study can be conducted during further research on more ME students and teachers from different universities and departments. By carrying out a series of such studies, hopefully, learners' needs can be more specific and a more detailed and concrete criterions can be developed.

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The Maritime English Course - An Issue of the New Teaching and Learning Environment

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Abstract

A considerable moment in time, promoting safer practices in navigation by reducing the risk of human error in communication, was the adoption of a common language at sea: the English language (standardized), the "lingua franca" of science and technology.

In the context of new educational trends chiefly based on I.C.T. 's, the Maritime English teacher is reexamining his/her own assumptions on learning and instructional paradigms to develop projects and customize courses. The objectives of this paper are:

1/ To suggest how CERONAV existing methodology and I.M.O. Model Course flexibly enable us both to design and to review the Maritime English Courses.

2/ To demonstrate own creativity and the tuition managing system flexibility, to show the weak and strong points in e-learning and multimedia applications and share experience and views with the honorable IMEC assistance.

Key words: Maritime English, syllabus, flexibility, active participation, multimedia, I.C.T

1. Introduction

Over the last decades there has been an augmenting shift from the conventional teaching and learning to modes where the Internet now plays a key role. E-learning is increasingly preferred for course delivery and instruction, reshaping traditional education world wide.

This paper outlines the shift from traditional to new teaching and learning practices based on a specific Maritime English Teachers' strategy. Then it discusses the use of technology, particularly the Internet and CBT, that supports and enhances efficient learning. Some experiences and findings are highlighted and illustrated by applications.

It is of relevance to underline that the technology-based tuition and an effective learning environment are crucial to professionally support our customers: Romanian and foreign seafarers.

Training differs from education. Post university training has the role to refresh and activate information previously received by a student, and in our case, by a seafarer. Thus, training becomes intensive, a prerequisite achieved by: managerial system flexibility, trainers' expertise and creativity and trainees' whole-hearted participation.

The author's point of view, when dealing with the Internet and multimedia integration in training, is that of an expert in Maritime English who considers her involvement a priority, an opportunity and a challenge.

2. Maritime English for Seafarers – from a traditional to a technology-based course

2.1 A realistic strategy for designing English courses

This is a program for engineer and electrical officers, in compliance with:

- ♣ I.M.O Model Course 3.17 [1]
- ♣ S.T.C.W. '95 Code Sections A III/1; A III/2 [2]
- ♣ CERONAV Methodology [3]
- ♣ I.S.M. Code [4]
- ♣ I.M.O. - S.M.C.P. [5]
- ♣ The Council of Europe and Common European Framework

The author shows the context in which the experts in English carried out the difficult job of issuing, out of combined efforts, a „brand-new" course, full of technological innovations, very attractive and keeping up with the seafarers' perspectives on the labour market.
The Maritime English (ME) teachers have always been allowed and able to bring new ideas as how to use and innovate own pedagogy, methodology and ICT integration. This is chiefly to offer the trainees both a friendly and favorable study environment and a relevant role in the learning process: a more active participation, with more time spent in labs.
New ways of teaching meant new ways of evaluation. For monitoring the progress of both the trainees' and (why not?!?) of the trainers' skills (learning ↔ teaching), different evaluation programs have been introduced (e.g. ISF Marlins for Seafarers), useful enough but not covering all the aims pursued and all the topical items set in the syllabi.

2.2 Changes in the teaching and learning paradigm as seen by CERONAV ME teachers

Fearing to be left behind by the rapid advance of technology, teachers generally try new techniques and methods at once, willing to be successful "users" of the "information society". They enlarge their classical role: becoming at times designers, facilitators, advisors or mentors.
The ME teacher should bear in mind that:

- syllabus content should be focused on the learners' needs
- the lecturer may adopt the facilitator's job
- the learner, from passive, becomes active and engaged (interacts, collaborates and creates)
- print materials are replaced with Web-based resources
- the use of the Internet and CD-ROM will determine the learners to change attitudes towards study, skills and information acquisition

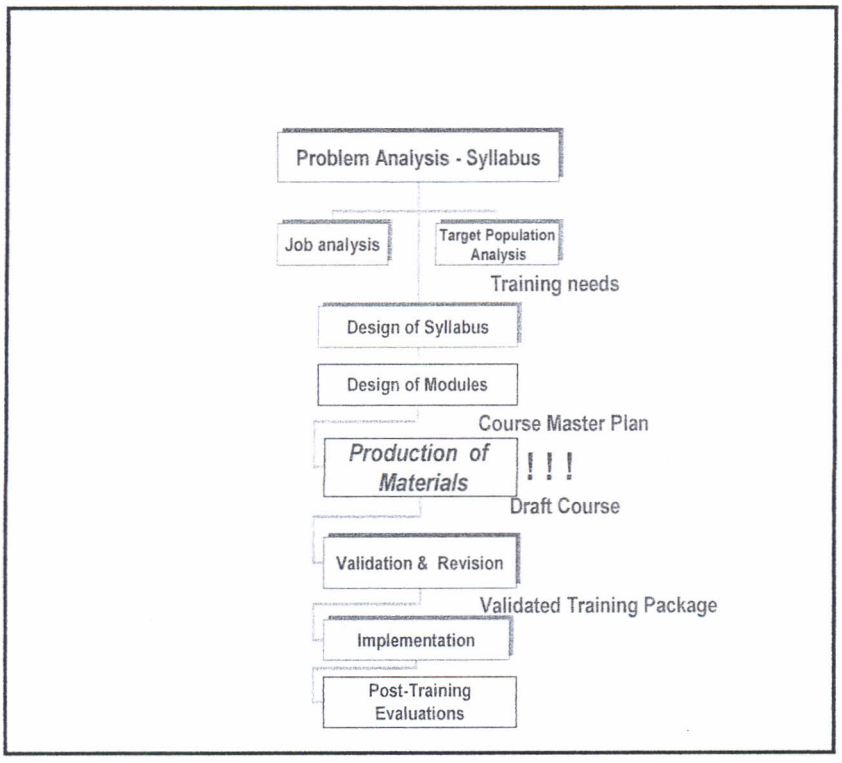
} for the learning to become efficient and enjoyable

There are various software and book producers (regarding the current state of the art) in the world selling their packages for English courses. However, it depends a great deal on the qualification, the quality and the engagement of the individual ME lecturer whether his/her classes are a boring by rotes learning or an attractive and useful event [6].

2.3 The long, long way from objectives description to working creatively with ICT

The IMO Model Course on Maritime English (IMO 2000) provides useful, flexible guidelines of how to integrate topics and how to build up a syllabus. Yet, little is mentioned about multimedia and education, just recommendations for teaching facilities and equipment.
The Council of Europe and the Common European Framework [7] is intended to overcome the barriers to communication among professionals working in the field of modern languages arising from the different educational systems in Europe. The author, as a Framework user, was interactively involved in studying it, retaining whatever is applicable to her work. The instructional media are briefly summarized, emphasis is put on what to be done from now on to fill in the gaps, from teachers' knowledge and experience.
In the process of supporting the syllabi with media, we have in view two facts:
1/ any text can be carried by any medium
2/ the nature of the medium exercises a strong influence/power/pressure on the text to be studied and therefore on the learner. E.g.: information presentation contrasts in books, magazines, newspapers etc. It may be careful, accurate, objective, elaborate, well organized, attractive or frugal, hastily scribbled, ephemeral in interest, superficial, subjective a.s.o. [8]
CERONAV Training Methodology. While actively using English for tasks, trainees can acquire language from each other and also practice communicating in a social context. This type of activity may involve pairs and groups (teamwork) exchanging information and is based on the original documents and sea-stories included in the training package.
The exercises increase in complexity as the course progresses and as trainees become familiar with specific topics of the module. During exercises trainees are expected to make use of the knowledge and skills previously learnt and to observe the basic principles of **experiential (real-life) learning** [9].

3. The "Story" of the Maritime English Course through flowcharts and tables, with its achievements and hardships. (Source: author)



"Don't tell them, show them !"

For the course design let's employ the known (traditional) framework in a more flexible and encouraging way, maybe adopting a more research-oriented approach. The question is: How to make it all fit between **"the covers of the book"?** (i.e. the ME Course Package).

Fig.1: Flowchart with activities

Table 1: The existing teaching and learning environment at CERONAV
(Maritime English Course)

SKILL	MEDIA (computer and non-computer approaches)	COMPETENCES
LISTENING and **COMPREHENSION**	Viva voce, audio & video tapes, RADIO & TV broadcasts, entertainment, CD-ROM, INTERNET, SOFTWARE	• demonstrates understanding of the meaning and use of the specific vocabulary • monitors own performance by listening to a recording of own voice • identifies messages, instructions, questions and answers • understands formal/informal conversation • write notes after listening to spoken accounts • simulates VHF communication • understands native- and non-native speakers of English
SPEAKING	Audio & video tapes, CD-ROM, INTERNET, SOFTWARE	• maintains grammatical control of language, the mother tongue influence being unnoticeable • monitors errors and corrects them in retrospect • communicates face-to-face or at a distance • describes activities taking place from pictures/ video/audio prompts etc, • exchanges information about current /routine/ emergency situations • simulates VHF conversation deals with breakdowns of communication • explains theories, describes equipments and procedures • gives clear instruction for a range of tasks • sustains conversation, makes debates and comments, is confronted with an interview • briefs personnel, conducts meetings

WRITING

Books, magazines, newspapers, instruction manuals, textbooks, prospectuses, forms, labels, dictionaries, thesauri, etc., carried by all kinds of MEDIA

- writes notes, messages, records details
- fills in forms and questionnaires
- keeps records of parameters, etc.
- writes incident reports giving details on the problem
- writes presentations/ information on events, regulations, etc.
- keeps personal, professional & business correspondence

READING

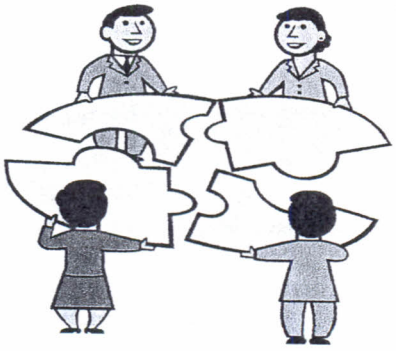
Manuals, instructions, technical drawings, charts, forms, Free Web Pages

- skim reads different materials for general understanding and for giving accounts
- reads samples of documents and then notifies on (e.g.) shipping company policy documents, notes or circulars, etc.

COMBINATIONS:

- **READING + RETELLING**
- **AUTHORING TOPICS**

(e.g.: towards a portfolio of resources)



Dictionaries, Reference materials, Free Web Pages, Software Packages

- speaking informatively (facing advanced situation, e.g. Engine Room Simulator, etc.)
- shows findings of a research (a given topic)

Table 2: Syllabus reflecting a technology-based training. (Extracts)

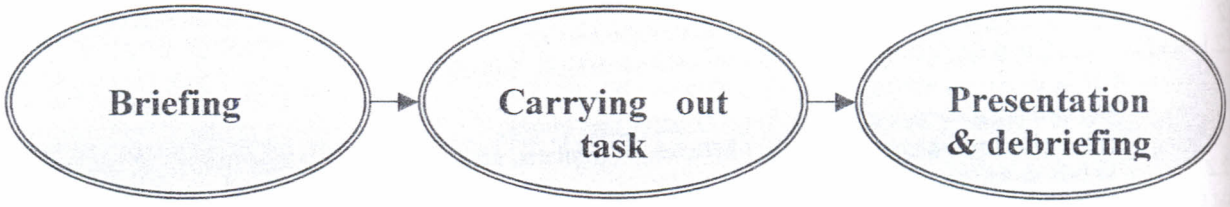
MODULE	AVAILABLE PROGRAMS AND TOOLS	TRAINEES' BENEFITS
...		
2. SMCP IN SITUATIONS 2.1 On-board communications : 2.1.1 Briefing on engineering operations. 2.1.2 Current and routine situations. 2.1.3 Safety and risk in the work place. Actions in case of accidents. Reporting incidents. 2.1.4 Communication with passengers 2.2 External communications : 2.2.1 Standard GMDSS messages: Standard distress message Standard urgency message Standard safety message 2.2.2 Threats to life: armed attacks, piracy, drug smuggling, stowaways, etc.	**- I.M.O S.M.C.P : Marine Soft GmbH** **- I.M.L.P. : The International Maritime English Language Programme (2003) Alk & Heijnen Publishers, NL** **- Maritime English: 1997 Macromedia Sweden AB** **- Internet Explorer** **- Microsoft Office** **- Video cassettes: Videotel Marine UK (V2, V4)** **- Traditional: books, articles, documents, etc**	▪ Phrases are presented in convincing maritime contexts, close to real-life environment - twinning instruction: language and subject-matter as a whole. ▪ All the teaching aids are for the classroom and private study. ▪ Trainees adore scenario-like sequences of events.
3. MARITIME ACCIDENT PREVENTION REPORTING MECHANISMS 3.1 Shipping companies and on-board safety. 3.2 Reporting and analysing non-conformities, near-misses, accidents and hazardous situations. 3.3 Principal sources for the safety lessons: IMO, Nautical Institute of London, MAIB, AMSA, TAIC, EMSA, Romanian seafarers 'shared experience. 3.4 MARS reports. 3.5 Other reports 3.6 Major accidents with devastating effects (Prestige) etc.	**- I.M.L.P.: The International Maritime English Language Programme (2003) Alk & Heijnen Publishers, NL** **Maritime English: 1997 Macromedia Sweden AB** **- Video cassettes: Videotel Marine UK (V10, V29)** **- Internet Explorer** **- Microsoft Office** **- Traditional: books, articles, conference proceedings, real documents and forms.**	▪ Both complex and integrated communication skills are developed. ▪Trainees are IT-stimulated to home working. ▪ They are committed towards sharing and relaying experience. ▪ Opportunities for them to try out new attitudes to safety and security.
4. GLOBAL TRENDS IN SHIPPING (SHIPBUILDING & SHIPHANDLING) Information and communication technologies - the digital era 4.1 I.C.T.'s 4.2 Maritime communication technologies - an aid to ship operation & management. 4.3 Global networks expansion & revolution: *intra-, inter-, extra-* and *ultra*-NETS.	**- Internet Explorer** **- Microsoft Office** **- Scientific papers, Conference proceedings: I.M.O., I.M.L.A., I.M.E.C., W.O.M.E., I.A.M.U.** **- Everest Free Dictionaries 3.10** **- Journals: *Learning & Leading with Technology, Safety at Sea, Motorship, Seaways, Shipping World and Shipbuilder*** **- Traditional: books, articles, etc.**	▪ Trainees get valuable information for their professional spheres. ▪ They willingly share experience either on the subject or on the techniques used. ▪ They make suggestions to the trainer, feeling useful. ▪ The "training events" become more and more interesting and attractive. ▪ Find out more and new information sources on safety and security.
...		

3. Applications: Integrating the Nets into the English classes A challenge for both trainers and trainees

3.1 Objectives :

- Using ship engineering information for the sake of safety of life at sea
- Speech stimulation
- Internet and media use stimulation
- Encourage individual experience sharing on the **topic** and **techniques** used

3.2 Strategy :



- Phenomena
- Illustrations
- Experience
- Net/media suggestions

- Documentation
- Brainstorming
- Execution

- Materials display
- Analyzing content design
- Strong & weak points
- Suggestions to continue

3.3 Practical Applications Session : Ship's Breakdown (Blackout)

Student 1: Engine Control and Automation

http://www.wartsila.com/Wartsila/docs/en/ship_power/media_publications/marine_news/2005_2/the_ships_electrical_network.pdf. **G o o g l e**

The highlighted terms : **blackout ships**

*"An emergency diesel generator (EG) is used to provide main electrical power should the main source fail, for example as a result of a **blackout**. The emergency source must be self-contained and independent of the other engine room systems, with its own independent systems for starting, fuel oil, lubrication oil, cooling and preheating. The consumers supplied by the EG as required by the regulations include emergency lighting, navigation and communication equipment, the steering gear, fire and sprinkler pumps, bilge pump, water tight doors and lifts.*
The EG must also be able to start automatically if the main source of electrical power fails to supply the emergency switchboard. In this case the EG is automatically started and connected to the emergency switchboard. The automatic starting system and the characteristics of the prime mover should be chosen to ensure that the EG carries the required load as quickly as is safe and practicable, and within a maximum period of 45 seconds. The services listed above are then automatically supplied from the emergency switchboard (due to interlocking of the EG and main source breakers)

Where the emergency source of electrical power is a generator, this must be provided with a transitional source of emergency electrical power. The ship type defines the selected uninterruptible power supply (UPS) application."

Comments:
Interest for: the topic, Google search results, Wartsila Corporation, technology news, "Marin News" Journal✓ ✓
Incomplete presentation, incomplete information, no pictures, whose responsibility for the content ? (Wikipedia ?) ☹

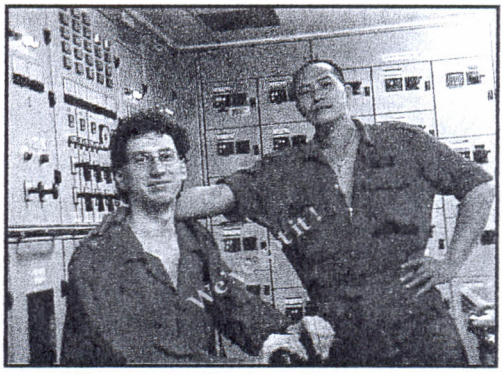
Student 2 : Total black-out

In a particular situation, when the emergency generator fails to start in the automatic mode (total black-out), the first operation will be the manual start of emergency generator. This is to ensure the primary power necessary to start the auxiliary engines and emergency equipments (emergency steering gear, emergency communication equipments, navigation equipments).

Comments: No comment ! ✓✓✓

Student 3 e-mailed: Machinery breakdown

„In the problem we had I would like to highlight how automation for alarm system helped save the main engine from a major breakdown. In the middle of the night while under UMS, we received an alarm indicating M/E jacket cooling water de-aeration tank low.
We vented the chamber by slackening the flange bolts when hot vapour was observed venting out. The same repeated till morning & then engine slowed down stepwise to investigate the problem. When the engine reduced to D.S. ahead revs., no. 1 unit exhaust deviation alarm activated. Ultimately the engine stopped & it took an hour to cool down to enable open

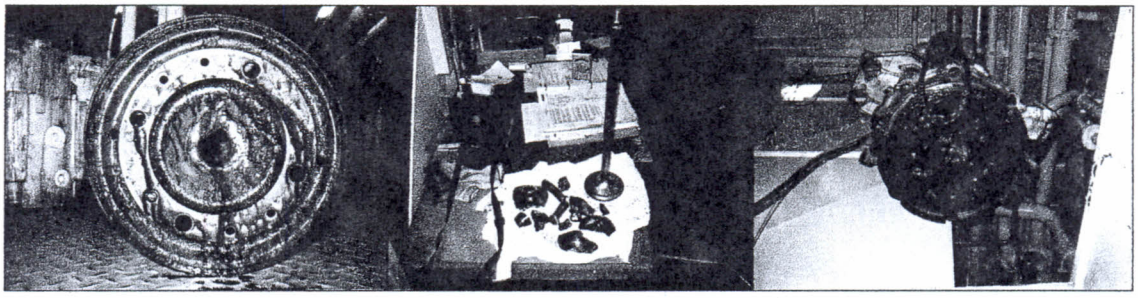

Picture 1: Student 3 source

no.1 unit head. The cooling water pipe connection from head to common manifold removed for observation. Found air escaping from a pinhole on the exhaust valve. Upon getting passage to cooling water side exhaust valve repaired and problem solved.
Engine started, and ship back on sea passage. The alarm system & pipe line design technique helped finding out the problem in an early stage & avoiding a major trouble".

Comments:
Interest for: the real-life event and problem solving. Oral presentation, discussion engaging. An appropriate (scientific) register, but keeping to the "Engine Log Book" written style where it was extracted from. ✓✓

Student 4 e-mailed : Main engine breakdown

"After blowing main engine in order to prepare it for launching, once the starting button pressed and fuel sprayed inside the combustion chamber, due to bad lubrication of the exhaust valves, the spindle of one of these valves broke. The pictures show the piston crown cracked, one valve broken in pieces, the cylinder cover destroyed, some of the spindle pieces blown off inside the charging air manifold and some inside the turbocharger housing, damaging the turbocharger impeller's blades on exhaust side. Main Engine: 4-stroke, 3000 kW type."



Pictures 2-4: Student 4 source

Comments:
Topic – Excellent conversation support✓
Developing speech skills✓
Pictures – Real-life situation✓✓✓
Generating sharing and collaboration✓✓
Insufficient time for debates ☹ ☺

"End of session" ☺☺☺

4. Conclusions

- Since the technology is continuously undergoing changes, we use the available means for reviewing courses contents, eliminating what is redundant and introducing new materials.
- For the LANGUAGE AND INFORMATION ACQUISITION by the seafarers, we have in view to produce a MARITIME ENGLISH MULTIMEDIA PACKAGE. At present we possess enough knowledge, some experience and a lot of dedication. There are some steps ahead to be covered by the managerial and training staff to find the best

practical solutions, as inexpensive and quick as possible, until we completely integrate the Internet and Multimedia in all the programs.

- Our trainees are high professionals in their fields, that is why we rely on their power of observation and analysis, establishing which their most convenient tools are to study in-house or to perform follow-up work.
- We, the teachers of ME, need to learn more on Multimedia creation or application, to become skillful at it by exploring all possibilities and secrets.
- The slogan that helped the author of this paper to enhance productivity was: *"Forget you are a non-professional, Internet and Multimedia are within your reach!"*
- The author is hopeful that trainees will continue to e-mail their personal narratives as digital stories, improving in the future the productions with voices, photos, drawings, animation and copyright-free music.

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TITLE: UNDERSTANDING SALVAGE AND RESCUE OF SUBMARINES.

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Abstract

Nowadays the importance of English as an international language is well known. It is the first or second language of millions of people all over the world and it is the key language for scientific and technical international communication.

This work will present an exploration of a discourse style: "A subfield of English for Submariners", a register which, to my knowledge, has not often been studied . In particular, firstly I will present findings related to a corpus-based study of a sub-field of Submarine English concerned with "Salvage and Rescue" language .To study "Salvage and Rescue", I have used a NATO unclassified book entitled "ATP-57" which is used as the compulsory text by teachers and students to study "Salvage and Rescue" at the Submarine School in Cartagena."ATP-57" consists of eight chapters and some annexes. This small corpus has 173.601 bytes, 27716 tokens and 2991 types. It has also been revised the most frequent words as well as the most important collocations of these words . As pedagogical implications, it has been pointed out some important aspects, such as:

- identifying some technical nominal collocations which are not reflected in the most important dictionaries (i.e. "Rescue **gear** ship") which give to our students and to the use of collocations for the teaching of English for submariners a great scope of study.

-improving effective communication with colleagues, retention of vocabulary and concepts through authentic material.

- getting motivated through the learning process dealing with a context which students are interested in.

1 Introduction

Nowadays the importance of English as an international language is well known. It is the first or second language of millions of people all over the world and it is the key language for scientific and technical international communication.

. Therefore now, more than ever, it is important to contribute to the advance of the knowledge of the English language in general and in all its aspects and facets.

This essay presents an exploration of one such discourse style: "A subfield of English for Submariners", a register which, to my knowledge, has not often been studied. In particular, I present findings related to a corpus-based study of a sub-field of Submarine English concerned with "Salvage and Rescue" language.

3. SETTING

Here I am going to revise relevant information about the Submarine Base in Cartagena-Spain. This is important to consider the context of situation as well as the professional setting in which this English for submariners is used.

The Spanish Submarine Force has its beginning in the year 1915. In this year on 17th February the Miranda law was passed by his Majestic king Alfonso XIII in which permission was given to the navy to acquire four submarines with the necessary material for the personnel training and a special salvage ship. From these four ships, the first one to be ordered was the "Isaac Peral", which was launched 22nd July 1916 in the United States.

From the outset, the naval station of Cartagena was chosen as the submarine base. The Royal Order of 19th April 1.918 determined its crew and the lieutenantcommander Mateo García de los Reyes was appointed to lead the team as the submarine's first Commander.

By royal order of 11 th October 1918, the base of submarines came to be named "Station of Submarines" and it was inaugurated in 1920. The law of 17th February 1915 already foresaw the creation of a School for the instruction and training of the future submarine crews, under the leadership of Lieutenant Commander Mateo García de los Reyes.

All the base and school services, as well as the seamanship Quarter and billets were settled in the old building of the platform artillery repairmen, and Templet room of the Naval Shipyard. This substantial building was constructed in 1755.

The quays for the submarines were set up the old dry docks carved in the north wharf of the navy shipyard basin, which were designed by Mr. Jorge Juan. They were the first which existed in the Mediterranean. The two primitive slipways, also from the 18th century, which had not been used for more than 50 years, were assigned as dry dock of minor craft.

In the year 2000 the works for the old trenches suitability started eliminating the central trench and leaving only two trenches with loading capacity in their four berth points with a 8 mts. Sounding pipe.

From its foundation to these days, the flotilla has gone through a lot of vicissitudes; a splendid year 1930 with 16 submarines in service, a sad civil wear with terrible consequences for the weapon; Admiral García de los Reyes' induction (S-31), the "Thirty and Unique" (Treinta y único"), Cartagena became the vibrant center for many crews and keeper of the submariner flame. Later by the "Guppy" class were introduced, and then, at the end or the decade of the sixties, the initiation of a naval programme which commissioned, during the seventies and eighties of the present units, the submarines of the "Dolphin" ("Delfin") and class "Galerna" "Strong north-west wind" ("Galerna" class).

The Submarine School develops and trains the future submarine crew (officers, petty officers and master seamen). It has a Technical Secretary's office, simulators, CPT-SUB and various Departments: Weapons and Tactics and Energy and Propulsion.

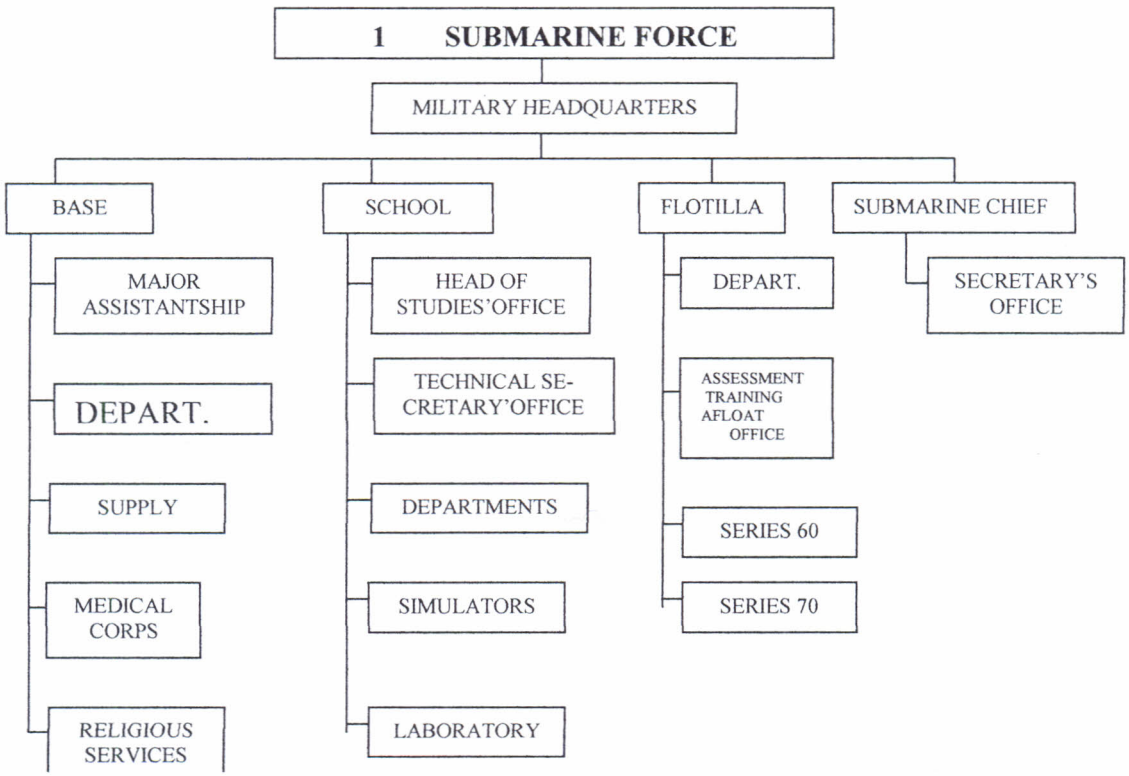
The Flotilla Commander is also the Base's Chief and the submarine School's Headmaster.

The Command Body is a staff, at the head of which there is a Commander, qualified in Naval War and old Commander of submarines, and in each section there is a lieutenant-commander.

Under the same command line is the head of studies of the school, who at the same time has responsibility as second commander of the Base and OVAS chief (assessment and training afloat office).

The Base has a maintenance chief who depends directly on the Naval Shipyard Admiral. His mission is to maintain the submarines with the help of the military personnel from the workshops and about two hundred civilian workers.

It also includes a medical corps with specialists in subacuatic medicine, a supply service and Religious Assistance.



There are three teaching departments, which correspond to just as many other technical-functional submarine fields:

- WEAPONS.
- TACTICS.
- ENERGY AND PROPULSION.

The personnel formation is carried out by means of further training and contributing in the complement's training in land (Simulators).

At present, the following courses are taught

- One course of officers Speciality for one year.
- One courses of Petty officers' complementary speciality for six months.
- Two courses of the Submarine Aptitude for leading seamen for six months.
- Different courses of Elementary/Aptitude for military master seamen and seamen.
- Monographic courses depending on the flotilla needs (narrow band analysis, periscopic, photography, central boss, etc.)

For a non-specialist, it was particularly difficult to characterise the field in detail to determine what are the important areas relevant to be considered within this parameter. One of the possible ways to address this issue occurred to me due to my being an English teacher at the Submarine School "Almirante García de los Reyes" in Cartagena.

I realized that, at the Submarine School, the officers studied a number of academic subjects, as part of their specialization course, which were considered essential for their formation and training as future officers submariners.

I thought that these academic subjects could be taken as a good starting point to determine areas to be studied, since they offered a good indication of what professionals considered as important areas in the field.

These are some subjects studied by the officers:

		Coefficient
1.	Torpedoes I	3
2.	Torpedoes II	3
3.	Equipments	2
4.	Acoustics	3
5.	Salvage and Rescue	1
6.	Equipments II	2
7.	Communication	1
8.	Tactics	3
9.	Data	3
10.	Services	2

It is intended to provide valuable information to be further applied in my doctoral thesis on the "Language of Submarine English", which will include Salvage and Rescue, the sub-field studied here, and other areas of this discourse style. In particular, in this project I have studied the language used in the book entitled "ATP-57", an unclassified NATO publication for the Navy, with the aim of carrying out a study of linguistic features.

The corpus has been digitalised and processed using WordSmith computer package to obtain specific information about the type/tokens and ratio inflection, concordances of relevant words and frequency word lists. The information thus obtained has shed light onto some important features which characterise this functional style at the lexical level.

The Submarine Officers I teach have to study English as a compulsory subject. It is very important for them, since it is the language they will use for international naval communication. These future submariners will be commissioned to NATO operations,

could command international manoeuvres, participate in NATO meetings, conferences..

Apart from obtaining information about a variety of language not studied so far, Thus a study of this functional variety is necessary and has a clear pedagogical application.

Secondly, due to its high degree of specialization, this discourse style is not included in the big corpora on the market, such as the British National Corpus (BNC) or the Cambridge and Nottingham Corpus of Discourse in English (CANCODE) etc. Therefore there is no corpus available that can be studied to obtain information about this functional style. A corpus-based doctoral dissertation on Submarine English would add new relevant data for corpus linguistics.

I realized that, at the Submarine School, the officers studied a number of academic subjects, as part of their specialization course.

I thought that these academic subjects could be taken as a good starting point to determine areas to be studied, since they offered a good indication of what professionals considered as important areas in the field.

Bearing in mind that "Salvage and Rescue" was mentioned, as one of the most important academic subjects, by the students at the Almirante García de los Reyes through some questionnaires, and was also considered as an important area by the Senior Officers consulted, I decided to center on this particular area "Salvage and Rescue" as the sub-field to be examined in my pilot study.

To study "Salvage and Rescue", I have used a NATO unclassified book entitled "ATP-57" which is used as the compulsory text by teachers and students to study "Salvage and Rescue" at the Submarine School in Cartagena.

4. RESULTS

Interestingly, through the study of this small corpora, it has been found out some evidences and illustrations to support arguments for small corpora studies, which will be reinforced throughout this pilot study. In our exploratory corpus-based study of "Salvage and Rescue" language, we have explored such facts about a subfield in which words are commonly used together with others, which words are used more frequently that others, which meanings of a word are most frequently invoked, and so on. This information can make remarkable contributions to language teaching and to understand the way language is used in this professional subfield.

Our exploratory corpus-based study of Salvage and Rescue language can be used as a link between learnability and specialization for our submariner students, due to the fact that all these particular words which require a particular scientific discourse domain will be learned by our submariner students, but with the particular aspect that they will learn them in a real linguistic context.

At this point, I would like to highlight that a corpus analysis through WordSmith and similar applications will be an important part of my future investigation, since, as this pilot study demonstrates, it can produce lexical data which is very important for the grammatical and lexical characterization of this discourse style.

For example, the potential of concordancing for language teaching and learning is worth examining due to its importance for syllabus design.

Considering that any item can have a number of different uses, concordancing can identify which uses of items to teach, because are useful for our particular purposes, and which uses not to teach. Let us have a look at one of the most important words in the corpus, the word "submarine".

The concordance of the word "submarine" (see table A below), for example, helps us to identify two important uses of this item in this discourse style: as a noun (as in "a disabled submarine", premodified by a participle) and as a premodifier of another noun (as in "submarine accidents", "submarine classes", "submarine hull …").

Table A. Concordance of "Submarine word"

N	Concordance	Word NO.	%
1	To locate a disabled **Submarine** on	179	1
2	be confronted with a submarine SAR problem	350	1
3	crew members of a **submarine** accidents	387	1
4	general philosophy for **submarine** escape	464	1
5	saving life after a **submarine** accident	501	1
6	al. Salvage of the whole Sub. is unlikely to	521	2
7	receiving signals from the submarine. Nato	765	2
8	has been raised the Sub. Search and	793	2
9	team. The ration whose **submarine** has sunk sho	1023	2
10	this team may include **submarine** commanding	1059	2
11	upply d. Photographs of **submarine** hull, fitting	1136	3
238	for escape. Sufficient **submarines** escape	17842	31
239	fitted in all NATO **submarine** classes are	17932	31
240	described below. O 615 **Submarine** Indicator	17974	31
241	usually the there to the Sub. They consist	18006	32
242	many **submarines** carry. **Submarine** launched on	18241	32
243	are independent of the **submarine**'s electrical	18347	32
244	surface forces once the **submarine** has been foul	18367	32

Concordancing thus can be used to eliminate time-consuming attention to examples not relevant for the discourse style being studied and allows the researcher to focus on specific meanings.

Considering the results, we can mention :

TABLE: Figures of our pilot study

	Overall
Bytes	173.601
Tokens	27.716
Types	2.991

The basic idea is that the results of the quantification of the occurrence or productivity of lexical features can lead to the stylistic and didactic characterization of this material. We can find a big difference in the type/token ratio, which makes difficult to analyze the TTR relevance.

Considering that any item can have a number of different uses, concordancing can identify which uses of items to teach, because are useful for our particular purposes, and which uses not to teach.

As with concordance, word list-derived analyses are also of interest. With the aid of Wsmith, I have identified the most frequent words in the corpus (see TABLE L). A small number of words have a very high frequency, being the articles "the and a" the most extreme cases, followed by the prepositions "of" and "to", with 687 and 643 frequencies resp. In our work, we find two main types of nouns, namely common count concrete nouns, such as "Submarine(261), crew, datum(40), personnel", etc. It is important to pin point that the most part of nouns belong to the "Common Noncount Abstract" section, such as: "Rescue(204),escape(172),recovery(74), ratification(19)....

TABLE L: " Wordlist"

TABLE B: Wordlist"

	Word	Freq,	%	N	Word	Freq.	%
1	The	1505	3.54	31	Can	81	0.19
2	A	912	2.14	32	Not	80	0.19
3	Of	687	1.61	33	**Part**	78	0.18
4	To	643	1.51	34	**Recovery**	74	0.17
5	And	573	1.35	35	**Ships**	67	0.16
6	Be	367	0.86	36	Change	65	0.15
7	In	353	0.83	37	Signal	63	0.15
8	Is	299	0.70	38	All	62	0.15
9	**Submarine**	261	0.61	39	Draft	62	0.15
10	For	211	0.50	40	Ratification	62	0.15
11	**Rescue**	204	0.48	41	They	62	0.15
12	Are	177	0.42	42	Escapes	58	0.14
13	**Escape**	172	0.40	43	Submarines	55	0.13
14	By	167	0.39	44	Any	53	0.12
15	As	154	0.36	45	Medical	52	0.12
16	On	150	0.35	46	Possible	52	0.12

17	NATO	148	0.35	47	When	52	0.12
18	Will	147	0.35	48	Used	51	0.12
19	With	147	0.35	49	Forces	50	0.12
20	Should	141	0.33	50	Ship	50	0.12
21	Search	129	0.30	51	Air	48	0.11
22	May	126	0.30	52	One	45	0.11
23	Unclassified	124	0.29	53	Pressure	45	0.11
24	From	109	0.26	54	Area	44	0.10
25	That	103	0.24	55	Equipment	43	0.10
26	Surface	100	0.23	56	Support	43	0.10
27	This	96	0.23	57	System	43	0.10
28	Chapter	92	0.22	58	Available	42	0.10
29	Which	92	022	59	Been	41	0.10
30	An	82	0.19	60	Position	41	0.10

TABLE B: Wordlist" (2)

N	Word	Freq,	%	N	Word	Freq.	%
61	Also	40	0.09	91	Crew	29	0.07
62	Datum	40	0.09	92	Diving	29	0.07
63	Operation	40	0.09	93	Buzzing	29	0.07
64	Other	40	0.09	94	Buoy	28	0.07
65	Personnel	38	0.09	95	Following	28	0.07
66	Annex	36	0.08	96	Must	28	0.07
67	Compartment	36	0.08	97	These	28	0.07
68	Force	36	0.08	98	Life	27	0.06
69	Their	35	0.08	99	Surfacing	26	0.06
70	Authority	34	0.08	100	Treatment	26	0.06
71	Some	34	0.08	101	Being	25	0.06
72	Sublook	34	0.08	102	Made	25	0.06
73	No	33	0.08	103	Signals	25	0.06
74	Operations	33	0.08	104	Subcheck	25	0.06
75	Report	33	0.08	105	Underwater	25	0.06
76	Submiss	33	0.08	106	Such	24	0.06
77	Accident	32	0.08	107	Survivors	24	0.06
78	Fitted	32	0.08	108	Vehicle	24	0.06

78	Fitted	32	0.08	108	Vehicle	24	0.06
79	Subsunk	32	0.08	109	Within	24	0.06
80	Water	32	0.08	110	Safety	23	0.05
81	But	31	0.07	111	Sub…..	23	0.05
82	Conditions	31	0.07	112	Depth	22	0.05
83	National	31	0.07	113	Normally	22	0.05
84	Out	31	0.07	114	First	22	0.05
85	Units	31	0.07	115	General	22	0.05
86	Arrival	30	0.07	116	Resumed	22	0.05
87	Information	30	0.07	117	Spendless	22	0.05
88	Sonar	30	0.07	118	Aircraft	22	0.05
89	Stores	30	0.07	119	Appointment	22	0.05
90	Use	30	0.07	120	Before	22	0.05

From this wordlist we are going to focus on this paper in two common nouns: escape and rescue . These nouns will provide us of some lexical information provided by their concordances as well as their pedagogical implications. From these tables of "wordlist" we can point out some important word classes. It could be useful to consider words into two main categories, closed and open. Open classes of words refer to lexical words. They are constantly changing their membership. These are nouns, adjectives, full verbs and adverbs. Closed words comprise classes that are finite, with a membership that is relatively stable. They are sometimes referred to as grammatical or function words. These are the pronouns, determiners, primary verbs, modal verbs, prepositions and conjunctions. From this essential base, we are going to study these general concepts in this particular subfield, providing a framework of analysis.

Considering the closed class, firstly we can revise pronouns. Their referential meaning will be provided by the linguistic or situational context in which they occur. Falling into personal, reflexive, possessive ,relative ,interrogative ,demonstrative and indefinite, in this work we can only observe the use of the personal pronoun "he" with a frequency of 16 times,

"they" (16) and the object case pronoun "her" with a frequency of 14 times. There are not a wide ranging of pronouns used in this subfield, except for the relative pronouns "which" and "that" with a high number of frequencies along the work. Secondly, we can describe determiners. These words depend on a reference, normally a noun. There are three types, depending on their position in the noun phrase in relation to each other: Central, predeterminers and postdeterminers. In particular, we will pay attention to the central determiners which are the commonest in this study. So, the central determiner "the" has the highest frequency in this work, with 1505 times, followed directly by the indefinite article "a" .Like the definite and indefinite articles, there are other determiners which can occur with singular count, plural count, and noncount nouns. In our pilot study we find out "that" with a frequency of 103 times and "this" with 96 times. So, these words have been important in the development of this particular subfield. Thirdly, we will focus on one of the most important word categories. A verb is one of the elements in clause structure, like the subject and the object. They can be divided into three main categories, depending on their function within the verb phrase: full, primary and modal verbs. In this section, we will only deal with the primary and modal verbs. The primary verbs are:" Be, Have and Do". They have functions as main verbs or auxiliaries. In our study, the primary verb which is used is:" is, are", with the highest frequency of all the verbs in the study. Modal verbs are also important (see table A.11-13). There are two main classes of modal verbs depending on their meaning, with a intrinsic modality or extrinsic one. In our study, the use of the verb "may" denoting possibility has characterized the clear-cut intention of this lexis. There is not necessity, permission or ability. "Salvage and Rescue" is a "possible" task in its global meaning. A second modal verb in this study is "should" , as a tentative inference of the fact.Besides, the use of future simple with the use of the auxiliar verb "will"is a common feature of the style of the text in order to predict the future situations submariners can face in different disabled accidents. Considering

verb tenses, the use of the passsive voice is quite general. It helps to avoid the constant repetition of any subject, to put emphasis on processes and experimental procedures.

Different prepositions are also used along this topic with a high frequency:" of, in, for, on, from..."together with the copulative conjunctions "and, but". As their name imply, conjuncts serve to conjoin two utterances or parts of an utterance.

Considering the open class of words, we can start mentioning the nouns. Nouns can fall into different classes: Common count (concrete, abstract), common noncount (concrete, abstract) and Proper nouns. In our work, we find two main types of nouns, namely common count concrete nouns, such as "Submarine(261), crew, datum(40), personnel", etc. It is important to pin point that the most part of nouns belong to the "Common Noncount Abstract" section, *such as:"*Rescue(204),escape(172),recovery(74), ratification(19)...

Considering adjectives, we can remark the main four features that they generally share:

They can freely occur in attributive position, in predicative position, be premodified by the intensifier "very" and they can take comparative and superlative forms. Those adjectives which do not follow these four features are not considered as Central adjectives but Peripheral adjectives. In our particular subfield, the adjectives are peripheral, due to the fact that they can not be gradable. For example: "Medical (52), possible(52),capable(19),naval ,tactical , responsible ,suitable"...Besides, these adjectives are attributive only, and they belong to the restrictive class. These adjectives restrict the reference of the noun exclusively, particularly, or chiefly.

Taking into account Full verbs, we can remark that these verbs have four morphological forms: base form, -s form, -ing particicle and –ed form. In this study, we can remark some verbs such as"subcheck, sublook, comcheck, carry, take, accomplish, achieve...".Some of these full verbs share a special feature which is the use of a particular Latin origin prefix:

"sub/com" and provoke a special linguistic context very specific of this subfield. They are compound verbs.

Finally, we can mention "Adverbs" which range from "board", "particularly" to "absolutely".So, the most conspicuous examples of adverbs are derivational adverbs, with the suffix –ly,by means of which new adverbs are created from adjectives.

Frequency data can no doubt be used as criteria for syllabus selection and grading. It provides a general view of vocabulary items to be incorporated into a course, as well as the criteria to establish the relative/high importance of items in a course design. Table 1 below shows the relative frequency of items in the corpus. There are **700** items occurring only once, there are only **260** occurring twice, **150** occurring three times, **120** items occurring four times, etc

Hapax Legomena or Hapaxes: Words which occur once . As quantitative indicators of style, they are related to vocabulary richness and precision, and have been used in stylometric studies (Holmes 1944: 97-98). Hapax Dislegomena: Words which occur twice in a text.

In our corpus a great amount of words are used once or twice. These particular items may not matter in terms of oral communication but could be crucial in our written study of the language of Submarines. Despite the fact that there are scholars who consider that learners learn high frequency vocabulary before they learn low frequency vocabulary (Read 1988), in our particular case, I believe it is feasible for our students to learn hapaxes. This is so firstly considering that our submariners academic English level is intermediate; and secondly, they should improve their linguistic skills, through the use of accurate and precise technical vocabulary, compiled in the low frequency wordlist. (see table B), not in the high frequency wordlist with which contains many articles, prepositions, modal verbs and nouns.

TABLE A.1: Concordance of "Rescue" (part I)

N	Concordance	Word No.
177	s and all other manpower. b. Escape and **Rescue** specialist's assistant. He should	20.199
178	cape a. Recompression facilities in the **rescue** force may be overwhelmed by the n	21.360
179	by parachute (UK SPAG) When escape and **rescue** experts deploy to the Recovery Fo	21.469
180	FT CHANGE 2 NATO UNCLASSIFIED CHAPTER 8 **RESCUE** PHASE 0801 General a. The **Rescue**	21.632
181	PTER 8 **RESCUE** PHASE 0801 General a. The **Rescue** Phase starts with the arrival of	21.638
182	e starts with the arrival of any of the **Rescue** Gear Ships and the deployment of	21.648

1	engaged in the recovery of escapees and **rescue** of personnel from a distressed (f	203
2	information.) Part II Technical data on **rescue** equipment and facilities on board	258
3	edures for the recovery of escapees and **rescue** of DISSUB personnel during operat	304
4	) Call-out and assembly of recovery and **rescue** forces (2) Recovery and treatment	326
5	Recovery and treatment of escapees (3) **Rescue** of DISSUB personnel b. Provide in	335
6	0103 Aim The aim of the recovery and/or **rescue** operation is to save the lives of	374
7	by the timely assembly of recovery and **rescue** forces at the datum. NATO UNCLASS	415
8	ral philosophy for submarine escape and **rescue** is to provide a reasonable level	467
9	E, at least, for the less likely. While **rescue** is the preferred method of saving	491
10	, however, contribute towards escape or **rescue**. 0106 Policy and Concept of Opera	556
11	pt of Operations A submarine search and **rescue** operation may have up to six phas	567
12	N b. Search c. Assembly of Recovery and **Rescue** Forces. d. Recovery of escapees.	594
13	cue Forces. d. Recovery of escapees. e. **Rescue** of DISSUB personnel. f. Medical t	601
14	osing of the senior survivor and CRF. A **rescue** phase may last a number of days d	645
15	and facilities at the surface. However, **rescue** and recovery are not exclusive; a	663
16	N escape may well be conducted during a **rescue** or before the **rescue** starts given	677
17	conducted during a **rescue** or before the **rescue** starts given a deterioration of D	681
18	ISSUB conditions. The preference is for **rescue** and the CRF should only advise es	693
19	should only advise escape, if to await **rescue** will increase the hazard to the s	704
20	as been raised the Submarine Search and **Rescue** Authority (SSRA) for the area in	796
21	erating will co-ordinate the Search and **Rescue** Operations in conjunction with ap	817
22	rations in conjunction with appropriate **Rescue** Co-ordination Centre(s). 0109 Ass	823
23	entre(s). 0109 Assembly of Recovery and **Rescue** Forces While the search is procee	832

24	tion and deployment of the Recovery and **Rescue** Forces in accordance with the wis	854
25	actions are already part of the initial **rescue** force call out). SSRA will send f	944
26	sider redundancies when deciding on the **rescue** assets to be called up as inciden	976
27	pen on board the DISSUB or the selected **rescue** assets during their transport whi	993
28	N information as to the availability of **Rescue** Systems across the world. Such ad	1.016
29	N Team to advise the OSC, CRF and other **rescue** forces. This Team may include sub	1.053
30	icers: a design constructor: escape and **rescue** specialists and a media advisor.	1.069
31	be provided by the nation providing the **rescue** forces but this will need to be s	1.086
32	nd dimensions; b. Details of escape and **rescue** fittings; c. ELSS re-supply detai	1.126
33	ographs of submarine hull, fittings and **rescue** seats; e. National Next of Kin/Pr	1.140
34	ed life saving operations can commence. **Rescue** is the preferred method but escap	1.216
35	is disposal to those most in need. 0112 **Rescue** of DISSUB personnel If conditions	1.333
36	personnel will wait to be **rescue**d by a **Rescue** Vehicle (RV).This operation may t	1.356
37	pared the tower accordingly. During the **rescue** the **Rescue** Vehicle can deliver EL	1.416
38	ower accordingly. During the **rescue** the **Rescue** Vehicle can deliver ELSS to suppo	1.418
39	lives will be saved by both Escape and **Rescue** from the same DISSUB. The Recover	1.455
40	from the same DISSUB. The Recovery and **Rescue** phases may therefore take place i	1.463
41	preventing for the CRF 0113 Escape and **Rescue** Resources and National Contact Au	1.486
42	F all STANAGs applicable to the escape, **rescue** and survival of personnel from a	1.528
43	nvolved in submarine search, escape and **rescue** are at ANNEX 1C. They are intende	1.559
44	very of equipment – typically submarine **rescue** vehicles and associated equipment	1.725
45	tems. Australian Submarine The tethered **rescue** vehicle component of the Australi	1.791
46	cue vehicle component of the Australian **Rescue** Vehicle (ASRV). submarine **rescue**	1.797
47	ralian **Rescue** Vehicle (ASRV). submarine **rescue** system designated "Remora." Blink	1.801
48	rs to continue escape activity or await **rescue**. It is normally drawn from dedica	1.857
49	Y for co-ordinating and controlling the **Rescue** Forces (CRF). recovery of escaper	2.041
50	(CRF). recovery of escapers and/or the **rescue** of the crew from the DISSUB. Norm	2.049
51	for diving. (Annex 5A) Deep Submergence **Rescue** Vehicle) A manned RV operated by	2.379
52	capable of (DSRV) conducting underwater **rescue** of personnel from suitable equipp	2.394
53	safely in the submarine whilst awaiting **rescue**. Stores include such items as car	2.522
54	D' via Escape Towers by divers or other **rescue** assets. They may also be delivere	2.566
55	They may also be delivered 'dry' by the **Rescue** Vehicle. Escape Any method by whi	2.576
56	SMERLO The interim Submarine Escape and **Rescue** Liaison Office. Temporary NATO le	2.776
57	O launch, handle and recover underwater **rescue** (LARS) assets in a controlled man	2.812
58	ny port from which submarine escape and **rescue** systems and equipment are dispatc	2.855
59	Ship (MOSHIP) A vessel used to carry a **rescue** vessel to the scene of a submarin	2.882
60	accident, and from which the RV, or any **rescue** submersible, operates. Certain US	2.952

61	command of the submarine NATO Submarine **Rescue** System Submarine **rescue** system be	3.097
62	NATO Submarine **Rescue** System Submarine **rescue** system being developed by a conso	3.100
63	OV can also clear an escape hatch for a **Rescue** Vehicle and Pod Post ELSS. Remote	3.446
64	Le and Pod Post ELSS. Remotely Operated **Rescue** Vehicle A manned underwater vehic	3.454
65	launched and recovered. RORV is used to **rescue** DISSUB personnel via an escape to	3.483

Lexical and pedagogical aspects to consider:

From a lexical point of view we can state that with the noun Rescue, there are some important collocations which should be used and learnt by our students:

-rescue equipment, rescue seat, rescue policy, rescue assistant, rescue gear ship…

These lexical items should not only be studied in relation to other words (paradigmatic relations, in terms of synonymy, antonymy, etc) but also related to its significant context for syntagmatic relations, that is, collocations.

Concordancing has a number of applications for syllabus design. It reduces those uses of an item to be presented for learning to those which actually occur in the corpus, eliminating time consuming attention to other uses. It can also identify which uses of items to teach and to identify the uses which are not found at the main dictionaries, such as:

-**Rescue Gear Ship,** a nominal group which is highly used in this particular subfield and whose exact meaning and combination is not found at any dictionary.

Another important application of Concordancies from a pedagogical perspective for syllabus design and technical language is in showing the syntactic patterns in which words occur . In this particular technical subfield the structure of the sentences is based mainly on passive sentences with an explicit verb in the passive voice :

"escape and rescue equipment are described in general..."

In a similar way, we are going to analyze other important nominal group .

TABLEA.: Concordance of "Escape" (part I)

2	Concordance	Word No.	
1	hy The general philosophy for submarine **escape** and rescue is to provide a reason	465	
22	ompartment **escape** This is the method of **escape** in which the entire compartment i	2.118	
23	d or buoyant ascents depending on their **escape** equipment. **Escapees** should arrive	2.162	
24	et' by pressure tight Pods 'posted' via **Escape** Towers by divers or other rescue	2.560	
25	delivered 'dry' by the Rescue Vehicle. **Escape** Any method by which a person leav	2.578	
26	agencies. **Escapee** A person who makes an **escape**. **Escape** Gear Ship (EGS) Any ship	2.607	
27	. **Escapee** A person who makes an **escape**. **Escape** Gear Ship (EGS) Any ship nominate	2.608	

we analyzed these concordances and we identify again the specific

use of a nominal word which is not found at any dictionary:

" **Escape Gear Ship".** All the positive aspects of concordancies can be also used with this word.

3 Conclusion

This paper has shown how through computerized text analysis can help teachers and researchers in the lexical and pedagogical implications of text analysis and teaching. Firstly, researchers can find out new lexical applications of some items, which in the dictionaries are not reflected, and show the specific technical and lexical combinations of these particular items in this particular subfield . This also provides to our students with a particular and exact lexical scope ranging from technical expressions to "genuine" technical items of this particular field.

In addition, we can ensure that the language we present in their courses correspond to the language that is actually required by submariners in their specific purpose area.

the data-base computer text-processing has provided criteria for:

The selection of and grading of items for the syllabus of an English for specific purposes book, mainly the hapaxes and the authentic contextualization of some specific nouns worth-considering, such as rescue, escape… which can have a single or double pre-modification, and are not found in a good dictionary because it is very technical and specific the concept provided. The development of specific compound verbs in this subfield through the addition of some Latin origin prefixes is also remarkable.

It has been pinpointed that the hapaxes phenomena in this pilot study have shown the importance of their learnability, due to its specific technical meaning and the particular learner needs. They have not been avoided as in most English academic learning-teaching projects.

The importance of authentic material has been crucial for the development of this pilot study. It provides instances for direct incorporation for a future work about "English of Submarines" and instructional materials. It has been observed the great amount of Latin origin words not only in adjectives, but also in nouns (annex, data…) which reinforces the idea that this specific sub field has a cultured language .

As far as style is concerned, the use of coordinated sentences has provided a clear interpretation of the sentence meaning , together with a tendency towards a balanced rhythm, as an example of explicative text typology.

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THE WAY TO DISCURSIVE COMPETENCE

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Abstract

Eternal problem of language and reality correlation is nowadays solved by involving individual cognitive system(/personality) into discursive processes.
Discourse viewed from linguistic angle is a text functioning in a communicative situation.
The text analysis tends to deviate from its structural semantic trend to approach corporal functioning in both artificial and natural methods of text production.
Denoting the text as dynamic interface of functional and pragmatic fields we attempt to specify it as a product of informational exchange undergoing coding decoding and copying.
We put forward the assumption that presentation of a certain information is performed not by a separate semiotic unit, but by the whole system of codes as well.
Our approach to the text originates from initial mentally chosen direction of idea to speech (textual) activity, provided that the will of communicators participates between these two marginal actions.
We treat personality from the point of view of mind operation through realization of self consciousness as a part of cultural interface with modern world.
Discursive competence, which is based on linguistic, situational and cultural awareness of communicants, is considered as the key question of informational exchange.
The suggestion to train functions as one of the main priorities can be offered on the basis of Global Concretization approach, which presupposes activating various features of linguistic system with reference to interpretation of its user's mental and emotional functions and the appropriate faculties of human intellect.

Key words: cultural interface, discursive competence, realization of consciousness, global concretization.
Russia

I. INTRODUCTION

The article is an attempt to view the text as realization of discursive processes in global context of personality in discourse modeling.
We search for developing a communicative space for concretization of knowledge and suggest training model on the basis of global concretization approach which correlates with a key question of communication
The article is constructed according to the following plan:
-Globality of text structure
-Concretization of knowledge
- Modeling and communication
In conclusion we propose to globally treat discourse as a dynamic process of speech production, perception and comprehension with a key task of achieving linguistic awareness. In connection with this training should be modeled to excel in discursive activities as a part of cultural interface

II. DISCOURSE AND GLOBALITY OF TEXT STRUCTURING.

2.1 Definition of Dicourse

Discourse is a special type of communication which runs in tandem with thinking processes.

On the basis of computational investigations of a dialogue system the following statements can be made: 1. Discourse is a two sided phenomenon with essential component of interfacing (no matter constructivism or conflict)

2. Assumptions and packing of information stipulate understanding and play an essential role in producing and processing of discourse,

3. Being planned discourse should combine rheutoric and intentionality.

4. Creative nature of a discourse leads to integration of monologue and dialogue system

2.2 Main Trends in Discourse Research

Two main trends are noted in discourse research:

- investigation of informatively organized text and its coherence which presupposes implications
- correlation of context and certain semantic structures

According to the informational tendency the coherence of discourse is based on semantic relation between information and successful utterance.

Intentional trend claims that discourse coherence originates from intentions of discussants and understanding depends on recognizing the intentions.

Instead of arguing we would prefer synthesis of both statements adding to them global approach both to discourse and discussants

2.3. Biospheres approach to mental processes

Biospheric approach in a contemporary scientific terminology is noticed in such terms as mental field, textual space, which leads to comprehension of space interface with global structure of modern civilization Information is viewed upon as interaction of different fields and bearer of information as a certain part of global sphere creating plentitude of genre spaces, dialogue spaces (Isupov,2001)

J. Dismore calls reality one more space of united utterances one of which may float in a certain discourse under condition of a given context.(Dismore 1987)

2.4 Intellectual Architecture of Discourse

As human intellect is "severely domain specific" its activity may be seen as mutual performance of human mind and different experiences taken from the environment.

Consisting of different cogniotypes (mental frames) ICS brings into operation the main propulsion unit (will) to achieve awareness in perception or production of information to participate in discursive processes

Two faculties of ICS enter the discursive process simultaneously: cognitive and communicative. Communicability is awareness of will to create an utterance. Utterance is a concrete part of global process of text activity.

Text activity is based on triple foundation:

Man- Language-World

Language = (Knowledge +World)+ Mind

Essence of any language is discovered in text activity and can be expressed this way (Figure 1)

T.A. = SI+W+CD+IS+CT

Of Sender - Of Receiver

INTERPRETATION, where:

TA – text activity,
SI – speech intention,

W – will,
CD – cogniotype of domain,
IS – internal speech,
CT – certain text.

The language can no longer be a methodologically overpowering structure as it is a dynamic functional and pragmatic corpora based on mental abilities of ICS.

Figure 2.
ICS = (CD + I) + (TA + W) + (IS + CT)
In this long formation SI+I+CD is realization of mind operation
IS+CT –realization of psycholinguistic functions of ICS
Due to projective faculty of mind (to be more exact by means of will and imagination) mental fields embrace not only components of present world or past experiences(by means of memory) they enter a distant "imaginary" worlds represented by the clusters of cultural texts (Baranov, 1998).
So, Language is functioning not only as a means of transmission of thought, but as an instrument of thought formation. It is a constructive element in presentation of global knowledge.

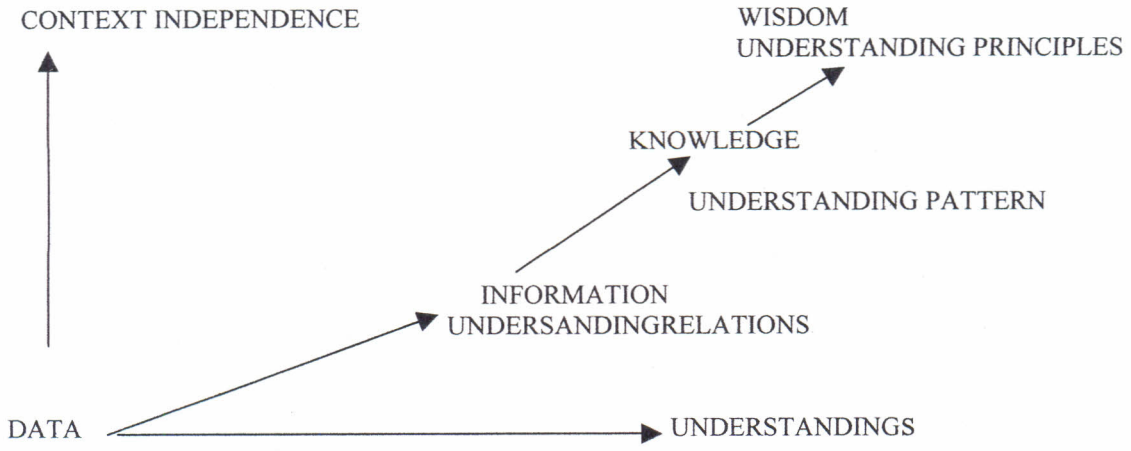
Figure 3.

Knowledge(K)= Knowledge of a separate cognitive system
ICS1* Cognitive System of the World (ICSW).

2.5 Concretization of Knowledge
The Sequence >Information>Knowledge >Wisdom represents an emergent continuum.
Although data is a discrete entity the progression to information knowledge and finally to wisdom does not occur in discrete stages of development One progresses along the continuum as one' understanding develops (Bellinger,2003)
Knowledge is often defined as information. But quite impressing are observation of Flemming :

-a collection of data is not information
-a collection of information is not knowledge
- a collection of knowledge is not wisdom
- a collection of wisdom is not truth

Figure 4.



Like water, this raising tide of data can be viewed as an abundant, vital and necessary resource. With enough preparation we should be able to tap into that reservoir – and ride the wave- by utilizing new ways to channel raw data into meaningful information.
That information, in turn, can then become a knowledge that leads to wisdom.
(Alberthal, 95).
For quite a time knowledge was referred to as a collection of data.
Now that knowledge management is widely practiced the idea that information, knowledge and wisdom are more than simply collections sounds quite reasonable. Rather the whole represents more than the sum of its parts and has a synergy of its own.
Without context we begin with data which is just a meaningless point in space and time.
Being out of context means being without a meaningful relation to anything else.
When we encounter a piece of data, if it gets our attention at all, our first action is usually to attempt to find a way to attribute meaning to it. We do it by associating.
Human beings are predictably consistent. So, knowledge management should be one of many cooperating means towards the final product of discursive activity –text unless the job turns out to be corporate.
Understanding immediately correlates with integrity.
Knowledge can be defined as a part of one's experience.
When one is able to amass sufficient data and information to form a complete pattern I understood I would have knowledge.
There is another part of knowledge about the words of our language, its semantic, syntactic and phonological properties. Acquired from early in life this information is stored in a component of long term memory and is usually referred to as mental lexicon (Turennaut, 1998).
Probably this lexicon is an obstacle for a second language learner, as during speech processing the mental lexicon is accessed automatically at a very high speed and awareness of native language lexicon stands in the way of a new one.
Native speaker is not aware of his cognitive control over the lexicon and processes the information through coding and decoding.
Foreign language learner in the attempt of logical analyses to perceive syntactic structures fails to produce a successful utterance as phonological information is available 40 millisecond after syntactic properties have been received. Processing of speech overtakes logical analyses.
So, Knowledge management would be the capture, retention and reuse for foundation for imparting and understanding how all these pieces fit together and how to convey them meaningfully to some other person.
Preciseness of knowledge organization plays an essential role in discourse modeling; absence of it causes communication failures.

III. MODELING AND COMMUNICATION PECULIARITIES

3.1 Discourse modeling

DM is closely connected with knowledge management and its value is related to the effectiveness with which the managed knowledge enables the discussants to deal with awareness of present discursive activity and effectively envision and create the future one.

Discursive activity – communication on textual level is a simultaneous process of speech production and speech perception.
Awareness of thinking processes is verbalized by means of such cognitive functions as planning, assumption, and conclusion.
Process of inner verbalization is also taken into consideration. Sentence- image is not always expressed in words (may be pictorial explication) in this case intellect starts operating on casual level: accusation, approval, fantasy, idle thinking.

A minor message, remark or reminder may be enough for verbal realization of causal function of ICS functional unit in verbalizing process is cogniotype which correlates with a text or a group of texts of a certain domain.
For example domain Sea Disaster is formed by various discourses: fiction, educational, institutional, professional etc.
Professional discourse of domain "sea disasters" is considered within
Specific frames: collisions, the list of the vessel, grounding, fire, explosion, hull damage troubles in the engine room, injuries, and fatalities

Within the frames of Sea Disaster logical entity which is organized in time and space appear implications, which become logically accessible under certain orchestration of discourse. They are:

1. Fear- dangerous /not dangerous
2. Significance of event for
   -sender –receiver
   -role of witness
   -role of participant
3. Desires- to rescue/ to survive,
   -to satisfy commercial interest
   -to accuse/to reject accusation

The notion disaster is specified with terms accident / Event which involves personal injuries or fatalities incident event connected with damage to cargo or equipment
Term **near miss** is widely used denoting incident or accident which could have happened.
In general communicative context of marine professional discourse of domain Sea Disasters two valuable concepts are behind the text format:
-Safety of crew, cargo and equipment (Safety first)
-Search for usefulness of the event which could have occurred
(Near miss gives a learning opportunity)
Transferring of language clusters from static into dynamic of speech production and processing is carried out due to coinciding the interests of ICS and cogniotype content which in turn matches textual format. It would not stand to reason to expect full coincidence of expected results from producer and receiver of the information but strict organization of language clusters in speech producing may lead to rather interesting interpretations.
Analyses of interpretations confirm the hypothesis that the text is a dynamic system which is discovered in the process of transposing different plentitudes of elements. Transposing is followed by multiplying meanings and may be called derivation which is apt to self organization.

3.2Training Modeling

As the process of knowledge presentation, processing and perception is activated by cognitive and communicative functions of ICS, inner experience, the image and relationship with others play an important role in training process. Expression of Self is related to the social – Other (Shi-xu, 1995). Mind is proved to be of discursive nature, since it relies on semiotic in particular linguistic, textual material (Bahtin, 1983), our inner thinking is discursively organized and requires our attention in analyzing speech production.
Among numerous attempts to find the definition to our approach we consider "global concretization" the most suitable, as it is based on discourse self organization properties and synergy of using information and lexicon.
We suggest 3 stages of speech training:

1. "Propulsion" (starting getting and into the rhythm.)
2. Restoration of individual cognitive system (organizing knowledge) - very individually. Adaptation to natural speaking (speaking by instinct).

The method of global concretization is a mechanism of involving, the audience into textual interpretation activity, organizing and managing the dynamic conversational stream, leading it to self-organization.

Training is orchestrated by filling mental spaces with data which are converted into information in the process of didactic discourse. Rotated information merges into construction of cogniotype which enters natural speech within the frames of given contexts. Further processing of discourse builds up new contexts.

From chaotic processing originates synergy of text order. The question how the various strands fit together? The answer refers to the question of mental processes where there is a diversity of the opinions on mind operation.

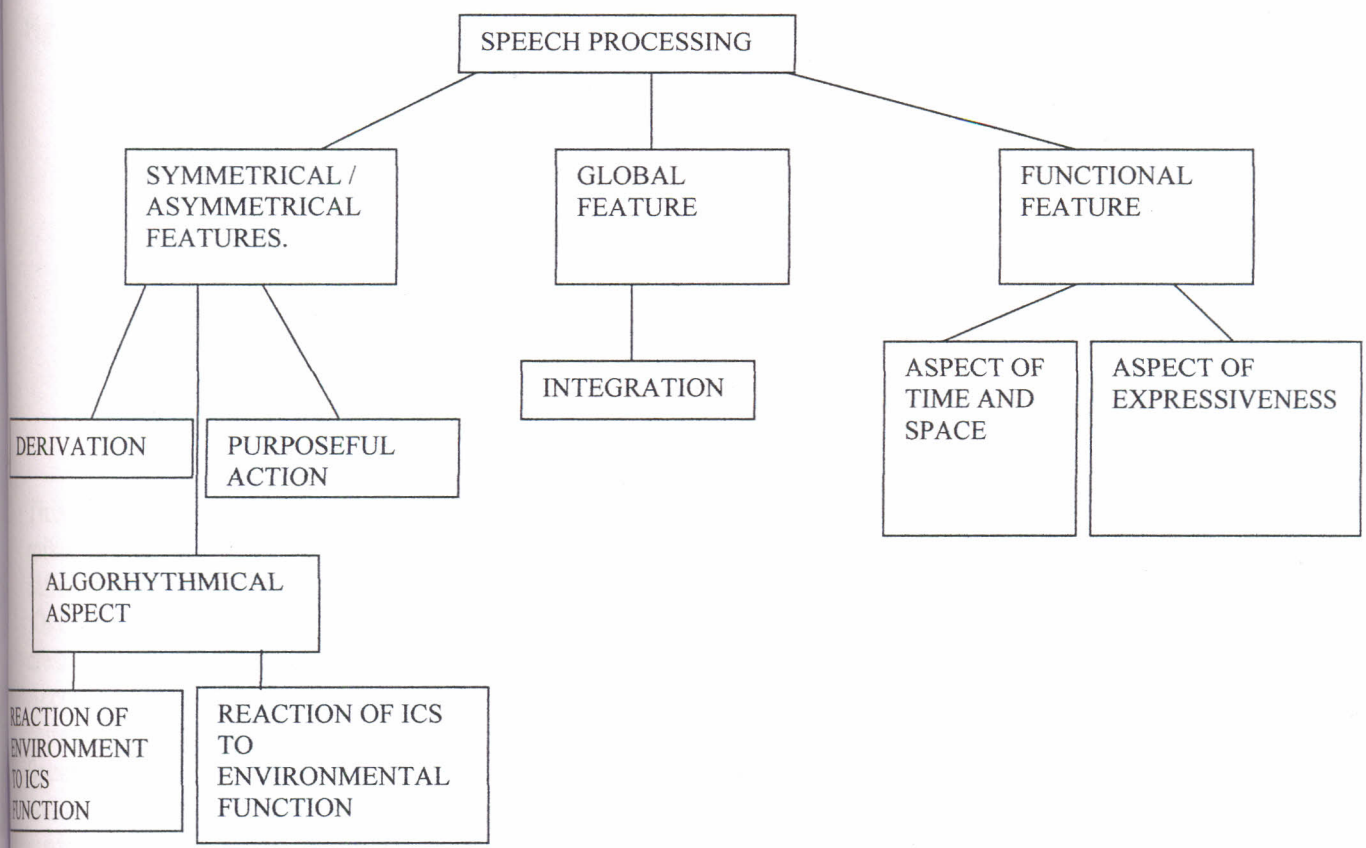
As linguistics is an empirical science, our decision is not to argue any postulate but try to function using syntactic structure of thought compositionality (Fodor, 2001) and criteria of intentionality in applying to mental processes which are classifiable as conscious and unconscious.

Assumption that (un)conscious mental processes is just a causal sequence of (un)conscious mind (Fodor 2001) proves that causal function of intellect (fantasy, remembrance) mostly runs idle.

It gives us an opportunity to engage causal function by involving the imaginary faculty of mind in discourse modeling while training. Imagination excites memory of soul which keeps the past and presents some kind of creativity. Construction of cogniotypes is exercised by mechanical memory which can be long-term and short-term memory. Activating of both types of memory provides more productivity in speech processing.

The systematic analysis of discourse sorts out the following features:

Figure 5.



It is impossible to draw a clear line between bringing a thought into being and encoding the thought – putting it into words, but it is possible to watch and "to catch" foreign languages learners' perceptive for speech producing state – a kind of Synesthesia of cognition and communication.

To smoothly transform didactic motivation of trainees to answer the lesson's material into natural pragmatic motivation to speak to persuade and influence others, insight of the learners' thinking ability and emotional state is required.

"Catching" states has to do with managing ones attention. Human beings are so oddly constructed, that they allow their attention to have managed instead of being aware of their concrete tasks at the moment. It can be explained by faster operation of right (imaginary) hemisphere of the right hemisphere of our brain if compared with the left (logical) one. In mental operation first is perceived global structure (at a very high speed), than attention is drawn to concrete details. The text below is quite readable inspite of the mess in its organization.

Figure 6

ABILITY OF OUR BRAIN AND INTELLECT

Read the text up to the end without paying attention to its strange arrangement:

Acocdring to the ivenitsagiton of the Egslinh seicntitss ograinzotain of word is lses ipmotrant.
Olny ttthe fsirt and the lsat letters should be positioned proeplry.

The ohter part may be a nosnsene, but it will remain raedlabe.
Bceusae we fucos on the whole word, but not as speartae lteter.

.

As any life sphere undergoes evolutionary processes (Individual Cognitive System /human being/ is never static and being interconnected with life processes absorbs analogues from environment.

World is apt to self organization, self discipline the realization of which is due to the ability of nature itself to select the best option of the broad spectrum of possibilities. Realization of cogniotype is a discursive action based on corpora of texts selected by ICS as per domain requirements.

Every concrete text within the frames of textual activities as integrity of production, processing and understanding should be modeled from top –down procedure, not excluding bottom – up procedure as well. While training priority should be given to learning text functions.

As an example we can take one text of cogniotype "Environmental Protection" as a global structure and make references to different discourses:

Text

Problem that humanity faces to-day is not only that of typhoons, flooding and global warming in Europe, Asia, Africa or America. It goes further: Should one let industries and nature coexist? When at school children are taught different sorts of trees, birds and animals and different kinds of transport they must be instructed how to be on friendly terms with all aspects of life. The children should adopt a habit of being careful of cars and be careful for environment. And the children do feel themselves part of the nature. So must adults, especially those working in the marine sphere.

Depending on social status of interactants the global text can be subdivided into several subtexts: peculiarities of marine sphere, environmental protection, weather phenomena, nature care, school education, problems that humanity faces to-day.

In narrower specification discourse may trace modern shipping, usage of non toxic painting to save marine species, fuel consumption and energy saving on board,

Division of subtexts can be of versatile classification: narratives, descriptions, documents, claims, instructions, warnings, etc.

The most important in the textual activity is intersection of discourses (Khristeva, 2000) as it provides development of communication,

Dynamism and creativity of discourse with respect to reality offers versions to reality thereby imposing particular structures on it. (Baranov, 1998)
Main principle of class activities is implemented in sharing emotions, formulating causal understanding, reproducing memory. All these action assist to flexibly merge into social creativity.
Social creativity is connected with redistributing of activities in trainer- trainee relationship.
Trainer is modeled not as an active part of interaction, but as a conscious initiator of communicative process.
Training is orchestrated as an integrity of global context: (Group + authentic material and a concrete ICS+text) in synergetic process of declarative knowledge representation and procedural knowledge functioning which leads to linguistic awareness.

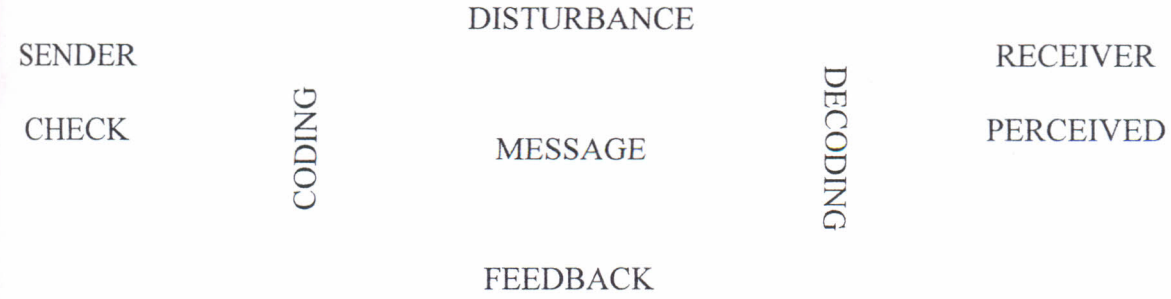
3.3 Communication

It is a well known fact that communication is transferring signals from one person to another with the intention of bringing about understanding, a certain opinion or a certain response from the other.
Communication is exercised in 3 ways:

- Letters symbols and signals
- Verbal / statements , commands, requests, trains of thought, points of view, questions
- Non-verbal/behavior, facial expression, move, body language.

Communication has much to do with cultural differences. Different countries vary on dimensions that may influence communication. For ex, Norwegians are apt to individualism and people from Iran are known for their collectivism. Power distance matters much as well.
Communication is modeled as follows:

Figure 7.



This rather complicated formation may be affected by such destructive elements as misunderstanding , anger, frustration, stress, noise distraction, expectations, cultural or social influence.
Overcoming distraction by proper usage of language means and discursive markers leads to creating a successful utterance which brings about understanding.
According to the theory of cognitive dissonance (Festinger, 1999) the system of knowledge is compiled of separate elements which are in contradicting relations to each other.
Speech production is a process driven by cognitive dissonance itself to liquidate these contradictions and create so natural for human beings intellectual coordination of phenomena assumptions, opinions. So, appearance of dissonance is followed by an intensive communication.
Passive opinion of a separate ICS when entering discourse is spontaneously modified to a conceptual structure of an informational flow getting into "here and now" process of intellectual integration.
Psychiatrists call intellectual activity of a person "activity of a soul" intended to perceive and realize one's "I" (self).(Kursk,1999)

Self is striving to understanding of perceived.
We may define understanding as blending of speech production and speech perception within the field of central cognitive process which cause assumption, emotional tinge, attracting attention and other emotional and intellectual signs leading to acquiring a new knowledge.
The process of blending is unconscious but easily stimulated by various modeling means, such as discursive markers/As a rule, on the contrary, in addition etc./, discursive strategies and changes of communicative roles.
Blending is specified by dynamism and wholeness of mind (Sukhikh 1998)
Availability of ideas and utterances and their realization in understanding should be provided as the state (Mamardashvili 1997) and the text of communicators. Only then it is possible to get linguistic awareness and find the way to linguistic competence which in turn develops the skill of knowledge management.
Ability to create a successful utterance within the frame of a given context and developing new contexts can be called discursive competence achieving which should be a paramount task of speech training.
Option number one in training should be discursive functions: attracting and distracting attention, cohesion, contradictions confirmation, using appropriate strategies for making decisions in organizing discursive spaces.
Having acquired communicative strategies the learners easily make way in natural dialogue as if "automatically" selecting speech producing means because discourse is apt to self-organization, self- modification and self management.
Due to its synergy the language as a modeling system is able to find its optimal state in any external changes and spontaneously turn into any static formation.(Vasilkova,1999)
Management of discourse is performed by unity of such inner qualities as imagination, will, logic and emotional characteristics coordination of which belongs to inner speech.
Contemporary tuition concentrated on logical formation of utterance sets behind inner speech work.
Achieving blending of speech processing and perception is possible by developing thinking abilities (inner speech exercises) of the learners
While constructing the text the producer creates a receiver friendly structure in two ways:

Creatively/ from chaos to order/ as per the Universe structure

Artificially / professionally expecting the planned structure

Training should proceed from planned construction accepting a mess for creating a good order.
This is the way to achieving linguistic awareness which is a conscious motion of ideas, that is the way of thought to the source of its admission and reconstructing of this admission until it is shaped. The shape is a relation of various intellects.
Speech production undergoes 3 stages: semantic, extralinguistic and associative referring to a certain verbal communication (Komussarov,2000).
Certain text being a final product of text activity is nothing but combination and recombination of different data until it occurs as a decision made by means of inner modeling. The more awareness has inner modeling the better realization has a decision.(Alder, 2001)
Discursive competence is an ability to participate in a globally modeled dynamic process including logical, intellectual emotional and psychological aspects.
The way to discursive competence is paved by trainer and trainee while activating cognitive and communicative faculties of ICS in a socially determined discourse.

IV. CONCLUSIONS:

- Discourse is a special type of communication
- Discourse should be approached globally from the point of view of ICS (global context)
- Discourse should be viewed upon as a dynamic process of speech production, perception and comprehension

- Discourse modeling and training modeling should be a tandem procedure based on constructing and realization of cogniotypes of a certain domain
- Based on artificial intellect developing postulates Global Concretization training model provides naturalness for didactic discourse.
- Understanding of natural speech should be searched for while constructing a successful utterance which is achieved through linguistic awareness
- Discursive competence should be viewed and achieved as a two sides effort
- Inner speech and imagination should be taken into consideration while training
- Being well-organized on the one hand and bearing a spontaneous tinge on the other, training should focus on discourse modeling smoothly overcoming the boarder between didactic and natural communication.
- Anthropy of creativity will drive chaotic process of utterance organization to the order of speech production.
- Training functions should be option number one in attaining linguistic awareness.

Abbreviations

I – imagination
ICS – individual cognitive system (personality)
TA – text activity
SI – speech intention
W – will
CD – cogniotype of domain
IS – internal speech
CT – certain text

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V-ING FORMS IN ESP ENGINEERING TEXTS - PERIPHRASIS AND/OR TRANSLATION

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Abstract

The aim of this paper is to share the problems an ESP teacher of English might encounter while teaching V-ing forms to Engineering students. The reasons for this special interest arise from the abundance and versatility of these forms plus the fact that they have no single counterpart in the Bulgarian language. The author offers a cognitive approach to teaching and learning V-ing forms, based on the event image schema common to both languages. Periphrasis is used to apply this image schema. It assists both comprehension and production, but to different degrees. Translation is sparsely used at a more advanced level of achievement.

Key words: cognitive, event, image schema, transfer, periphrasis, translation

2. Introduction

My choice of this topic is problem oriented. In my experience as a teacher of English I have found out that Bulgarian students of English find understanding and using V-ing forms exceptionally hard to master. English V-ing forms have usages with no single counterpart in Bulgarian language. What makes things worse, is the fact that all concepts expressed by V-ings in their versatile use are expressed in Bulgarian with different grammatical forms, i.e. a native Bulgarian learner of English has a similar conceptual system and yet a much different grammatical background.

Naval Academy students fall into the category of adult learners. Knowles (1998) when introducing andragogy and the concept that adults and children learn differently, formulates the six core principles of adult learning *(1) the learner's need to know, (2) self-concept of the learner, (3) prior experience of the learner, (4) readiness to learn, (5) orientation to learning, and (6) motivation to learn.* Andragogy works best in practice when it is adapted to fit the uniqueness of the learners and the learning situation.

As adult learners of English, university students of English have a well grounded conceptual system which is based on their mother tongue. Another factor influencing the existing learning situation is their proficiency level of the target language. Naval Academy students have pre-intermediate to intermediate proficiency level. Practice shows that at these proficiency levels students tend to use their mother tongue as an implicit mediator when acquiring new lexicogrammatical knowledge. This fact should definitely mean that their first reaction when encountering V-ing forms is translation (be that oral or silent). Should comprehension be the goal of teaching, translation will be adequate as a method, however, when teaching the productive skills of speaking and writing, translation proves to be far from adequate. What is more, at times it can even be an impediment to acquiring certain usages of

V-ing forms. Translation activates L1 concepts and rules, resulting in learners' tendency to allow L1 interference with L2 production experience.

3. Theoretical background

I have chosen the theoretical assumptions of Cognitive Grammar, developed by R. Langacker in his fundamental work "Foundations of Cognitive Grammar" (vols. I&II) as a background for my in-class teaching methods. My reasons for doing so originate from the basic principles of andragogy, the most important in this case being: the self-concept of the learner (autonomous and self-directing) and the prior experience of the learner (resourceful mental models) (Knowles 1998). These two aspects of adult teaching and learning assign key positions to human conceptualization and the already existing conceptual system. Cognitive Linguistics states that language mirrors not the objective reality, but our conceptual world reflecting it. 'It is our conceptual world that is relevant to language and exists in language' (Langacker 2000). I find this claim to be of crucial importance to foreign language teaching, its importance being even greater in teaching language to adults, as they are 'more dependent on a conscious approach to the target language …' (Kecskes 2000)

Thus, we have to consider the concept of transfer in the process of L2 acquisition. Odlin (1989) gave the following definition of transfer: "Transfer is the influence resulting from similarities and differences between the target language and any other language that has previously been acquired". Any process accounting for similarities and differences is a cognitive process, therefore transfer is closely related to cognition. "There is a structural and conceptual level of transfer: The former is dominated by similarity and the latter is affected mostly by difference. Conceptual transfer occurs at a level where cognition and language touch." (Kecskes 2000)

The following conclusions can be drawn:

- Any language is concept based. This makes it conceptually specific. Therefore it can be assumed that the monolingual mind differs from the multilingual one.
- Language learning is thus a development from a monolingual conceptual system towards a multilingual concept of the world, resulting in (as Kecskes formulates it) a Common Underlying Conceptual Base.
- So any L1→ L2 development is language specific, and can at its extremes cause a clash between two cognitive systems. Whenever such mismatches occur, conceptual transfer takes place.

Language teaching is a conscious process of instruction, control and monitoring of this conceptual development. In the light of the above theoretical assumptions, translation can and will facilitate the process of learning where there is structural transfer, by merely mapping similarities of both languages. And, vice versa, it will impede language acquisition where structural differences occur. According to Cognitive Grammar, any such structural difference accounts for a conceptual difference. Therefore, in trying to acquire a new L2 structure which has no similar counterpart in L1, the adult learner should be assisted in the process of conceptual transfer. The question as to how this assistance is to be realized has different highly language specific answers. Translation will evoke conceptual interference by activating L1 structures. In my opinion, the best way is to use periphrasis as a mediating tool. However, this periphrasis should be made in such a way as to evoke basic concepts common to both languages. This way a teacher can guide and control L1 → L2 conceptual transfer in the form of mapping.

Teaching the complexity and versatility of V-ing use is a challenging experience. The starting point is a possible common conceptual definition. Cognitive Grammar gives such an explanation of the English V-ing form construal and provides a conceptual definition.

Langacker (1987, 2002) defines V-ing forms as complex atemporal relational predications. This conceptual definition includes two very important aspects of V-ings, which account for their versatile distribution:

- as a relational predication it is conceptually dependent and conceptually related to nominals, for there exists no energy transfer without an agent initiating it (at the least);
- as an atemporal predication it is meronymically construed, which, in my opinion, explains why they can be related to other verbs, or other relational predications, and facilitates their higher order abstraction.

Thus, the common conceptual basis for both languages is the fact that by being conceptually dependent verb forms V-ings will always evoke the idea of an event and its participants. So the mediating tool in this case should be a periphrasis to a simple event frame.

4. Approach

4.1 Justification

The concept as construed by the English V-ing form should be introduced the first time students encounter it. This means that when teaching the Present Progressive tense, a teacher should make sure students understand that a process is meronymically conceptualized when construed and symbolized with V-ings. It is very important that students realize this fact and are aware that while V-ings tell us about a part of the whole process, event participants are active and conceptually inherent. 'Event structure in terms of conceptual autonomy and dependence is a pre-linguistic conception grounded in everyday experience' (Langacker 1991) where its participants are assigned the 'archetypal' roles of: the *agent* - initiating transfer of energy to an external object, and its polar opposites: the *patient* - undergoing a change of state; the *instrument*- affecting a patient; the *experiencer*- effecting mental activity; and the *mover*- undergoing a change of location. I will further use the label 'A' for the agent, and the label 'B' for the other event participants in this polar opposition.

I consider the event image schema of a simple sentence, i.e. one with overtly expressed participants, as the prototypical V-ing use. In it the event participants are directly linked to the V-ing form, which makes them equally active. The presence of the copula is the grounding predication used to relate the meronymically construed V-ing to time. My thesis is that the V-ing, by being a meronym, is abstracted away from its time domain of conceptualization and as such cannot exist autonomously. What is more, it is this abstracting away (to form a part out of a whole) that accounts for the ease with which V-ings can undergo a gradual profile shift from a relational to a nominal predication in their sentential distribution.

4.2. How It Works

In this paper of mine I am not going to present exercises for all sentential usages of V-ing forms. My aim will be to compare different usages and show their equal conceptual base, because this is how students can relate concepts and understand how V-ings work. Class activities follow four steps:

- Reception - students are invited to read sentences and find the event schema expressed in different ways.
- Production_1 - students are given sentences with V-ing constructions and paraphrase formulating simple sentences.
- Production_2 - students are given an event schema in a simple sentence and are invited to paraphrase it using V-ing forms.

- Production$_3$ - different exercises: filling in gaps by formulating the V-ing construction, rearranging one V-ing construction to form another V-ing construction (e.g. with pre-positive and post-positive attributes,)

4.2.1. The intransitive event schema

	A + process + adverbial
V-ing construction	V-ing + noun = processual circumstances/conditions

Reception: Read the following sentences[1]. What is the common idea between the underlined pairs of words?

1. It may also be used to shut off various circuits in a cooler when *the machine is operating on part-load conditions.*
   The filter inserts will require changing, the period of useful life depending upon the *operating conditions.*
   To obtain the *best operating conditions,* the pump should operate over its range of maximum efficiency.

2. Where, for instance, steam-driven deck auxiliaries are in use, a separate auxiliary *condenser operating at about atmospheric pressure* will condense the incoming steam.
   Depending upon the *operating pressure*, one of two basically different types of water level gauge will be fitted on the boiler.
   Once *at operating pressure the boiler* may be put on load and the superheater circulating valves closed.

3. If one *space is operating at a low-temperature condition* at the same time the back pressure valve would be bypassed.
   Cloud point and pour point values are important for the system when considering the *lowest operating temperatures.*
   Vapour pressure is temperature dependent and therefore NPSH(net positive suction head) should be given for *the operating temperature.*

Production$_1$: Read the following sentences. Express the same idea using simple sentences. Use the words in italic for one of them.

1. When the steam pressure in the boiler is below the *normal operating parameters* the safety valves should be lifted and released. (the boiler is operating below normal parameters)
2. If, when a vessel is travelling at full speed ahead, an order for an emergency stop or astern movement is required then *safe operating procedures* must be ignored. (a vessel is operating without safety procedures)
3. The vane is shown held in the *ahead operating position* by oil pressure. (the vane is operating in ahead position)

Production$_2$: Read the following simple sentences. Fill in the blanks using V-ing constructions to express the same idea.

a. Filter inserts *operate* differently under different *conditions*.
b. A displacement pump *operates* on the *principle* of volumetric displacement.
c. Helical and spiral tubes *operate* on the same *principle*.

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[1]All the examples in this paper are taken from: *Introduction to Marine Engineering,* Taylor, D.A.

A. The filter inserts will require changing, and the period of useful life will depend upon the _____.
B. A displacement pump is shown diagrammatically in Fig. 6.3, to demonstrate the _____.
C. Other arrangements of the tube in a helical or spiral form are sometimes used, with the _____ being the same.

The examples above show intransitive verbs or intransitive use of transitive verbs, where the relational predication following the predicate in the event schema expresses an adverbial relation and the difficulty for the students is to relate the V-ing form to the noun which stands for this relation and implies it.

The other event schema, that of the transitive verbs occurs much more often and presents greater difficulty for its V-ing constructions are several and they have complex and versatile distribution in a sentence. Transitive verb event schema involves more than one participant.

4.2.2. The transitive event schema

	A + process + B
V-ing construction	B + V-ing + B
	B +V-ing
	V-ing + A
	A+ V-ing B
	A + V-ing + B
	V-ing + B
	V-ing + of + B
	A_o + V-ing + of + B
	A_p + V-ing + B
	A_p + V-ing + of + B

A few remarks are worth making here. These constructions can have all possible syntactic positions. Some of them are 'almost' synonymous and can appear interchangeably with a very slight shift of meaning, some of them are not interchangeable and can appear in certain positions only. These facts have been widely discussed in the various theories of language, each theory trying to explain them within its theoretical framework. Traditionally V-ing forms are divided into 'gerunds' and 'participles', where the term gerund stands for the V-ing uses occupied by nouns, and the term participle stands for its other uses. Generative Grammar also distinguishes between participial and gerundial uses of V-ing constructions, classifying them into adjectival and nominalized constructions (Huddleston 1984, Abney 1987). Cognitive Grammar, as I have discussed above, postulates two main predications: nominal and relational, and V-ing forms are classed as complex atemporal predications. Special attention is paid to the constructions termed by GG as nominalizations. Cognitive grammarians (Langacker 1991, Taylor, J.R. 2000) view the markings *('s; of; by*) that accompany these nominalizations as instances of periphrasis. Their main idea is that the manner in which the image schema of an event is represented prompts the way this event is construed - nominally or relationally. Where there is a direct link between the process and any or both of its participants, the image schema is overtly expressed and V-ing is relational, where the relationship is marked with: *'s; of; by*, it is periphrastic and represents different degrees of nominalization. Thus we end up with different constructions sharing a common image schema - that of the event with its participants. This is the reason present day researchers of V-ing would rather refrain from assigning it two different terms. Langacker (1991) speaks of "*-ing*", and its "*action*" and "*factive*" *nominalizations.* Duffley (2006) uses the compound term 'gerund-participle'. This is the reason I will also refrain from dividing V-ings into gerunds and participles, or giving them a common name. I would not use any other name in my class work as well for reasons of simplicity, because students should get as little

theoretical load as possible. Having outlined the method, in what follows I will give examples and point out the common cognitive base for the conceptual transfer.

Transitive event schema (1)

A + process + B

Constructions of the type: B + V-ing + B
A + V-ing + B
B +V-ing
V-ing + A
A+ V-ing
V-ing + B

Terms and pre-positive attributes fall into a specific sub-group among these constructions. Their specificity is that they follow the event image schema, with the event participants having another arrangement. I will call it 'mirror arrangement' of the prototypical event schema. This 'mirror arrangement' should be well discussed and matched both to the prototypical image schema and to the other constructions. It is pertinent to draw parallels between these 'mirrors', and the post-positive arrangements formed as reduced relative clauses; as well as the 'mirrors' and the absolute constructions. Production$_3$ expects the students to rearrange mirror into ordinary arrangements and vice versa.

1. *A pressure regulating valve* ensures a constant-pressure supply to the engine-driven pumps, and a pre-warming bypass is used to heat up the fuel before starting the engine. (B + V-ing + A)
2. The needle valve will open when *the fuel pressure acting on the needle valve* exerts a sufficient force to overcome the spring compression. (A + V-ing + B)
3. Hence *the injector opening pressure* can be set by a compression nut which acts on the spring. (B + V-ing + A)
4. The usual arrangement uses individual coolers for *lubricating oil*, jacket water, and *the piston cooling system*, each *cooler being circulated by sea water*. (V-ing +A; B +V-ing +A; B + V-ing +A)
5. It is one of the RTA series engines which were introduced in 1981 and in addition to a longer stroke than the earlier RL series, it has a cylinder-head exhaust *valve providing uniflow scavenging*. (A + V-ing + B)
6. The deep collar at the upper end is bore-cooled, as are all *components surrounding the combustion chamber.* (A + V-ing + B)
7. The control lever signal passes via the selector to the engine governor and the *pitch-operating actuator.* (B + V-ing + A)
8. A *lubricating oil system employing both a gravity tank and an engine driven pump* is shown in Figure 3.11. (V-ing + A + A; A + V-ing + B)
9. These valves are hydraulically operated by an independent *system employing a main and standby set of pumps.* (A + V-ing + B)
10. The *operating diesel generators* will have their exhaust temperatures, cooling water and lubricating oil temperatures logged in much the same way as for the main engine. (V-ing + A)
11. Both *large air conditioning* and *cargo cooling systems* may employ a secondary refrigerant. (B + V-ing; B + V-ing + A)

Transitive event schema (2)

A + process + B

Constructions of the type: A+ V-ing
A + V-ing + B
V-ing + B
V-ing + of + B
A_o + V-ing + of + B
A_p + V-ing + B
A_p + V-ing + of + B
V-ing

In this group I would include all but the mirror arrangements characteristic of terminology and pre-positive attributes. Accent on differences is of importance in this group, as certain constructions impose a shift of profiling through periphrastic markers. This shift is meaningful and students should be well aware of its influence, although the basic image schema is preserved. Yet another mechanism of abstraction to a higher order schema is the absence of either participant. I will consider this absence a periphrastic mechanism as well. This absence is discussed in the Generative Grammar X'-bar theory tradition as deletion and termed PRO. (Abney 1987). I will not include *'by'* as a separate periphrastic marker forming different constructions, as it does not impose any profile shift, but marks a particular function of the constructions in the sentence, i.e. that of the agent of a passive transform.

1. Diesel engines are started *by supplying compressed air* into the cylinders in the appropriate sequence for the required direction. (V-ing + B)
2. This is achieved *by the governor automatically adjusting the engine fuel pump settings* to meet the desired load at the set speed. (A + V-ing + B)
3. *Opening of the cylinder air start valve* will admit compressed air into the cylinder. *The opening of the cylinder valve and the remote operating valve* is controlled by a pilot air system. (V-ing + of + B)
4. The oil must be stable and not break down or form carbon when exposed to high temperatures, such as where *oil cooling* is used. (B + V-ing)
5. The detergent or multi-purpose oil is particularly useful where *oil cooling of pistons* occurs or where contamination by combustion products is possible. (A + V-ing + of + B)
6. Each *set comprising nozzle and blades* is called a stage. (A + V-ing + B)
7. *Cooling of the bearing* is *by water circulating through a tube cooler* in the bottom of the casing. (V-ing + of + B, A + V-ing + B)
8. *Air remaining* in a cooler will considerably reduce the *cooling effect.* (A + V-ing, V-ing + A)
9. *Positioning the inlet cooling water branch* downwards and the outlet branch upwards will achieve venting with horizontally mounted coolers. (V-ing + B)
10. With *sea water cooling* the main problem is *fouling of the surfaces*, i.e. the presence of marine plant and animal growth. (A + V-ing; V-ing + B)
11. The steam inlet nozzles are arranged in several groups with all but *the main group having control valves* (A + V-ing + B)

4.2.3. The serial/parallel event schema

This group differs from the above described, because it co-relates the V-ing event to another grounded event. By doing so, the V-ing either 'borrows' its agent from the grounded event, or uses an agent of its own. Such 'borrowings' result from the non-autonomous status of processes, and taking place on conceptual level, they apply the 'proximity' principle. The group includes all V-ing uses with serial verbs and the reduced adverbial clauses. The V-ing constructions do not differ from the above described, as they would inevitably disclose an event image schema.

The main task with this group of V-ings will be for the students to 'bridge' the events and 'borrow' the agent if absent, or if present, to relate it to the grounding event. Special attention should be paid to serial verbs and the possible two-fold conceptual relation exhibited by **A** of the V-ing form, acting as **B** of the serial verb. Note should be made of V-ings standing alone (abstracting away from the event schema) and preceded by prepositions or time connectors.

1. *The steam decreases* in pressure as it passes along the shaft and *increases* in volume *requiring* progressively *larger blades* on the wheels.
2. Journal bearings are fitted at each end of the rotor. These have rings *to stop oil travelling along the shaft* which would mix with the steam.

3. Steam is *prevented from leaking out* of the rotor high-pressure end and air is *prevented from entering the low-pressure end* by the use of glands.
4. At very low speeds or *when starting up*, steam is provided from a low-pressure supply to the inner pocket.
5. *Leaving the coolers*, the oil passes through another set of filters before being distributed to the gearbox, the turbine bearings and the gearbox sprayers.
6. This will also *involve bringing into use turboalternators* which use steam removed or 'bled' at some stage from the main turbine.
7. *On cooling* the two metals are joined by the alloy layer between them.
8. The oil is drawn from this tank through a strainer, one of a pair of pumps, into one of a pair of fine filters. It is then passed through a cooler *before entering the engine* and *being distributed to the various branch pipes.*
9. A system of drains must be provided to clear this water away to *avoid its being carried over into the blades*, which may do damage.
10. The cylinder jacket cooling water *after leaving the engine* passes to a sea-water-circulated cooler and then into the jacket-water circulating pumps.
11. A slow-speed drive is thus provided to *enable positioning of the engine parts* for overhaul purposes.

Practice showed that reception exercises work well if organized on a cognitive basis. During production, exercises are easy and students manage with the periphrasis. However, with some students such production skills seem to be short lived and they tend to avoid extensive use of V-ing forms in unguided speaking or writing. Several causes might be the reason: 1) inadequate proficiency level of the target language; 2) different proneness and motivation to learn the language; 3) insufficient exposure and practice, etc. With these results in mind, I have considered finding other common grounds of similarity. Initially, my approach sought conceptual common touch between Bulgarian and English. My next step was to find such commonalities in V-ing function and distribution that would trigger analogy making and would facilitate acquisition.

In a historical perspective, Old English language had two distinct forms i.e. a verbal noun (gerund) and a present participle which, as language developed, merged into one single form. Houston (1989) discusses different causes for this merge, among them a shared discourse function (the occurrence of oblique verbal nouns with adverbial function and the use of appositive participles with adverbial function), and shared positions in the sentence (occurring freely in initial and final position). So, the next set of exercises triggers such similarities. Translation is introduced at this stage. It is now necessary and helpful since comparison is made in the target language and any misleading assumption should be eliminated. Next, I made a point as to which particular instances of V-ings should be mastered, having in mind students' proficiency level. The following pairs are included:

- terms as pre-positive attributes and post-positive attributive constructions;
- constructions in subject and object position paired with a 'by' phrase;
- constructions in subject position paired with adverbials in initial position.

4.2.4. The Mixed bag

1. *Fitting the blades* involves *placing the blade root* into the wheel through a gate or entrance slot and *sliding it into position.*
2. *Leaving the coolers*, the oil passes through another set of filters before being distributed to the gearbox, the turbine bearings and the gearbox sprayers.
3. *Sea water passing through the banks of tubes* provides the cooling surface for condensing the steam.
4. *With sea water cooling* the main problem is fouling of the surfaces, i.e. the presence of marine plant and animal growth.

5. On the camshaft side, access covers are provided *for inspection and cleaning of the scavenge space.*
6. Medium- and slow-speed diesel engines will follow a fairly similar *procedure for starting and manoeuvring.*
7. *The timing of the injection* can be altered *by raising or lowering the pump plunger* in relation to the cam.
8. *Cooling of engines* is achieved *by circulating a cooling liquid* around internal passages within the engine.
9. Between the rail and the injector or injectors for a particular cylinder *a timing valve* is positioned, *determining the timing and extent of fuel delivery*.
10. *Cross scavenging operation* requires a *piston skirt preventing air or exhaust gas escape* when the piston is at the top of the stroke.

5. Conclusions

V-ing forms periphrasis and/or translation? The answer cannot be ubiquitous. It is language specific, learner oriented and problem solving. In this case the specificity of the mother and the target languages necessitated transfer on the conceptual level for acquiring V-ing use. Transfer of concepts delves deep in the domain of conceptualization to map language constructions of event schemas in and across languages. Therefore periphrasis proved to be the better strategy. Translation stepped in where differences within the target language were accounted for. It assisted acquisition, did not mediate it. There is no universal teaching technique, and students are never the same. Teaching methods should be adaptable, and teachers flexible when guiding and motivating the adult learners.

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Language Barriers in Maritime Communication and Countermeasures in Teaching

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Abstract: Effective and efficient maritime communication between crewmembers, aboard or ashore, between ship and shore, requires seafarers to communicate with competence linguistically, cross-culturally, and interpersonally. With the ascent of globalization, the improvement of multi-national crews' linguistic competence is getting increasingly important. However, there is still much room for improvement in language teaching in maritime universities, though much study has already been made in this field. This paper investigates language barriers involved in maritime communication. Both quantitative and qualitative research approaches were used. The results indicate that in maritime communication, linguistic barriers constitute the biggest obstacle in maritime communication and linguistic competence, especially ability to use maritime English both orally and aurally, is the most important ability required for successful communication. The findings shed light on countermeasures for language teaching in maritime education and pre-service seafarers' training. New ways should be tried and teaching curriculum should be altered accordingly, so that prospective seafarers will be armed with better maritime communication competence.

Key words: maritime communication, communication barriers, language barriers, linguistic competence

I Introduction

Linguistic competence is the most important element in maritime communication. Lack of linguistic competence often leads to communication barriers, even disastrous consequences. Language barriers in cross-cultural communication have long been the world-wide focus of attention, so have the barriers in maritime communication. Though much study has been done so far in this field, there are still aspects rarely touched upon. Language barriers and countermeasures in maritime universities in China are worthy of further study.

In maritime universities and training institutions in China, the focus of English language teaching is always on the mastery of maritime vocabulary and reading, while listening and speaking constitutes a relatively insignificant part in the curriculum. Moreover, not enough classroom hours have been allotted to ensure the improvement of student's listening and speaking ability. In addition, in listening class, what is taught is so standard that graduates often find it hard adjusting to the real language context. Obviously, there is a gap either to be narrowed or bridged between the present English teaching curriculum and the need in real maritime communication. Maritime English teaching process should be optimized to make learners linguistically more competent.

This paper is part of the study of cross-cultural communication barriers between seafarers with different cultural backgrounds. As the former paper[1] approaches the problem from the perspective of the cultural aspect in maritime communication, this paper will focus on languages barriers and countermeasures in maritime communication, both from the authors and the seafarers'

perspectives.

II Theoretical backgrounds

2.1 Language barriers in maritime communication

Maritime communication is different from any other form of communication in that most of the time it is oral and aural and communicators have varied cultural backgrounds and varied competence in language skills. Nowadays, shipping is a globalized industry, Sampson & Zhao[2] pointed out that ships' crews have never been so nationally, culturally, or linguistically diverse. In maritime communication, to a large extent, special technical terms are used, involving at least two cultures, thus communicators speak with varied accents, causing great difficulty in mutual understanding. In previous studies on maritime communication, the focus was mostly on the training of linguistic competence and the importance of English (Shriever)[3]. Attention has been paid to the formation of cross-cultural competence (Yakushekina)[4], cultural differences (Winbow)[5] and multilingual crews (Sampson & Zhao)[2], but inadequate attention has been paid to language barriers.

Communication barriers are obstacles hindering successful communication or leading to misunderstanding or even communication failure. In maritime context, linguistic barriers may lead to disastrous consequences.

2.2 Teaching of target languages

The goal of language teaching and learning is to help language learners communicate accurately, appropriately and fluently in the target language, to minimize communication barriers. In maritime communication, accuracy and unambiguity come foremost. Both linguistic forms and the context in which real communication takes place should be taught. In maritime English teaching, besides acquainting learners with the target culture, emphasis should be placed on the training of learners' linguistic competence including building up their phonetic competence, ie., the mastery of correct English pronunciation of maritime English and listening comprehension skills, including the competence to understand pidgins, different local accents of English, and maritime English vocabulary power so as to enhance their adaptability to their work after graduation.

2.3 The Present Situation of Maritime English Teaching in China

In China, English language teaching in maritime universities is divided into two phases: General English offered to freshers and sophomores, which takes up about 350 classroom hours including 86 hours for listening and speaking course; and then for juniors English for special purposes, that is, maritime English, which takes up 72 classroom hours, half of which is spent on listening and speaking practice. However, throughout both phases, emphasis is placed on reading, rather than speaking and listening. Should that be changed to gear to the need in maritime communication?

3 Current Study

3.1 Methodology

3.1.1 Research Design

In the study, a questionnaire on cross-cultural communication in the maritime context was devised and used. It covers participants' personal information, survey on cross-cultural barriers and factors

and language barriers involved in maritime communication, and suggestions for pre-service training and maritime education. The aim is to address three research questions:

1. What linguistic barriers in cross-cultural communication exist in the maritime context?
2. What consequences do they result in?
3. What is their significance for maritime English language curriculum development?

In the questionnaire, there were 18 multi-choice statements, eight of which were related to linguistic aspects in communication. Eleven of them had a choice for open-ended answers in case some factors were left out. Eight statements were about the language used in maritime communication, language barriers in cross-cultural communication in the maritime context, and the occurrence of misunderstanding and conflicts. Five statements were about participants' views on linguistic factors involved in maritime communication (see Appendix). There are four questions for narrative answers:

1. In your communication with seafarers from other countries, what kind of barriers have you encountered?
2. Please describe the difficulties you have encountered when communicating with Chinese seafarers in particular.
3. As far as communication is concerned, what do you suggest should be included in the curriculum for pre-service training for seafarers apart from language?
4. What do you think could be done to improve communication at sea apart from English language teaching to marine navigation and engineering students?

There were two versions of the questionnaire: one in English and the other in Chinese. The statements and questions for both versions were identical.

3.1.2 Methods

A survey was conducted in China and Australia from November 2004 to March 2005. Sampling was personnel interacting with foreign ships' crews. Digital copies and hard copies of the questionnaire were distributed to those available, and responses were received the same way. 112 responses were received.

Each narrative answer was written down and sorted into different categories. Each category was labeled as language barriers, cultural barriers, psychological barriers, personality and interpersonal relationship. The labeled categories of qualitative data were added to SPSS database as variables. Every reference to the items in the category was marked as stated. Both the quantitative and qualitative data were analyzed using SPSSV 13.0. for windows to obtain frequency distributions.

The open-ended responses were written down and sorted. Since relatively few participants gave specified responses, this data were absent from the database. They were included in the findings of the research paper.

3.2 Participants

112 people participated in the study. More than half were seafarers, most of whom were ships' officers. The rest were harbor pilots, shore staff, maritime educators and "seafarer" students for advanced diploma of ships' Masters. The shore staff were mostly Chinese marine surveyors.

Maritime educators were teachers at Dalian Maritime University, China and Australian Maritime College, Australia. They were also ships' officers. 63.4% had been multinational crewmembers. The respondents were from 9 nationalities. Most were from China and Australia. 56.3% had more than 5 years' at-sea service and 59% of them received higher education.

3.3 Findings

3.3.1 The Importance of English in Maritime Communication

In maritime communication the language used is mostly English. When asked what language is used at work on board ship 93.8% of the respondents' selected English, 78.6% selected their mother tongues and 2.7% responded the mother tongue was rarely used and 4.5% responded that it was never used. 52.7% believed that no other languages were used and 4.5% believed that other languages were rarely used. Only 7.2% believed that other languages were used at work, among them French, German, Mandarin, Japanese, Fijian, Russian, Cantonese, Indonesian, French, Bantu, Swahili, Behasa, Tasalos, and Spanish. It was also mentioned that for key words for deck crews Filipino and Malay were used as well (see Table 1).

Table 1: Languages Used at Work N=112

		Frequency						
		NS	MF	F	S	R	N	Total
English	Count	7	58	28	19			112
	%	6.3%	51.8%	25.0%	17.0%			100.0%
your mother tongue	Count	16	57	25	6	3	5	112
	%	14.3%	50.9%	22.3%	5.4%	2.7%	4.5%	100.0%
other languages	Count	40	1	4	3	5	59	112
	%	35.7%	.9%	3.6%	2.7%	4.5%	52.7%	100.0%

NS=Not Stated MF = Most Frequent F = Frequent S= Sometimes R = Rarely N = Never

Table 2: Language Used in Communication with Seafarers from Other Countries N=112

		Frequency						
		NS	MF	F	S	R	N	Total
English	Count	1	89	18	4			112
	%	.9%	79.5%	16.1%	3.6%			100.0%
your mother tongue	Count	33	35	4	9	20	11	112
	%	29.5%	31.3%	3.6%	8.0%	17.9%	9.8%	100.0%
other languages	Count	41	1	3	1	9	57	112
	%	36.6%	.9%	2.7%	.9%	8.0%	50.9%	100.0%

When asked to decide on the language used when communicating with seafarers from other countries, 99.2% answered that they used English, 42.9% answered they also used their mother tongues while 17.9% answered the mother tongue was rarely used and 9.8% answered it was never used. 50.9% answered other languages were never used and 8% answered they were rarely used. Only 4.5% answered other languages were used, among them were French, German, Mandarin, Japanese, Fijian, Russian, Spanish. It was also mentioned that occasionally hand signals and

drawings were used. (Table 2)

3.3.2 Languages Barriers in Maritime Communication

Language barriers do exist in maritime communication and they cause misunderstanding. As Table 3 shows, as far as language communication was concerned, 81.2% believed that when communicating with seafarers with different cultural backgrounds, misunderstanding was caused by incorrect pronunciation, 74.1% believed it was caused by inability to understand what was spoken, 66.9% believed it was caused by inability to express clearly, 64.3% believed it was caused by incorrect use of words, 51.8% believed it was caused by inappropriate ways of expressing oneself, 37.5% believed it was caused by incorrect use of grammar, and only 18.8% believed it was caused by other factors, including speed of speech, using slangs and words not appropriate in the situation, or speaking languages other than English.

Table 3: Language Barriers in Maritime Communication N=112

		Frequency						
		NS	MF	F	S	R	N	Total
incorrect pronunciation	Count	10	13	28	50	7	4	112
	%	8.9%	11.6%	25.0%	44.6%	6.3%	3.6%	100.0%
incorrect use of words	Count	16	5	22	45	17	7	112
	%	14.3%	4.5%	19.6%	40.2%	15.2%	6.3%	100.0%
incorrect use of grammar	Count	23	2	9	31	31	16	112
	%	20.5%	1.8%	8.0%	27.7%	27.7%	14.3%	100.0%
inability to understand what is spoken	Count	8	14	26	43	15	6	112
	%	7.1%	12.5%	23.2%	38.4%	13.4%	5.4%	100.0%
inability to express clearly	Count	21	9	28	38	15	1	112
	%	18.8%	8.0%	25.0%	33.9%	13.4%	.9%	100.0%
inappropriate ways of expressing oneself	Count	22	3	13	42	24	8	112
	%	19.6%	2.7%	11.6%	37.5%	21.4%	7.1%	100.0%
other factors	Count	58	5	6	10	15	18	112
	%	51.8%	4.5%	5.4%	8.9%	13.4%	16.1%	100.0%

Among language barriers pronunciation constitutes the biggest obstacle, ability to understand and speak English comes next, whereas grammar is the least important element in maritime communication.

Table 4 shows the respondents' beliefs in the consequences caused by language barriers at work. 73.2% reported that they resulted in low work efficiency, 61.6% reported they led to failure to fulfil the work task; 22.3% reported that they most frequently resulted in development of dangerous situations for the vessel, 9.8% reported this frequently occurred and 29.5% reported this sometimes occurred. 11.7% reported they resulted in other consequences, such as isolation and loneliness, problems during emergencies, failure to complete the work to the required standard or completion point and development of friction between crew members.

Table 4: Beliefs in the Consequences Caused by Language Barriers N=112

		Frequency						
		NS	MF	F	S	R	N	Total
failure to fulfill the work task	Count	13	11	24	34	22	8	112
	%	11.6%	9.8%	21.4%	30.4%	19.6%	7.1%	100.0%
low work efficiency	Count	10	12	37	33	18	2	112
	%	8.9%	10.7%	33.0%	29.5%	16.1%	1.8%	100.0%
development of dangerous situations for the vessel	Count	13	25	11	33	20	10	112
	%	11.6%	22.3%	9.8%	29.5%	17.9%	8.9%	100.0%
others	Count	70	5	1	7	11	18	112
	%	62.5%	4.5%	.9%	6.3%	9.8%	16.1%	100.0%

Table 5: Problems Caused by Language Barriers among Multinational Crewmembers in Social Life and Everyday Life N=112

		Frequency						
		NS	MF	F	S	R	N	Total
difficulty to communicate	Count	8	21	42	29	12		112
	%	7.1%	18.8%	37.5%	25.9%	10.7%		100.0%
conflicts among crewmembers	Count	13	10	12	40	29	8	112
	%	11.6%	8.9%	10.7%	35.7%	25.9%	7.1%	100.0%
difficulty to get along well with each other	Count	11	7	12	41	31	10	112
	%	9.8%	6.3%	10.7%	36.6%	27.7%	8.9%	100.0%
others	Count	72	7		4	11	18	112
	%	64.3%	6.3%		3.6%	9.8%	16.1%	100.0%

As Table 5 shows, language barriers bring about problems in social life and everyday life for multinational crewmembers as well. Altogether 82.2% of the respondents believed they led to difficulty to communicate. 35.7% believed they sometimes led to conflicts among crewmembers, 10.7% believed this frequently happened and 8.9% believed this most frequently happened. 36.6% thought they sometimes resulted in difficulty getting along with each other, 10.7% thought this frequently happened and 6.3% believed this most frequently happened. 9.9% reported that they caused other problems such as misunderstanding of each other, distrust, rumour and innuendo.

As Table 6 shows, language barriers were the main factors leading to communication failures, for 26.8% of the respondents believed communication failures were most frequently caused by language barriers, 33% believed they were frequently caused by them and 23.2% believed this sometimes happened, only 10.7% thought they were rarely caused by language barriers.

Table 6: Barriers Leading to Communication Failures N=112

		Frequency						
		NS	MF	F	S	R	N	Total
language barriers	Count	7	30	37	26	12		112
	%	6.3%	26.8%	33.0%	23.2%	10.7%		100.0%
culture barriers	Count	16	5	30	37	21	3	112
	%	14.3%	4.5%	26.8%	33.0%	18.8%	2.7%	100.0%
psychological barriers	Count	22	3	10	28	46	3	112
	%	19.6%	2.7%	8.9%	25.0%	41.1%	2.7%	100.0%
personality	Count	19	7	18	40	21	7	112
	%	17.0%	6.3%	16.1%	35.7%	18.8%	6.3%	100.0%
interpersonal relations	Count	22	1	20	37	29	3	112
	%	19.6%	.9%	17.9%	33.0%	25.9%	2.7%	100.0%
other factors	Count	77	1	3	9	8	14	112
	%	68.8%	.9%	2.7%	8.0%	7.1%	12.5%	100.0%

The qualitative data yielded similar results. 58% of the participants responded to the question: What kind of communication barriers have you encountered in your communication with seafarers from other countries? 91% of them reported having had language barriers, 23% reported having had cultural barriers, and 9.5% reported having had other barriers.

The respondents reported having experienced different kinds of language barriers, of which the most frequently mentioned were lack of fluency in English, poor spoken English, difficulty in understanding numbers, difficulty in understanding VHF and radio messages, difficulties caused by pronunciation and incorrect use of grammar. Both Chinese and Australian participants regarded pronunciation as a big problem in maritime communication. One Australian master wrote, "As a ship master in days past, trying to understand instructions given by VHF or radio from shore facilities (eg: VTS) was very difficult due to pronunciation and grammar differences. The problem for foreign crews coming to our country must be at least as great." Another one wrote, "Mainly language barriers are caused from understanding the English pronunciation." The Chinese participants believed that inability to understand and speak nautical English and insufficient nautical English vocabulary were big problems. The speed of speech was also an obstacle causing problems. "Australians often fail to appreciate that, as English is not the language of first choice, it is important to simplify the spoken English and slow down the pace at which words are spoken. Correct and slow pronunciation often allows the recipient the time to understand each, or most, of the words spoken." Inadequate maritime vocabulary leads to communication failure, either in understanding or expressing.

3.3.3 Opinions on Linguistic Competence

Table 7 shows the participants' opinions on the importance of different aspects of linguistic competence in maritime communication. To the statement "It is important to have a good mastery of English pronunciation", 40.2% strongly agreed, 47.3% agreed, 4.5% responded as uncertain while 3.6% disagreed and 4.5% did not respond to this one. To the statement "It is important to have a good mastery of vocabulary of maritime English", 52.7% strongly agreed, 34.8% agreed and 2.7% were uncertain. No one disagreed to this, but 0.9% strongly disagreed to this. 10.7% strongly agreed and 25.9% agreed that English grammar was also important. 27.7% responded as uncertain

while 19.6% disagreed and 1.8% strongly disagreed to this. 15.2% referred to other factors including use of simple words, slowing down, being precise and simple, and mastering how to interpret information.

Table 7: Opinions on Aspects of Linguistic Competence in Maritime Communication N=112

		Frequency						
		NS	SG	A	U	D	SD	Total
correct English pronunciation	Count	5	45	53	5	4		112
	%	4.5%	40.2%	47.3%	4.5%	3.6%		100.0%
English grammar	Count	16	12	29	31	22	2	112
	%	14.3%	10.7%	25.9%	27.7%	19.6%	1.8%	100.0%
vocabulary of maritime English	Count	10	59	39	3		1	112
	%	8.9%	52.7%	34.8%	2.7%		.9%	100.0%
others	Count	68	6	11	13	3	11	112
	%	60.7%	5.4%	9.8%	11.6%	2.7%	9.8%	100.0%

SG=Strongly Agree A=Agree U=Uncertain D=Disagree SD=Strongly Disagree

From Table 8 it is known that listening and speaking skills are very important in maritime communication. To the statement "For successful communication at sea, the ability to understand spoken maritime English competently is very important", 62.5% strongly agreed and 33.9% agreed. 1.8% were uncertain about it and no one disagreed to this. Also altogether 77.7% agreed that the ability to speak maritime English competently was important. 14.3% were uncertain about this and 1.8% disagreed.

Table 8: Importance of Listening and Speaking Skills for Successful Communication at Sea N=112

		Frequency					
		NS	SA	A	U	D	Total
The ability to understand spoken English competently is very important.	Count	2	70	38	2		112
	%	1.8%	62.5%	33.9%	1.8%		100.0%
The ability to speak maritime English competently is very important.	Count	7	57	30	16	2	112
	%	6.3%	50.9%	26.8%	14.3%	1.8%	100.0%

When asked about the importance of different aspects in communicating with seafarers from different countries, 53.6% strongly agree and 42% agreed that verbal communication was very important. 2.7% responded as uncertain. 1.8% did not respond to this. No one disagreed to this (see Table 9).

Table 9: Important Aspects in Maritime Communication N=112

		Frequency						
		NS	SG	A	U	D	SD	Total
verbal communication	Count	2	60	47	3			112
	%	1.8%	53.6%	42.0%	2.7%			100.0%
Nonverbal communication such as facial expressions, body language and gestures, etc.	Count	14	24	41	25	6	2	112
	%	12.5%	21.4%	36.6%	22.3%	5.4%	1.8%	100.0%
knowledge of each other's customs, habits, social values, ways of thinking, etc.	Count	13	13	50	33	2	1	112
	%	11.6%	11.6%	44.6%	29.5%	1.8%	.9%	100.0%
appropriate ways of using English	Count	15	17	48	25	6	1	112
	%	13.4%	15.2%	42.9%	22.3%	5.4%	.9%	100.0%
others	Count	94	4		4	2	8	112
	%	83.9%	3.6%		3.6%	1.8%	7.1%	100.0%

The necessity of mastering Standard Maritime Communication Phrases (SMCP) can be seen from Table 10. 44.6% strongly agreed and 37.5% agreed that it was necessary to master SMCP while less than one percent disagreed and strongly disagreed. (Table 10)

Table 10: Opinions on the Necessity of Mastering SMCP N=112

		NS	SA	A	U	D	SD	Total
It is necessary for seafarers to master SMCP.	Count	6	50	42	12	1	1	112
	%	5.4%	44.6%	37.5%	10.7%	.9%	.9%	100.0%

In summary, the above results indicate that in maritime communication, linguistic competence is regarded as the most important ability. Language barriers constitute the major obstacles. They result in conflicts, misunderstanding, low work efficiency, communication failure, and even dangerous situations for the vessel.

3.3.4 Participants' Recommendations

For efficient and satisfactory maritime communication, the participants offered valuable suggestions. It was suggested that emphasis be placed on English pronunciation of basic maritime communication phrases, International Maritime Organization's (IMO's) standard vocabulary, simplified and common English be used, standard terminology be used in communication. The participants also recommended that seafarers' ability to understand and speak maritime English be emphasized. They should learn to speak slowly and clearly to each other for mutual understanding. It is important to repeat the message and get confirmation that the contents are fully understood by both communicating parties. Seafarers should have a good mastery of maritime vocabulary, such as basic commands to steering, drop anchor, names of parts of a merchant ship, etc. They also suggested that auxiliary means be used to aid in communication such as non-verbal communication means like using hand signals for port standards, drawings and even messages in written forms. One participant wrote, "Use port and service facilities to provide advance information in written format wherever possible. From my experience, ship/shore communications are most difficult when done by VHF, and phone or radio as reliance upon spoken word maximizes risk of error."

Some suggested offering to seafarers video presentation of SMCP in English along with captains in the native language and simulated scenario of the situation at sea and different communication modes.

For maritime education and pre-service training, they suggested exposing students and trainees extensively to original English such as films, newspapers and magazines to better their ability to express themselves well and English listening comprehension.

3.4 Limitations of the Study

The study has its limitations. Due to limit of time and distance from the possible participants, no pilot survey was done. The survey took place only in China and Australia, so opinions acquired from the survey did not include those from other parts of the world. Additionally, the scope of the respondents' ethnic backgrounds was very limited. Also, as it was mostly an online survey, any uncertainty about the statements would cause participants to give up response. If the research had been conducted otherwise, by observing real communication taking place on board ship, or by interviews, more data might have been obtained. Further study is to follow up.

4 Conclusion and Countermeasures

The research findings indicate that in maritime communication, English is the most important language. Verbal communication plays the most important part. Ability to understand and speak maritime English competently is very important. Maritime English vocabulary and Standard Maritime Communication Phrases are important as well. Appropriate ways of using English requires attention. Body language helps in communication. As far as linguistic competence is concerned, English pronunciation calls for greater attention. Of the many communication barriers, language barriers and cultural barriers constitute the biggest obstacles in communication. They cause misunderstanding and conflicts resulting in undermining the relationship between crewmembers, failure to fulfill the work task, even dangerous situations for the vessel. Equal importance should be attached to the different aspects in maritime communication.

In accordance with the research findings, to make students and seafarers linguistically more competent and to minimize communication barriers, in maritime English language teaching, emphasis should be placed on English pronunciation as it is the key to successful oral and aural communication. In the teaching curriculum, adequate classroom hours should be allotted to the teaching of pronunciation. Not only should learners be taught standard British pronunciation and American pronunciation of English, but they should also be exposed to the major varieties of English pronunciations in the world such as Australian English, Indian English, South African English, etc. They should also get familiar with pidgins spoken with strong typical local accents. In the teaching of maritime English, stress should be placed on the ability to understand and speak maritime English. Students should be exposed to authentic material such as audio-video materials presenting the real communication situations. We recommend that English phonetics course be offered to students and more classroom hours be given to oral and aural training in maritime English. In addition, auxiliary means of communication should be employed to assist in maritime communication. Standard sign language for maritime communication should be recognized, framed, decreed and enforced by International Maritime Organization.

With better linguistic and cultural competence, maritime communication is sure to be made more efficient and more effective and, hence, the operation of the ship safer.

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Appendix: Questionnaire

Questionnaire on Cross-cultural Communication Among Seafarers

Designer: Yanqiu Wang

Subjects: Seafarers, shore staff, pilots & teachers

Designing Time: October, 2004

The purpose of this questionnaire is to investigate cross-cultural communication barriers among seafarers and to collect data for research. The information you provide will be treated confidentially. Thank you for your participation and cooperation.

Part One: Personal Information

1. **Your sex:** a. male b. female

2. **Your age:** a. 20-25 yrs b. 26-30 yrs c. 31-35 yrs d. 36-40 yrs e. 41-45 yrs f. over 45 yrs

3. **What is your nationality**? _____.

4. **What is your position or rank?** _____.

5. **How long have you worked at sea?** _____ years _____ months.

6. **You are**: a. a seafarer b. shore staff c. a pilot d. teacher e. other

7. If you are a shore staff or pilot, please answer the following questions.

1) **How long have you been interacting with foreign ships' crews**? _____ years.

2) **Your interaction with foreign crews is:** a. all the time b. most of the time c. often d. rarely e. never

8. **Your academic educational background is**:

a. Ph D b. master c. bachelor d. junior college e. high school f. other _____

9. **Have you ever been a member of a multi-national crew**? a. yes b. no

Part Two Questionnaire on Communication among Seafarers

Questions in this part are related to cross-cultural communication among seafarers. Please read what the abbreviated letters stand for:

MF = Most Frequently **F** = Frequently **S** = Sometimes **R** = Rarely **N** = Never

Please select a number for **EVERY** choice.

Questions and Choices	MF	F	S	R	N
10. When you are on board ship, the language you use to communicate at work is:					
a. English	1	2	3	4	5
b. your mother tongue	1	2	3	4	5
c. other languages (Please specify.)	1	2	3	4	5
11. When you communicate with seafarers from other countries, you communicate with them in:					
a. English	1	2	3	4	5
b. your mother tongue	1	2	3	4	5
c. other languages (Please specify.)	1	2	3	4	5
12. When communicating with seafarers from different cultural backgrounds, as far as language communication is concerned, misunderstanding is cause by:					
a. incorrect pronunciation	1	2	3	4	5
b. incorrect use of words	1	2	3	4	5
c. incorrect use of grammar	1	2	3	4	5
d. inability to understand what is spoken	1	2	3	4	5
e. inability to express clearly	1	2	3	4	5
f. inappropriate ways of expressing oneself	1	2	3	4	5
g. other factors (please specify.)	1	2	3	4	5
13. When communicating with seafarers from different cultural backgrounds, as far as culture is concerned, misunderstanding is caused by:					
a. not understanding their body language such as nodding, shrugging and gestures, etc.	1	2	3	4	5
b. not knowing their customs and habits	1	2	3	4	5
c. not being familiar with their ways of expressing ideas	1	2	3	4	5
d. not knowing their do's and don'ts	1	2	3	4	5
e. not knowing their ways of thinking	1	2	3	4	5
f. not knowing their social values	1	2	3	4	5
g. other factors (please specify.)	1	2	3	4	5
14. Language barriers among multinational crewmembers at work					

result in:						
a.	failure to fulfill the work task	1	2	3	4	5
b.	low work efficiency	1	2	3	4	5
c.	development of dangerous situations for the vessel	1	2	3	4	5
d.	others (Please specify.)	1	2	3	4	5
15.	**Language barriers among multinational crewmembers in social life and everyday life result in:**					
a.	difficulty to communicate	1	2	3	4	5
b.	conflicts among crewmembers	1	2	3	4	5
c.	difficulty to get along well with each	1	2	3	4	5
d.	others (Please specify.)	1	2	3	4	5
16.	**Misunderstanding and conflicts occur among multinational crewmembers:**					
a.	at work	1	2	3	4	5
b.	in everyday life	1	2	3	4	5
c.	when exchanging ideas	1	2	3	4	5
d.	at other times (please specify.)	1	2	3	4	5
17.	**Cross-cultural conflicts caused by communication barriers arise among multinational crewmembers:**	1	2	3	4	5
18.	**Failure to communicate among seafarers from different countries is caused by:**					
a.	language barriers	1	2	3	4	5
b.	cultural barriers	1	2	3	4	5
c.	psychological barriers	1	2	3	4	5
d.	personality	1	2	3	4	5
e.	interpersonal relations	1	2	3	4	5
f.	other factors (Please specify.)	1	2	3	4	5

1. **In your communication with seafarers from other countries, what kind of barriers have you encountered? Please supply your answers in the blank.**
2. **Please describe the difficulties you have encountered when communicating with Chinese seafarers in particular. Please supply your answers in the blank.**

Part Three: Your Opinions and Suggestions

Questions in this part seek your views on communication in the maritime field and maritime education.

Please read the following abbreviations:

SG = Strongly Agree **A** = Agree **U** = Uncertain **D** = Disagree **SD** = Strongly Disagree

Questions and Choices	SG	A	U	D	SD
19. When communicating with seafarers from different linguistic backgrounds, it is important to have a good mastery of:					
a. correct English pronunciation	1	2	3	4	5
b. English grammar	1	2	3	4	5
c. vocabulary of maritime English	1	2	3	4	5
d. others (Please specify.)	1	2	3	4	5
20. For successful communication at sea, the ability to understand spoken maritime English competently is very important.	1	2	3	4	5
21. For successful communication at sea, the ability to speak maritime English competently is very important.	1	2	3	4	5
22. When communicating with seafarers from different countries, the following aspects are very important:					
a. verbal communication	1	2	3	4	5
b. nonverbal communication such as facial expressions, body language and gestures, etc	1	2	3	4	5
c. knowledge of each other's customs, habits, social values, ways of thinking, etc	1	2	3	4	5
d. appropriate ways of using English	1	2	3	4	5
e. others (Please specify.)	1	2	3	4	5
23. To live and work harmoniously with multinational crewmembers, you need to have knowledge of:					
a. some of their native language	1	2	3	4	5
b. their religion	1	2	3	4	5
c. their ways of thinking	1	2	3	4	5
d. their dressing habits	1	2	3	4	5
e. their cuisine culture and eating habits	1	2	3	4	5
f. their do's and don'ts	1	2	3	4	5
g. others (please specify.)	1	2	3	4	5
24. To live and work harmoniously with multinational crewmembers, seafarers must:					
a. respect each other's religion	1	2	3	4	5
b. respect each other's opinions	1	2	3	4	5
c. respect each other's customs	1	2	3	4	5

	d. appreciate each other's work achievements	1	2	3	4	5
	e. mind their wording and be tactful when pointing out a mistake at work	1	2	3	4	5
	f. others (Please specify.)	1	2	3	4	5
25.	**It is important for seafarers from different cultural backgrounds to have cultural awareness.**	1	2	3	4	5
26.	**It is necessary for deck and engine officers to have knowledge of cross-cultural relations.**	1	2	3	4	5
27.	**It is necessary for seafarers to master SMCP (Standard Maritime Communication Phrases).**	1	2	3	4	5

1. As far as communication is concerned, what do you suggest should be included in the curriculum for pre-sea training for seafarers apart from language? Please supply your answers in the blank.

2. What do you think could be done to improve communications at sea apart from English language teaching to marine navigation and engineering students? Please supply your answers in the blank.

LEARNING BY DOING: SHIPHANDLING SIMULATORS FOR MARITIME ENGLISH PRACTICE

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Abstract

English has been adopted by IMO as the official language of the maritime industries. International Convention on Standards of Training, Certification and Watchkeeping (STCW95) requires that every mariner must have an adequate knowledge of English language. Many difficulties, however, remain in the teaching and assessing of Maritime English in maritime education institutes. Effective methodologies still need to be studied and searched for training and testing the proficiency of maritime English that meets the international standards of the STCW requirements. Approaches of using shiphandling simulator for maritime English training are explored in this paper. Most of the maritime universities and many maritime training institutes all over the world have installed shiphandling simulators, which should be valuable resources for maritime English education if proper utilized. Training modules combining maritime English practice with bridge activities have been devised and experimentally carried out. Shiphandling simulators provide good atmospheres and contexts for learning-by-doing practice of maritime English. In addition, the rapid spread of the internet technology has shown a promising future of application of shiphandling simulators through internet. Research has been carried out on internet based integration of multiple shiphandling simulators. A multi-agent based system, including necessary hardware, has been developed. Collaborated operation of the system can be of benefit in facilitating communication and maritime English training and practice, as well as enhancing mutual understanding of the navigation customs and culture background among cadets and seafarers from different countries.

Key words: Maritime English, Shiphandling Simulator, Maritime Education and Training, Syllabus

1 Introduction

Because most maritime accidents are caused by human error, notably breakdowns in communication or cooperation, the legislation nowadays emphasizes the importance of the English language proficiency in relation to safety at sea. Instruction and practice of maritime English for communication and cooperation is an important element in maritime education.

A multitude of new methodologies have been explored and discussed in recent years in an attempt to approach the training and testing the proficiency of maritime English that meets the international standards laid out in STCW. Among those trendy guidelines, utilizing shiphandling simulators in a bridge activities context is deemed as one of the most effective experiential learning and training methods, which will allow the trainees accustomed to a workplace environment to expand their practice little by little, so that they may communicate and pass messages with confidence when taking up their future jobs onboard.

In the light of many previous discussions in the aspect of using shiphandling simulators in maritime English practice, it can be concluded that affirmativeness in the possibilities is obvious. However, solutions in combining this technology with operational teaching and assessing maritime communications especially with coursework deign has not much referred to. This paper provides an overview of current application and implementation of shiphandling simulator in assisting maritime English teaching, training and assessing. Case studies in course design and practice for communication skills utilizing Bridge Resource Management (BRM) in Shanghai Maritime University is specified. A multi-agent based system, including necessary hardware, is introduced in this paper. Collaborated operation of the system can be of benefit in facilitating communication and maritime English training and practice, as well as enhancing mutual understanding of the navigation customs and culture background among cadets and seafarers from different countries (Shi, 2005). Further studies and refinery work within this sphere is also proposed in the later part of this paper.

2. Background

It's been generally regulated by IMO that the safety of life at sea, the marine environment and over 80% of the world's trade depends on the professionalism and competence of seafarers. The human element is a complex multi-dimensional issue that affects maritime safety, security and marine environmental protection involving the entire spectrum of human activities which need to cooperate to address human element issues effectively. Seafaring requires a seaman maintain her or his best effort and high skills. Unforeseeable elements and constantly changing operation situations ask for she/he clear and strong capabilities in decision making and communications. The human remains the decisive element since no machine or technology can replace a seaman's capabilities and skills, among which linguistic and communicative skills are of paramount importance in affecting the bridge management and safety of ship.

Maritime English is to a great extent restricted to IMO Standard Marine Communication Phrases, which builds on a basic knowledge of English and has been drafted in a simplified version of maritime English. It includes phrases for use in routine situations such as berthing as well as standard phrases and responses for use in emergency situations. Under the STCW 1978, as amended, the ability to understand and use the SMCP is required for the certification of officers in charge of a navigational watch on ships of 500 gross tonnage or above.

Shiphandling simulator is primarily designed and introduced to train and develop potential cadets and officers the necessary knowledge and skills in properly and correctly stipulating and managing a vessel. Whereas a new and alternative use of the shiphandling simulator has been discussed and proven to be suitable and effective in training and assessing communication skills, especially in contextualizing the practice of the mandatory part of the IMO SMCP, reinforcing the trainees to play different roles in a realistic atmosphere and environment(Pérez, 2005). It has been decided that most of the scenarios and contents in SMCP can be flexibly designed or tailored and properly practiced in a shiphandling simulator based environment. The key task then is how to organize and implement the syllabus of maritime English teaching and learning via this effective learning by doing pedagogic methodology.

3. Learning by doing Practice through shiphandling simulators

3.1 Learning by doing theory in brief

The relationship between theory and its practical applications has been at the top of the education and training agenda for a long time. It is almost the same case with maritime institutes. Traditionally, maritime instructors have merely seen it as their job to teach trainees the theories and how to apply them, however, this may be to put the cart before the horse, since trainees seem to benefit a lot more from being able to draw on their own experience through opportunities for reflection and concept development, and to reapply to new experience what has become a much clearer understanding. The suggestion is then cadets and potential senior officers ought to be using practice in order to develop and test theory which they can truly claim ownership, but not the other way round. Onboard real ship training is taken for granted the idealist for all seafaring skills training including language communication. However, it is not practical and often over costly for most maritime institutes to carry out the real-ship training program. Fortunately, shiphandling simulator has been conceived and evolved to realize the simulated real-ship education and training for ME learning by doing practice.

3.2 ME Teaching and Training Practice through shiphandling simulators

Nowadays most maritime education and training institutes have installed shiphandling simulators, based on which maritime teaching and training have been designed and experimented. In response to these changes, course and syllabus design and organization as well as instruction and evaluation have thus undergone reforms since the attention of simulator training has been particularly drawn to.

Physically within language skills targeted shiphandling simulator training, all means of lingual communication devices employed in real ship operation should be properly fixed to simulate navigational and safety communications from ship to shore and vice versa, from ship to ship, as well as onboard ship. These should include radiotelephone, loudspeaker, satellite, etc., which are used for communications with parties outside the ship, and engine order telegraph, voice tube, loud speaker, public announcement system, telephone, walkie-talkie, etc. that contribute to ship's onboard communications(Jin, 2003).

Maritime English course design and organization is critically important through out the whole training program. It ought to take into account the emphasis IMO guidelines on ship management lays in the need for good communication. The major concepts and skills with this aspect are: Understanding culture differences; Situational awareness; Close loop communication; Briefing and Debriefing; and Communication procedures.

Syllabuses based on shiphandling simulator can be different considering the special needs of the trainees and the specific expectations from different customers, nevertheless a typically SMCP oriented practice program usually embodies the following:

1) Introduction and familiarization of all means of communication employed in BRM training platform, including function of each communication device and its applicable situation
2) Scenarios explanation and roles designation grounded on SMCP contexts
3) Role play itself by designated trainees while the rest watch as observers
4) Debriefing or writing a report about the completed operation

The process of scenario choosing and setting should be particularly careful because it may directly affect the effectiveness and efficiency of the whole training program. Since it is usually not possible to go for any context that SMCP may be applied to, the most frequently employed contexts should be decided in setting scenarios, i.e. VTS communication when entering a port; Ship to ship communication in a crossing situation when risk of collision is conceived; SAR communication when exposed to distress traffic and requiring immediate assistance; Pilotage communication when in request of a pilot; Standard wheel and engine

order from bridge to engine room; Briefing when handing over watch; and so on. Each scenario can be even more vivified if specifying particulars of the vessels involved, time and position, temporal sea condition as well as the situation in which the vessels are closed to. It is also generally expected that all tutorial classes are given in English throughout the whole training and assessing program.

At all events, however, performing the above requires that trainees have

1) basic language skills,
2) been introduced to SMCP in previous theoretical classes,
3) good understanding of phrases and sentences in SMCP and their respective situations in which to be applied,
4) adequate knowledge of the integrated operation of all parts of bridge resources.

3.3 ME Assessing Practice through BRM Courses

Similarly, it is intended that behaviour should be changed by learning, and it is not sufficient to learn new concepts and develop new generalizations. The learning must be tested again and again in new situations, through which trainees take the link between theory and action by planning for that action, carrying it out, and then reflecting on it, relating what happens back to the theory. Therefore, apart from the communication system in a BRM system, it is also necessary to establish a corresponding monitoring system to supervise and assess the operations by the trainees. A debriefing organized by the instructor is necessary to be carried out so that trainees can compare what's been expected with and reflect on their operations.

4. Case studies of ME Practice based on BRM Training in Shanghai Maritime University (SMU)

4.1 BRM Training Background and its application in ME practice in SMU

Until present time, in maritime institutes across the world, the learning by doing ME practice through shiphandling simulator have been experimented to different extents, by virtue of a variety of different simulator systems. Among all the varied systems, Bridge Recourse Management (BRM) is a more sophisticated and comprehensive shiphandling simulator integrating all necessary resources seafarers may need for safe planning and execution. Any complete BRM training program should demand effective communications among trainees. Except internal and external communication equipment, resources referred to here normally include (Lynch, 2003):

1) Electronics equipment (i.e. Radar, Depth Sounder, GPS/DGPS, ARPA, Gyro compass);
2) Charts and publications, including electronic publications;
3) Environmental factors (i.e. tide, wind, current);
4) Electronic Charting and Display Information System (ECDIS);
5) Vessel Traffic Service (VTS);
6) Passage Plan;
7) NAVTEX;
8) Automatic Identification System (AIS);
9) Personnel onboard, including persons with local knowledge (i.e. Master, Officer on Watch (OOW), helmsman, lookout).

The initiative of BRM training is a shift of focus from shiphandling and operation techniques to bridge management involving human elements, taking into account the proper workload and stress of the roles in the bridge. BRM courses and training, if proper designed and experimented, is recognized as an effective tool to combat human error in ship navigation.

Language skill targeted training benefits in many ways from utilizing a BRM since it continually monitors the progress of vessel making appropriate adjustment and corrections to maintain a safe planning; and it keeps the trainees the situational awareness in reach of complete recourses in bridge aforementioned.

SMU started the BRM training in mid 2000 (Shi, 2003). Contents of modules are concentrated on human factors, with the following three aspects as its main domains: Operator's Status; Management Skills and Communication Skills. The simulators in SMU fall somewhere between a full mission and multi task simulators and have proven to be suitable for the training. For Communication Skills, ME instructors in SMU have made great efforts in properly designing the syllabus. The following are some of the typical and successfully applied cases.

4.2 Case studies in syllabus of shiphandling simulator based ME practice

4.2.1 Event 1: VTS Communications

Number of vessels involved: 1
Particulars of the vessel calling: BSMU, Yu Feng, China, Container, 18000mt, Course 285, Speed 10knots, Position 30°35"06"East 122°09"45North
Venue: Yangshan Deep Water Port, Shanghai, China
Time: 0915 (Zone Time)
Sea Condition: Plain
Roles: Chief Officer, Yangshan Maritime Office Operator
Scenario: Vessel BSMU is calling Yangshan Port. She reports to Yangshan Maritime Office when arriving at Reporting Line Y1. Yangshan Maritime Office gives information for other ship's activities for her information.

1) Chief Officer calls Yangshan Maritime Office.
2) The operator in Yangshan Maritime Officer responds and asks her to change to Channel 13.
3) Chief Officer acted accordingly and notes the operator.
4) Chief Officer reports the ship's particulars as requested, including ship's name, call sign, nationality, ship's position, length of all, breadth, draughts fore and aft, port of departure and destination.
5) The operator gives information about another vessel calling Yangshan and it's estimated they may meet 1005 local time near Xi Ma An Shan Lighthouse.
6) Chief Officer receives the message and expresses the intention of calling again when passing Reporting Line Y2.

Task:

1) To practice major aspects from chapter General of the SMCP:
   - Call for identification: Spelling of letters, digits and numbers
   - Provide message marker
   - Respond (i.e. affirmative, negative, information not immediately available or not obtained)
   - Standard organizational phrases
   - Repetition (i.e. repeating call sign, ship's name, destination, request)
   - Speaking numbers (i.e. length over all, breadth, drafts fore and aft, VHF channel)
   - Positions
   - Bearings
   - Courses
   - Distances
   - Speed
   - Time

- Geographic names

2) To practice the Phrases of VTS communication within SMCP

4.2.2 Event 2: Pilotage communication when entering port, requiring a pilot

Trainees in a team group are given the role card which has particulars as follows:
Number of vessels involved: 1
Particulars of the vessel: BSMU, Yu Feng, China, Container, 18000mt
Time: 1920 (Zone time)
Place: Port of Busan, South Korea
Sea Condition: Plain
Roles: Busan Pilot Operator, Pilot Chief Officer, 3rd Officer
Scenario: Chinese vessel Yu Feng is entering Busan Port, she is trying to connect Busan Pilot and require pilotage. Busan Pilot arranges for a pilot boat for her. The 3rd Officer is assisting the pilot for embarkation.

1) The Chief Officer is on duty. He calls Busan Pilot and requires pilot.
2) Busan Pilot requests the identification and particulars of the vessel. (ship's name, call sign, port of registry, last port of call and destination, length of all, breadth etc.).
3) Busan Pilot requests the position, bearing and distance from Busan Pilot.
4) Busan Pilot asks for the maximum draught.
5) Busan Pilot questions about the status of the pilotage (i.e. mandatory or not)
6) Yu Feng asks where the pilot boat is right now.
7) Yu Feng asks where to rig the pilot ladder.
8) Busan Pilot informs that the pilot boat has approached the vessel and questions about the freeboard of the vessel.
9) Chief Officer asks the 3rd Officer to stand by the pilot ladder and put lights on at the pilot ladder.
10) Chief Officer asks whether a man rope is required.
11) Pilot requests the vessel to make a lee on the port/starboard side.
12) Pilot requests the vessel to stop engine for embarkation.

Task:

1) To practice major aspects from chapter General of the SMCP:
   Same as what is laid out in Task of Event 1.
2) To practice Phrases for Pilotage communications within SMCP

4.2.3 Event 3: Ship to ship communication

Trainees in a team group are given the role card which has particulars as follows:
Number of vessels involved: 3
Particulars of the vessel:
Vessel 1, the Calling Vessel: BSMU, Yu Feng, China, Container, 18000mt, Course 015, Speed 12knots
Vessel 2, the Vessel being called: BMMC, Cartier, China, Bulkcarrier, Handysize, Course 220, Speed 18 knots, 4miles from Calling Vessel
Vessel 3: BNAV, Lee Ma, China, LNG, 13000mt, Course 335, Speed 10 knots, 2.5 miles from Calling Vessel
Time: 0010 (Zone Time)
Venue: out in the East China Sea
Sea Condition: Rough
Roles: 2nd Officer of BSMU, 2nd Officer of BMMC
Scenario: North bound vessel BSMU is underway with 2nd Officer on watch. She detects from the Radar that a vessel ahead is bounding south and a crossing situation is estimated to be

conceived between them. While at the same time, she acknowledged there's another vessel on her starboard bow. She immediately makes an initial call to the vessel coming south.

1) BSMU calls BMMC to make positive identification by relative position from own vessel.
2) BMMC responds and asks BSMU to change to Channel 6.
3) BSMU informs BMMC her course and speed and that a crossing situation is conceived.
4) BMMC questions about the intention of BSMU for avoiding the situation.
5) BSMU informs that there's a vessel on her starboard bow and can't alter course to starboard.
6) BSMU requests BMMC to take necessary preventative measures to ensure "red to red" pass.
7) BMMC agrees to alter her course to starboard and slow down speed to make an easy pass.

Task:

1) To practice major aspects from chapter General of the SMCP:
   Same as what is laid out in Task of Event 1.
2) To practice Phrases for Collision Avoidance.

4.2.4 Event 4: SAR communication between ships

Number of vessels involved: 2
Particulars of the vessel in distress: BMMC, Cartier, China, Bulkcarrier, Handysize, Course 220, Speed 6 knots, Position 31 degrees 25 minutes north, 121 degrees 35 minutes east
Particulars of the vessel acting as a rescue resource: BSMU, Yu Feng, China, Container, 18000mt, Course 015, Speed 12knots, Position 31 degrees 25.5 minutes north, 122 degrees 36 minutes east
Venue: East China Sea
Time: 1245 (Zone Time)
Sea Condition: Plain
Roles: Master of BMMC, Master of BSMU
Scenario: Vessel BMMC is suffering seriously from flooding and listing, in danger of capsizing. The master makes a distress call via VHF to all vessels in vicinity for immediate assistance. The nearest vessel BSMU acknowledges and responds right after receiving the distress message and informs BMMC the intention of coming for assistance.

1) BMMC makes a distress call to all vessels in vicinity for assistance.
2) BSMU responds and asks for the MMSI number of the vessel in distress.
3) BSMU questions for the kind of assistance BMMC is in need of.
4) BMMC answers that she is flooding in the engine room, and listing to port side.
5) BSMU questions about the position of vessel in distress and whether there's any danger of navigation.
6) BSMU questions about the number of persons onboard and whether any person onboard has injured.
7) BSMU questions about the number of lifeboats and lifecrafts available onboard.
8) BMMC informs the vessel is listing to port side and has decided to abandon vessel and asks if there's possibility for BSMU to come for assistance.
9) BSMU responds in affirmative tone that she will come to assistance as soon as possible.

Task:

1) To practice major aspects from chapter General of the SMCP:
   Same as what is laid out in Task of Event 1.

2) To practice Phrases for Distress communications and Search and Rescue communications within SMCP.
   - Flooding;
   - Abandoning vessel;
   - SAR communications;
   - Acknowledgement and/or relay of SAR messages, etc.

In this part with respects to Search and Rescue Communications, which constitutes the major aspects of External Communications within SMCP, different distress facts can be designated under same scenario, so that all parts of Search and Rescue communications can be exercised. Trainees will benefit from exposure to communications in the varied emergency situations.

The role play will be video recorded, the purpose of which is to allow trainees to review what happened in the role play for debriefing and evaluation. No specific professional acting is required from trainees but they are encouraged to reflect on what have acted in responding to the specific event.

All other devices and equipment are available in the bridge except from communication equipment. Therefore in addition to complete the communication, the trainees are also expected to carry out plotting, reading meters, using VHF device, etc. In the end or latter part of the entire training scheme, trainees can be further encouraged to set and perform scenarios themselves.

5. Multi-agent and internet based system

Case studies illustrated above are conducted with standalone facilities, by which it refers to single simulator in a specific venue. To further meliorate the simulation of real and versatile scenarios in which parties in different geographic venues are able to communicate at the same time, research has been carried out on internet based integration of multiple shiphandling simulators. A multi-agent based system will link all parties from different countries and regions involved in one ME training program, through which trainees benefit more especially in situational awareness and understanding cultural differences.

The multi-agent shiphandling simulators system consists of a web server linker, local simulator agents and an internet based simulated VHF communication system. The web server linker manages and coordinates the integrated simulators in the system, and it also displays necessary information and provides general functions for controlling the system running. The local agent communicates with local simulator and the server linker. The simulated VHF system performs communication functions between simulators linked to the internet. SMU has looked into this area and made a report on the related research work accomplished by us (Shi, 2006). Based on Multi-Agent (MSA) technology, we successfully created a complete SHSLinker platform on which the Management Centre, the said Server connects SHS agents in different terminals. It provides a persuasive foundation for demonstrating and explaining how the multi-agent system works for ME training practice.

In the report abovementioned, it's further suggested that it's worthwhile to link VTS simulator to the platform to perform the external communications when VTS is interacted in the scenario. Moreover, a training assessment or scoring system can be built in the Management Centre to evaluate the performance of the trainees.

6. Conclusion

Maritime English education and technological development has been acknowledged to be an interaction relation, and are the two main factors upon which the trainee is based (Alia.2004). The advanced technology in shiphandling simulator will, by all means, play an important role in the methods of conducting the ME syllabus, and should be further popularized among the majority of maritime institutes worldwide.

The ME practice based on shiphandling simulator in SMU are, however, in need of further improvement and refinery work. First, assessment for trainees' performance should be properly given since a correctly employed assessment will develop and facilitate their performance, otherwise it will go the other way round. Second, evaluation for course works design and syllabus itself shall be carried out, which might be done through contrasting the performance of the trainees before and after the training. Third, ME practice based on shiphandling system is, nevertheless, more or less a new thing to ME instructors whose role play is actually the most paramount in steering and directing a scenario practice. Thus, training for these ME instructors are considered necessary. Fourth, the practice of ME through multi-agent simulator system should be experimented to link the shiphandling simulators of different countries and regions. Further research and experimental work requires firm cooperation with ranking from other simulator terminals to simulators manufacturers.

Acknowledgments:

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COMBINATION OF ONBOARD EXPERIENCE AND E-LEARNING FOR COMMUNICATIVE MARITIME ENGLISH TRAINING

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Abstract

Year 2007 is the turning point for Maritime English training at five Colleges of Maritime Technology (Maritime Colleges) in Japan where new trials were planned and implemented in order to make Maritime English courses more communicative and practical. This change has been hoped by the Japanese shipping industry and National Institute for Sea Training (NIST). The former operates its fleet with multinational crew and expects Japanese seafarers to play a management role with effective communication skills while the latter introduced English as a communication language of its practical onboard training several years ago.

This effort is supported and funded by the Education Ministry as a "Good Practice (GP) project" and consists of two main programs. One is the introduction of English communication to college training ships that give basic onboard training to the college students during their shore-based study. The other is development of English language self-study modules by means of e-learning.

The paper will present first year trials for communicative approach in maritime English training at the Maritime Colleges in Japan, particularly "onboard training through English" and self-learning methods with multimedia technology. Effectiveness of the combination of different learning methods will be discussed. Practical learning experience will be proposed for improving English communication skills in almost non-English environment in Japan.

Key words: GP project, communicative approach, onboard training, e-learning, blended learning,

Introduction

As is often the case with traditional maritime countries, almost all Japanese-controlled vessels are manned by multi-national crews, and the Japanese seafarers are required to play a managerial role both ashore and afloat. In addition to leadership and management skills, English communication skills have become essential for them to work in the multicultural and multilingual environment.

The shipping industry has been requesting graduates from MET institutions to be equipped with practical English skills necessary for working onboard with multinational crew. In response to the demand from the industry, the National Institute for Sea Training (NIST), which operates five training ships and gives practical onboard experience for cadets from maritime colleges and universities, began maritime English training and introduced English as a working language for the onboard training in the early 2000's. As Figure 1 shows, the one-year training program of the NIST is provided for 5th grade maritime college students just before the national exam for the CoC and subsequent sea career as junior officers.

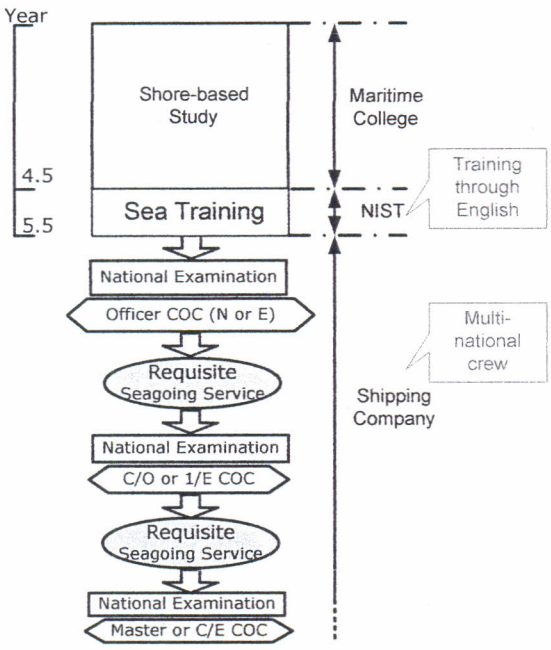

Figure 1 – Japan's MET pathway from Maritime Colleges

The NIST's experience of conducting maritime English training for several years revealed that not only maritime English training but also practical onboard training in navigation or engineering would be ineffective if cadets from shore based MET institutions would not possess fundamental English communication skills. Therefore, it is crucial for the maritime colleges and universities to implement communicative maritime English training in order to equip their students with essential communication skills before proceeding to the NIST's onboard training course.

In order to make the maritime English training more effective with close cooperation between the NIST and shore-side MET institutions, five Colleges of Maritime Technology (Maritime Colleges) jointly decided to introduce English communication to their practical training on the college training ships in 2006. This program is a three-year grant project adopted by the Ministry of Education, Culture, Sports, Science and Technology (MEXT) as a "Good Practice (GP) project" for improving educational courses. Since the training period with college training ships is much shorter than that of the NIST and scattered over an academic year, the scope of the English training should be limited to communication for basic onboard operations, and the practical onboard training should be reinforced with maritime English classes and self-study e-learning modules.

This paper mainly discusses first year efforts of the GP project. Firstly, the section one describes how the first "onboard training through English" was prepared and implemented. Then, effective e-learning methods for supporting communicative maritime English are discussed in the section two. Finally, the section three explains future plans for improving students' communicative competence by the blended maritime English training.

1 Onboard Training through English

1.1 Practical Training onboard the College Training Ship

Each of the five maritime colleges (Toyama, Toba, Yuge, Hiroshima, and Oshima) has its own training ship of approximately 250 GT, which gives essential practical training opportunity to its students. The five maritime colleges have slightly different course progression system; at the Oshima College, 1st and 2nd year students in the maritime technology department learn basic subjects both in navigation and engineering discipline, then specialization begins in the 3rd year. At each year, students take practical training on the college training ship, period of which varies from half a day exercises at the college dock to four-day's training cruises. As they progress in a course curriculum which is a combination of classroom lectures, simulator/workshop exercises, and the onboard training, students obtain theoretical knowledge and practical skills in either discipline and become ready for one year seagoing experience onboard much larger training ships of the NIST. Even though the college training ships do not give students statutory sea training required for the maritime officers' CoC, practical training onboard the college training ship is their first experience of real life at sea and highly influential in their making decision on their future career, that is, which course

to take, navigation or engineering for lower grade students, and whether or not to go to see after graduation for upper grade students.

While the maritime colleges have supplied qualified young people to Japan's deep-sea fleet for more than 100 years, it must be admitted that they have not succeeded in meeting the increasing demand for ocean-going seafarers with good English communication skills. In recent years about the half of the graduates from the maritime colleges choose to take career at sea, and a growing number of which are employed by deep sea shipping companies owing to the booming international shipping industry. However, curricula of the onboard training at the maritime colleges have not been designed to qualify their students for maritime officers working in the international shipping as far as English communication skills are concerned. Take the maritime vocabulary for example. Although nameplates of almost all equipment, machinery, and instruments are written in English, Japanese translation is given to the nameplates of essential equipment. As a result, students are inclined to read Japanese translation and remain unfamiliar with the English maritime vocabulary. Therefore, students are to be confused when they proceed to the sea time on the NIST's training ships where most command/confirm type communication are carried out in English, and some of them who take their first career on mixed-manned merchant vessels have more difficulty in communicating with other crew members who do not speak Japanese unlike the NIST's instructors.

1.2 Introduction of English Communication to OBT

Besides the demand from Japan's major ship operators, the NIST also requests the 5th year college students to be more familiar with basic maritime vocabulary and communication phrased for effective maritime English training onboard its training vessels. In order to respond those requests for better English skills of the maritime college students, each maritime college has been planning to improve its maritime English curriculum. This plan was realized when it was adopted by the Education Ministry as a "Good Practice (GP) project" in 2006. Since a proposal for the GP project was made jointly by the five maritime colleges, and the wide outreach of the program was highly appreciated by the Ministry, introduction of English communication to the college training ships was to be implemented at all maritime colleges in a harmonized way.

1.2.1 Planning and Preparation

Just after the adoption of the GP project, a working group was organized to prepare for "the onboard training through English" at the five maritime colleges. The working group, which comprises training officers of the college training ships, agreed on the following basic policy.

- "The onboard training through English" should be implemented at five colleges in a harmonized way.
- Scope of "the onboard training through English" should be command/confirm type basic communication that can be a basis for the NIST's maritime English training.
- Common communication phrases should be used at five colleges.
- The communication phrases should be based on the IMO SMCP.
- The communication phrases should also take into account ones used on the NIST's training ships, Japan's ocean-going merchant ships, and training ships in English speaking countries.

The working group also agreed that the first trial of "the onboard training through English" should be implemented in the first half of the academic year 2007, which begins in April in Japan, and necessary preparation should be made well in advance.

In order to collect real-life onboard communication phrases, research visits were made to several places, such as a training ship of the NIST, SEIUN-MARU, a training ship of

California Maritime Academy (CMA), GOLDEN BEAR, and a pure car career of MOL, FREEDOM ACE. At the time of the research visit to the SEIUN-MARU, about 40 cadets from four Asian countries: the Philippines, Indonesia, Vietnam, and Bangladesh, undertook onboard training together with Japanese cadets from the maritime colleges and universities. Therefore, despite the fact that the SEIUN-MARU was sailing near the coastline of Japan, the atmosphere was very international and the working language was English. In an interview with Commodore Capt. Keever of the GOLDEN BEAR, he admitted that cadets at the CMA had tendency to use longer phrases for communication with other ships, which sometimes caused misunderstanding or confusion to other ships' non-native English speakers. He added that it was difficult for the cadets to realize the importance of the SMPC until they encounter difficulties in communicating with seafarers from non-English speaking countries. On the FREEDOM ACE, Japanese officers, Filipino officers and ratings were working together, and it was impressive that much shorter phrases than the SMCP were employed during stations for leaving/entering port to avoid communication "traffic jam" between stations.

A list of communication phrases for "the onboard training through English" was prepared a couple of months before the trial. The phrases are mostly based on the IMO SMCP and some more, in particular for engine room communication, were added. Scope of the communication phrases was limited to such basic situations as formation and a role call, entering/leaving port, anchoring/leaving anchorage, and main engine operations so that students would not be overwhelmed but they could feel a sense of achievement. A book of the communication phrases was handed out to each student, and several practices in speaking the phrases were made at maritime English classes. While the students became familiar with the phrases and gained some idea of the onboard communication in English in the course of the practices, they were still unsure of which phrase they should use properly and timely in a given situation. Nonetheless, there was a hope to make a small success at the trial because the students looked motivated and showed positive attitude toward the coming training cruise partly conducted in English.

1.2.2 Implementation

At the time of writing this paper, all five colleges have not completed the trial of "the onboard training through English"; therefore, it is premature to evaluate an overall outcome of the first year trial of the project. In this reason, this paper mainly discusses "the onboard training through English" implemented at the Oshima College of Maritime Technology which the author belongs to. At the Oshima College, 38 students (19 navigation course and 19 engineering course) in the 4th year of the maritime technology department experienced English communication onboard the college training ship, OSHIMA-MARU, for the first time in the college's long history. The training cruise was for four days calling three ports around the Inland Sea of Japan.

At the beginning of the cruise, the students seemed a little embarrassed in communicating with their colleagues and instructors in English, which is very unusual for most Japanese in their daily life. However, once they were stationed for leaving the home port of the training ship, they tried to give command or report back using English phrases in a very serious manner because they already knew that accurate and unambiguous exchange of information is of utmost importance for safe operations of the ship regardless of language used. The instructors and students alike tried to use as many English phrases as possible to create English environment onboard. However, the communication medium was promptly switched from English to Japanese in some critical situations. Examples are mooring operation in which tension of mooring lines became too tight, or failure in starting the main engine remotely and changing over control positions, both of which did actually occur during the

training voyage. It is obvious that safety of the ship comes first and shall not be compromised for the sake of the training of English communication.

During the four-day training some students often stammered in talking over the microphone and had difficulty in sending clear messages to other stations. Some other students, on the other hand, spoke fluent English and communicated with confidence. Although performance of each student varied depending on their English proficiency at that time, it is reasonable to say that all the students made good progress in practical English communication for such a short period and became more positive on the need for improving their communicative English ability. It is likely that this positive attitude of the 4th year students will make their next training cruise in November more fruitful and exert favorable influence on maritime course students in other grades.

1.2.3 Feedback

At the end of the four-day training cruise, all 38 students were asked to give their feedback on the English communication onboard the training ship according to the questionnaire (Appendix A). The navigation course students seemed to have more difficulty than the engineering course students both in speaking and listening, (Q. 1&2). This cannot be attributable to the navigation course students' inferiority in English ability to their counter part, but simply because much more phrases and opportunities of English communication were prepared for the navigation course students. Several engineering course students complained that communication between the engine room and engine control room was disturbed by the noise of the engine room machinery. On the other hand, the listening difficulty for the navigation course students was due to their unfamiliarity with a number of communication phrases or insufficient listening comprehension skill (Q. 3).

Students' positive attitude toward the English communication can be explained by the fact that majority of the students acknowledged the necessity of the English communication for the onboard training (Q. 4). More navigation course students considered English communication to be necessary for their future career than the engineering course students, which probably reflected a recent trend that most navigation course students wish to be officers on ocean-going ships, whereas about a half of the engineering course students seek positions in maritime related shore companies (Q. 5). Some students, however, thought that "the onboard training through English" was not effective due to the short period of the training (Q. 6).

There is fairly general agreement among the students that English communication should be introduced to the onboard training from the lower grades and more exposure to communicative English is necessary at school (Q. 7). From those opinions and some comments given to the Q. 8, it can be understood that it is difficult to switch communication languages from Japanese (L1) to English (L2) suddenly and it takes time to get used to practical communication in L2 for most students living in homogeneous L1 environment.

2 E-Learning for Maritime English Training

2.1 E-learning through a Language Management System (LMS)

The advent of the information communication technology (ICT) has been gradually changing the learning environment from teacher-centered learning to student-centered learning. E-learning is a typical example of the student-centered learning arrangement where the teacher and learner are separated by physical distance and time, which are bridged by technological advancements (Williams, 1999). In recent years an increasing number of colleges and universities employ a Learning management Systems (LMS) for conducting e-learning in effective ways. The LMS is a system that provides a base on which to carry out e-learning and

usually equipped with such functions as learner registration, learning contents management, learning history and progress management, assessment management, and communication between learners and teachers (NIME, 2007). According to a report published by the National Institute of Multimedia Education in 2006, the LMS was used by 46.9% of the universities and 63.6% of the colleges of technology in Japan (NIME 2007).

The Oshima College of Maritime Technology has been implementing a college-wide e-learning project by introducing a commercial LMS, WebClass, improving ICT infrastructure at campus, and developing e-learning contents. This project was also supported and funded by the Education Ministry as a "Good Practice (GP) project". A number of e-learning contents, which fall into one of nine categories, are currently developed, and maritime English is one of the nine content areas.

2.2 Planning e-Learning Contents for Maritime English

At the time of writing this paper, several e-learning contents for maritime English training are at planning or development stages. Topics of those contents are maritime vocabulary, internal communication for bridge watch keeping, leaving/entering port, machinery operations etc., and external communication through VHF. Those contents are aimed to improve students' communicative maritime English ability for basic onboard operations.

At the Oshima College, general English is taught by English teachers to students in all grades while maritime English is taught by technical instructors either in nautical science or marine engineering to students in the 4th and 5th grade. Total lecture hours for the general English classes are 570 while those for maritime English classes are 90 hours. Until the GP project was launched, there had been little liaison or cooperation between English teachers and technical instructors who taught maritime English, and maritime topics had never been brought up at the general English classes because the English teachers had limited knowledge of technical aspect of the subject matter. As a result, even the 4th year students in the maritime technology department have little maritime English vocabulary. It seems too late to acquire basic maritime vocabulary, which communicative English training should base on, from the 4th year, and 90 hours seems insufficient to build-up required communicative competence for successful shipboard operations.

However, in developing the e-learning contents, significant improvement was observed from a perspective of teaching English for specific purpose (ESP), which is collaboration between English teachers and instructors in the maritime technology department. Before planning the e-learning contents, several research visits were made by English teachers together with technical instructors to maritime related places, such as a LNG career entering a LNG terminal near the college, a VTS center on Osaka bay, the Tokyo University of Marine Science and Technology, and the NIST. Experience of listening to technical communication onboard the LNG career or between ships and the VTS center was invaluable for the English teachers in order to familiarize themselves with subject matters of maritime English. Discussion with faculty members of the two MET institutions involved in maritime English training was very constructive in that facilitation of closer cooperation among the MET institutions and development of harmonized maritime English curriculum was agreed upon.

In planning and preparing the e-learning contents, the English teachers and technical instructors discussed which communication skills should be improved by the e-learning contents and which audio-visual materials, such as pictures of onboard equipment and recording of onboard communication, should be used for achieving the training objectives. Both English teachers and technical instructors benefited from those discussions. The English teachers improved their understanding of the subject matters while the technical instructors also improved their knowledge of teaching English. The collaboration or "twining" of English

teachers and maritime instructors is a key element in creation and delivery of maritime English curriculum (METNET, 2001).

2.3 Preliminary Research on Learning Maritime Vocabulary

Before developing an e-learning content for maritime vocabulary, a preliminary research was conducted to confirm effectiveness of imagery for memorizing English vocabulary. In this research, 38 students in the 4th year of the maritime technology department (19 navigation course and 19 engineering course) were asked to memorize 40 English words (names of ship's equipment), most of which were unfamiliar to them, in two methods. One is a "Japanese-English (J-E)" method where the students were given a list of vocabulary with English names of the equipment on one side and Japanese translation on the other. The other is a "Picture-English (P-E)" method where the students were given English names of the equipment with their picture images. The students took a first test consisting of two stages for assessing ease of memorizing of the two methods, and a second test for retention one week after.

2.3.1 The First Test

At the first stage of the first test, the navigation course students memorized 20 words (A group) by the J-E method and the engineering course students memorized the same 20 words by the P-E method. About 10 minutes after memorizing, the students in both courses took a vocabulary test on the A group words. At the second stage of the first test, the navigation students memorized the other 20 words (B group) by the P-E method and the engineering students memorized the same 20 words by the J-E method, then they took another vocabulary test on the B group words about 10 minutes later. Figure 2 shows a result of the first test.

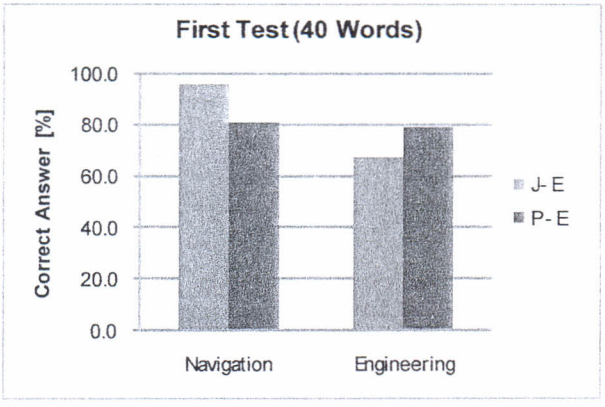

Figure 2 – Result of the First Test

As can be seen in Figure 2, the navigation course students memorized better by the J-E method whereas the engineering course students did better by the P-E method. In particular, the navigation course students marked higher ability of memorization by the J-E method. The test result has a correlation with the students' preference to the method of memorizing vocabulary. The students were asked to answer a questionnaire after the second test (Appendix B), and most navigation course students preferred the J-E method while most engineering course students had preference to the P-E method (Q. 3). This tendency may be explained by the fact that the navigation course students are more used to memorizing words or phrases appearing in maritime laws or navigational rules. In addition, they usually show higher English proficiency than the engineering course students, which means that they are better at memorizing vocabulary by the J-E method commonly used among Japanese students. On the contrary, the engineering course students are used to performing cognitive activities by associating with visual materials such as graphs, diagrams and charts, which may explain the result of the first test and their preference to the P-E method.

2.3.2 The Second Test

The second test took place one week after the first test, and the result was not less interesting than that of the first one. 20 words with high correct answer rate at the first test (10 words memorized by the J-E method and another 10 by the P-E method) were selected for the navigation and engineering course students respectively. Then, the students in each course took the retention test on the different 20 words by both methods. Figure 3 shows a comparison between the first and second test.

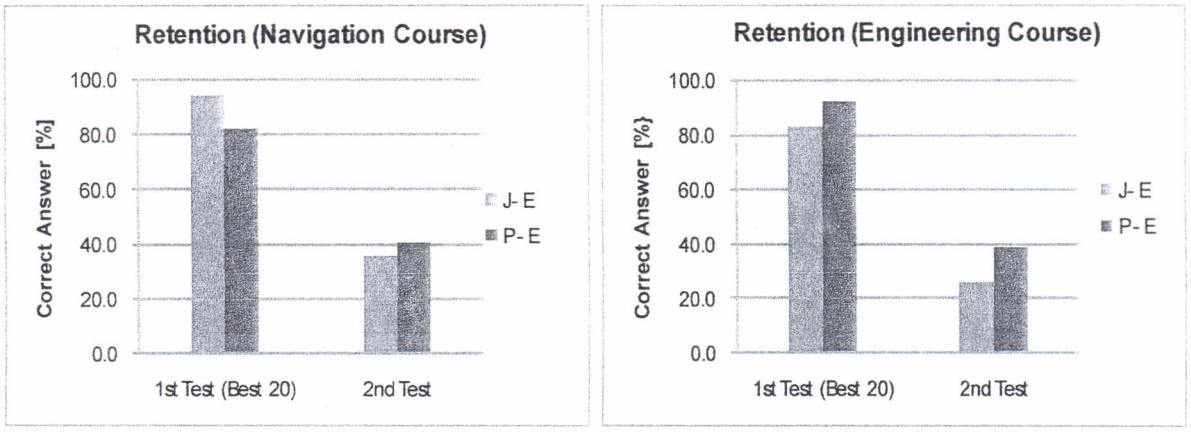

Figure 3 – Comparison between the First and Second Test

Although the Figure 3 indicates relatively low retention rates of the both courses' students, higher retention can be seen by the P-E method in the both students groups. It can be easily understood that the engineering students demonstrated better retention by the P-E method because they were better by this method at the first test and preferred it. However, it is quite interesting that the navigation students showed slightly higher retention rate by the P-E method despite their worse result by this method at the first test and their dislike for it.

2.3.3 Theories for Memorizing Vocabulary

It is premature to conclude, with the single research result, that the P-E method is better way of memorizing vocabulary than the J-E method; however, it will be an effective mnemonic and worth applying to e-learning contents for maritime vocabulary. There are underlying theories behind the visual mnemonic. Paivio (1969) argued in his "dual coding theory" that information can be stored or coded in our long-term memory in two different ways: verbally and visually, and the information is more easily remembered if it is stored by more than one coding. Since most maritime vocabulary consists of concrete words that can be associated with visual images, they can be coded in two ways and are likely to be recalled better than a list of words. The other theory is Bower's (1972) "relational-organizational hypothesis", which does not suppose that imagery helps memory simply by virtue of additional coding, but rather imagery improves memory because it can facilitate more associations between items to be remembered and other information already in memory storage. According to the hypothesis, maritime vocabulary can be better memorised and retained if students learn a group of interrelated target words with visual images. A picture showing several mooring equipment, such as bitts, hawsers, and fairleads, is a good example of the contextual association. Considering the research result and two supporting theories, effective use of visual images will be expected to facilitate not only building up maritime vocabulary but also learning onboard communication phrases through e-learning.

3 For Further Improvement of Blended Maritime English Training

The year 2006 was the first year of the three-year GP project and most of the time was spent for the preparation. The year 2007 is a year for implementation, and the coming year 2008

will be a year for improvement and arrangements for sustainable training after completion of the grant project. Taking into account the feedback from the first year trial of "the onboard training through English" and the preliminary research on effective use of imagery for e-learning contents, some measures to further improve the blended maritime English training will be discussed in this section.

3.1 Effective "Onboard Training through English"

3.1.1 Earlier Exposure to Practical English Communication

It is obvious from students' response to the questionnaire that it was too late for the 4th grade students to begin practicing English communication on the training ship. The students were more or less confused by the sudden change from only-Japanese communication to partly-English communication at the final stage of their onboard training at school. As some students suggested in the questionnaire that English communication should be introduced from the lower grades starting from simple and short phrases like steering orders, then longer phrases like handing over watch-keeping duties, and finally phrases for inter-ship communication for essential shipboard operations. The earlier students become exposed to maritime English communication, the more naturally they consider English as a means of onboard communication and the less likely they feel confused about working languages onboard.

3.1.2 Communicative English Training at School

In addition to the earlier introduction of English to the onboard training, many students proposed in the questionnaire that there should be more opportunity to learn communicative English at school, and the practical communication training on the training ship should be augmented by the maritime English classes. It is quite obvious that several communication practices a year are far from effective nor efficient for students to improve their communicative maritime English skills unless they are given more opportunity to practice at school. However, unfortunately, maritime English classes at the Oshima College still put more emphasis on reading and translating than listening and speaking. Therefore, the maritime English curriculum should be redesigned so that students can spend more time for oral communication in maritime contexts. If the maritime English classes would provide more communicative and content-based learning environment for students, effective transfer of language skills from the classroom to practical situations would be possible and a synergy effect of the blended learning would be expected.

3.2 Development of E-learning Contents

Computer aided learning (CAL) media such as CD/DVD-ROM software and e-learning contents have been widely used at MET institutions and recognized as effective training tools to support classroom lectures or practical training of a number of MET programs including the maritime English. Major advantage of the e-learning is student-centered and self-paced learning style, which enables students to learn a subject anytime, anywhere and as much as they would like to. This type of learning arrangement is particularly effective if it is appropriately blended with classroom lectures and practical training.

However, in the questionnaire, only one student suggested that e-learning should be used to improve their communicative competence. This low approval rate was mainly because of low popularity of e-learning contents for maritime English among the students. In fact, they had never experienced any computer aided learning (CAL) methods for maritime English before.

Therefore, it is expected that more students will recognize effectiveness of e-learning contents in augmenting practical communication training as they experience a good combination of onboard training and computer aided self-learning. Taking into account the homogeneous and monolingual environment in Japan where it is very rare in daily life to communicate in English, the e-learning material should be communicative style and supported by graphics or

picture images to embody a sense that another person is talking to students in the material. Currently, several e-learning contents are under development in such topics as maritime vocabulary, onboard communication for entering/leaving port, anchoring/leaving anchorage, bridge watch keeping, and machinery operation with pictures, sounds, and animation movies.

Conclusion

In response to growing demands from the Japanese shipping industry and NIST that maritime college students be equipped with basic English skills for better communication with multinational crew on the Japanese fleet and more effective maritime English training on the NIST's cadet ships, five maritime colleges have introduced English communication to the practical training on the college training ships. A proper combination of communicative maritime English classes, e-learning with multimedia technology, and their application to actual onboard operations is imperative to improve students' communicative competence in maritime English.

At the Oshima College, 4th year students in the maritime technology department carried out some of the essential shipboard operations through English for the first time, and their attitude and feedbacks were generally positive. The preliminary research on e-learning materials suggested that use of imagery would be effective in memorizing maritime vocabulary and communication phrases. In order to make the blended learning of the maritime English more effective and sustainable even after the completion of the GP project, English communication should be introduced from lower grades, the maritime English curriculum should be revised by focusing more on communication, and effective e-learning contents of communicative style should be developed to support students' self study. Those tasks are planned to be carried out step by step with close cooperation between English teachers and technical instructors from 2008 onward.

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Biography

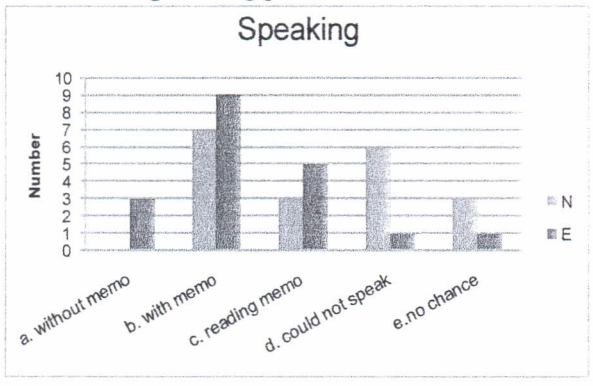
The author is an instructor of marine engineering and maritime English at the Oshima College of Maritime Technology in Japan. He is also a first engineering officer of the college training ship "Oshima-maru". Before joining the College he had 14 years onboard experience as an engineering officer and instructor of marine engineering of the NIST. Awarded BSc degree in Maritime Science at the Kobe University of Merchant Marine and MSc in Maritime Affair (MET) at the World Maritime University. Member of the IMLA and IMarEST, 1st Grade Maritime Officer (Engineering)

Appendix A Questionnaire on English Communication onboard the Training Ship

June 29, 2007

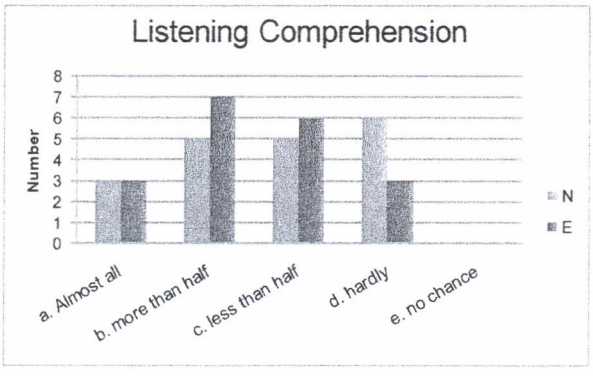
4th year, Maritime Technology Department

1. Did you speak English for command/confirm communication during the stations for entering/leaving port?



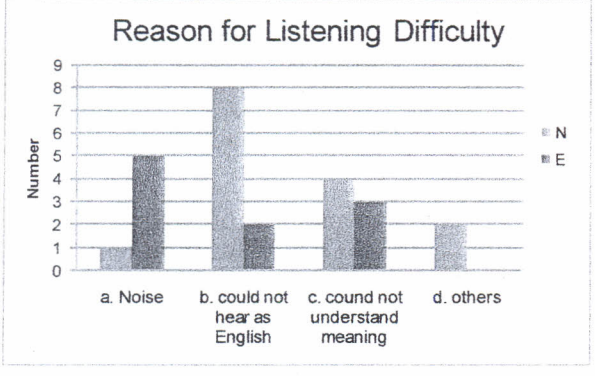
a. I spoke English without a memo, and understood what I said.
b. I spoke English with a memo, but understood what I said.
c. I just read a memo; I did not understand what I said.
d. I could not speak English properly even with a memo.
e. I did not have any chance to speak English during the stations.

2. Did you understand what you heard in English during the stations for entering/leaving port?



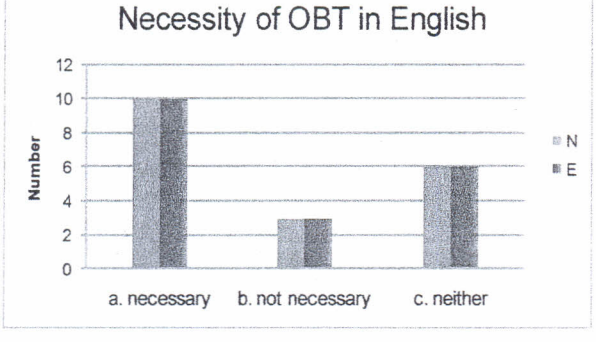
a. I understood almost all of what I heard.
b. I understood more than half of what I heard.
c. I understood less than half of what I heard.
d. I hardly understood what I heard.
e. I did not have any chance to hear English during the stations.

3. <u>If your answer to the question 2 is c. or d. (not understand),</u> why is that? (multiple answers allowed)



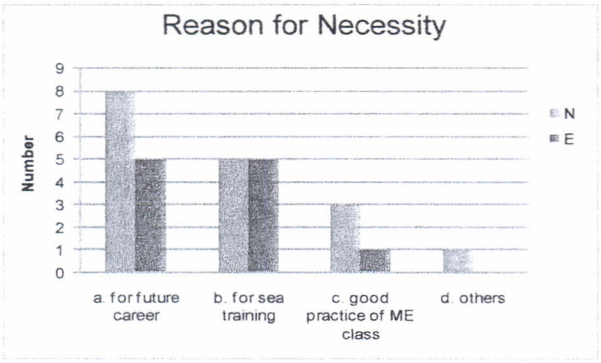
a. I could not hear properly because of the noise.
b. The voice was clear, but I could not catch what was said as English.
c. I heard properly as English, but I could not understand the meaning.
d. Others ( )

4. Do you think that English communication is necessary for the onboard training?



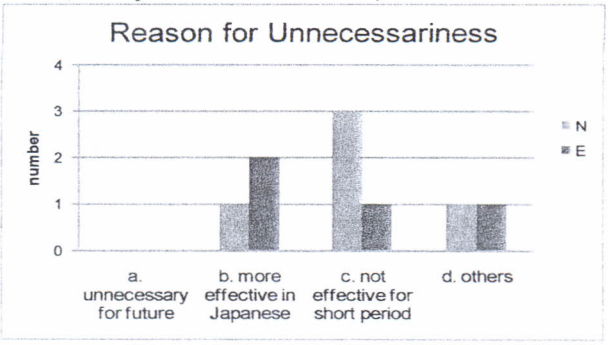
a. Necessary
b. Not necessary
c. Neither

5. If your answer to the question 4 is a. (necessary), why is that?
(multiple answers allowed)



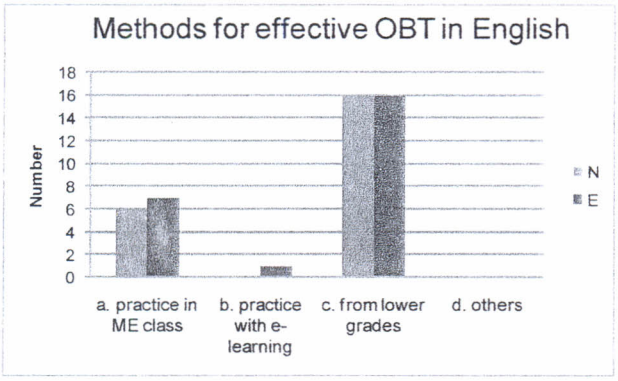
a. Maritime English communication is necessary for my future career.
b. Maritime English communication is necessary for the NIST's sea-training program after school time.
c. It is a good opportunity to use what I have learnt in the Maritime English class.
d. Others ( )

6. If your answer to the question 4 is b. (not necessary), why is that?
(multiple answers allowed)



a. Maritime English communication is not necessary for my future career.
b. I can understand the training content more when it is conducted in Japanese.
c. It is not effective because the training period is too short.
d. Others ( )

7. What do you think will make "the onboard training through English" more effective?
(multiple answers allowed)



a. Students should practice the onboard communication phrases during the maritime English classes.
b. Students should be able to practice the onboard communication phrases with e-learning materials.
c. English communication should be introduced from the lower grades.
d. Others ( )

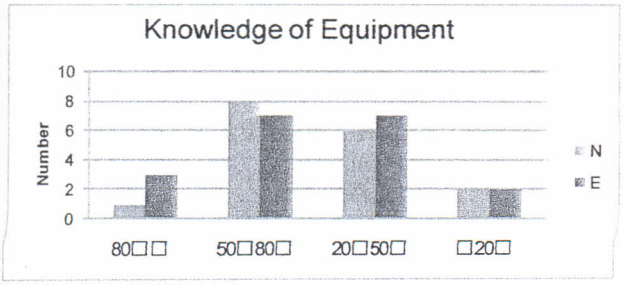
8. Please give your opinion about "the onboard training through English".
[Typical opinions]

- Good to introduce English communication to the onboard training
- Very useful to use English in practical situations
- More confident as getting used to English communication
- Difficult to switch communication languages all of sudden
- Dangerous to use unfamiliar language in critical situations
- Better to start with simpler and shorter communication phrases
- Insufficient time for preparation
- Start practicing basic maritime communication from the lower grades
- Necessary to have more opportunity to use English in daily school life

Appendix B Questionnaire on the Maritime English Vocabulary Test

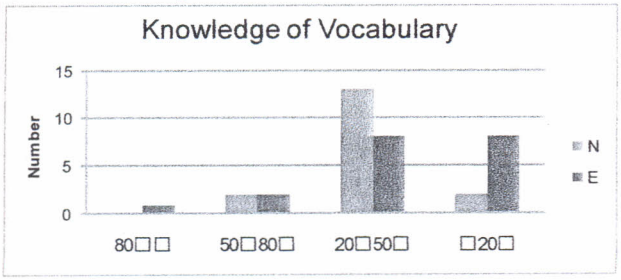
April 25, 2007

4th year, Maritime Technology DepartmentHow much percentage of the onboard equipment that appeared in the test did you know in terms of <u>their use or function</u>?



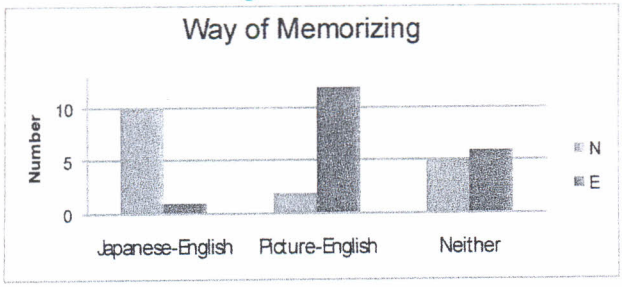
a. more than 80%
b. 50%□80%
c. 20%~50%
d. less than 20%

1. How much percentage of the onboard equipment that appeared in the test did you know in terms of <u>their English names</u>?



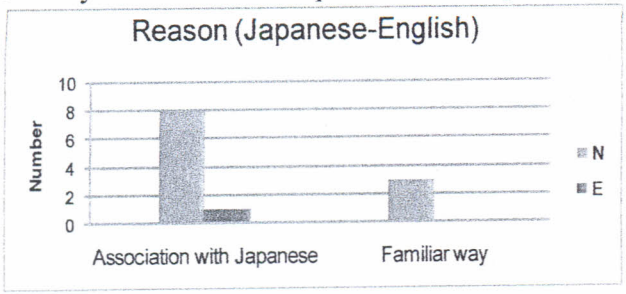
a. more than 80%
b. 50%□80%
c. 20%~50%
d. less than 20%

2. Which method do you prefer in memorizing maritime English vocabulary, "Japanese – English" or "Picture – English"?



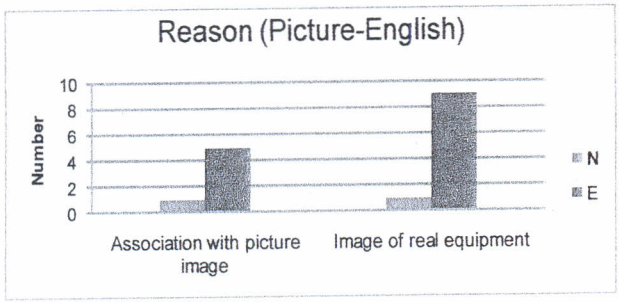
a. "Japanese – English"
b. "Picture – English"
c. Neither

3. If your answer to the question 3 is "Japanese – English", why is that?



a. Because I can associate English terms with Japanese ones which I already know.
b. Because it is my familiar way of memorizing English vocabulary
c. Other reasons□ □

4. If your answer to the question 3 is "Picture – English", why is that?



a. Because I can associate English terms with picture images.
b. Because I can imagine real equipment easily.
c. Other reasons□ □

TEACHING DECK OFFICER CADETS HOW TO GET RADIO MEDICAL ADVICE

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ABSTRACT

A future deck officer must be able to get radio medical advice in case of a serious injury or a disease on board a ship. He should contact a radio medical center and transmit the necessary data regarding the ship and the patient. It is important for him to describe the symptoms of the case as well as some other physical findings concerning the patient accurately. A future deck officer must be able to receive the doctor's recommendations on the radio so the first aid can be rendered. Development of this complex skill of radio communication is possible by virtue of a complex of exercises. These exercises are based on communicative approach in combination with other approaches. Good knowledge of special subjects and authenticity contribute to the success of teaching and learning. Manual "Radio Medical Advice" (Zykova V. N., 2007) may be used as a teaching material for the senior cadets of the Navigation department.

Key-words: radio medical advice, injury, disease, illness, skill, communication.

2. INTRODUCTION

One of the English textbooks for the cadets of the maritime colleges contains a wonderful expression: "Nowadays a fisherman should be a walking computer with so many instruments to handle." It is absolutely true. Moreover, a navigator must know what-not. It is a matter of necessity for him to express himself in English in different fields of knowledge, including even medicine.

An ability to get radio medical advice in case of a serious injury or a disease on board a ship without a doctor is considered to be the one of the most important skills for a future deck officer at present. It is rather common nowadays for a navigator to contact a Radio Medical Center in order to inform a duty-doctor of the patient's condition on board the ship and to receive the necessary specialist recommendations.

According to the International Radio Medical Center (headquartered in Rome) in all cases of illness or injury on board a ship one is advised to call the above center promptly possibly before administering any medicines. A navigator must be ready to transmit certain information regarding the ship and the patient. So a future deck officer must be able to give a brief report of physical findings (patient's temperature, blood pressure, pulse and respiratory rates, onset of a disease, accurate description of symptoms and location of pain, etc).

According to the specialists' opinion ("Sevryba" hospital, Russia) there are some serious cases of injuries and diseases on board both fishing and merchant ships when radio medical advice and specialist assistance are urgently required: acute appendicitis, perforating ulcer of the stomach, gastrointestinal bleeding, stenocardia, hypertensive crisis, spinal fracture, fracture of the thigh, etc.

So, we are to teach the cadets the most common symptoms of some injuries and diseases. They must be able to explain a specialist the location of the patient's pain, i.e. to know the names of the parts of the body and to tell a duty-doctor about the first aid rendered.

It is quite understandable that to develop the above mentioned complex skill of radio communication concerning getting radio medical advice teachers of Maritime English should develop all four communication skills in their cadets.

Manual "Radio Medical Advice" (Zykova V.N., 2007) may be used as a teaching material for achieving this purpose. Our presentation is devoted to some theoretical fundamentals of the manual (Section 2), its general content (Section 3) and conclusion.

3. THEORETICAL FUNDAMENTALS OF THE MANUAL

3.1. Communicative approach

Practically all modern English textbooks and manuals are claimed to be based on a communicative approach. There is no doubt that it is the most progressive approach these days as we teach our students communication in English. They must be able to establish, maintain their professional communication and achieve certain purposes in it as a result. We teach them through a complex of different exercises, starting with practice activities and finishing with communicative activities imitating real situations:

1. Study the following words and word combinations you might use while getting medical advice on the radio.
2. Listen to the doctor's recommendations and write them down in Russian and be ready to check them working pairs.
3. Read and memorize the dialogue between the operator of the Radio Medical Center and the chief mate of the m/v Sever. Act it out in pairs.
4. Make up a dialogue using the following table.
5. Inform the doctor about the health condition of the sick person on board. To make your report complete fill in the blanks with the necessary words.
6. Correct the radio message of the speaker using the information given in the brackets. Do this exercise according to the model.
7. Agree with the speaker and say something to develop the idea as in the model.
8. Answer the questions.
9. Work as an interpreter.
10. Ask all possible questions to get the necessary information.
11. Make up a dialogue according to the following situation. You are a doctor of the Radio Medical Center who received the urgent message from the ship. Ask the chief mate of the ship all the necessary questions and give some advice.
12. Read the covering note prepared by the chief mate. Make up a dialogue between the chief mate and the specialist of the Radio Medical Center on the basis of this note.
13. Make up a dialogue according to the following situation. You are a chief mate who is to contact a Radio Medical Center due to the case of serious injury on board and to get some specialist advice to render the patient first aid.
14. Make up a dialogue between the specialist from the Radio Medical Center and the chief mate using the following information.

15. Listen to the dialogue between the chief mate and the medical specialist prepared by the other members of your group and make up the covering note.

16. Read the newspaper article. Agree or disagree with the following statements.

So this complex of exercises helps to teach our students professional communication regarding the issue of getting radio medical advice. The students in the final activities simulate real situations on board ships.

There is another aspect in the communicative approach. We should not just create real situations at the lessons. We should teach professional communication asking students to communicate at the lessons in pairs and in groups. For instance, giving students the task to make up a covering note after listening to the other students' dialogue may be considered as a mini-project work.

One more issue is often connected with the communicative approach that is the use of the native tongue in teaching English or any other foreign language, let alone in teaching professional communication. Traditionally, a native language is not supposed to be used in communicative teaching. We believe that this principle should not be strictly followed. Our students will not be awarded the diplomas of doctors. Their job will be different. Our students often do not know the professional situations they might be involved in. In other words, they do not know (sometimes it is not necessary) the subject in their native language well. So, we believe that native tongue may be used in teaching professional communication. There is no contradiction in many cases: the use of the native language is the quickest way to achieve the teaching goal. Why not to combine different approaches if this facilitates teaching and learning processes? Combination of different approaches might be rather successful.

3.2. Specialist knowledge of a Maritime English teacher

Word "combination" regarding different knowledge in special subjects can be applied to Maritime English teacher.

It is a well known fact that Maritime English teachers are nowhere to be taught. They learn from books, Internet, conferences and colleagues gradually mastering specialist knowledge and skills. It is sometimes a painful but always interesting process. And there is always a question how deeply they should "plunge in the sea of the unknown".

We came across the same problem while working at the manual. The medical books and conversations with the doctors proved to be very complicated. The solution was in finding common situations concerning serious injuries and diseases on board. Radio communication makes the whole thing easier as there are certain procedures everyone should follow. So the doctors from the "Sevryba" hospital chose the common situations and the specialists of the Radio Medical Center in Rome specified the procedure. Our task was to gather the teaching material and to prepare the complex of exercises.

So, the answer to the question about the specialist knowledge of a Maritime English teacher is probably this. We need to "plunge" into the specialist subject as deeply as it is required by the real situations. We should see clearly what our students are to know and do when there is a case of a, say, spinal fracture on board. We are to teach them to develop and follow certain strategies in this or that situation.

3.3. Authenticity

The issue of authenticity is very crucial in teaching Maritime English. The situations of professional communication created by a teacher at the lesson should be as close to the real life as possible. We tried to achieve this purpose with the help of specialists while working at the manual. The first aid usually rendered in case, for instance, of a chemical burn or a gastrointestinal bleeding is always prompted in the manual. This is what the future deck officer might hear from a doctor of the Radio Medical Center.

It is also important to have authentic materials. Thus, some texts of the manual were taken from the British and American newspapers and books. A document may also look authentic. A deck officer is to deal with a big amount of papers. So, our students are surely to be interested in what, for example, a real bill of health looks like.

The tasks may be authentic at the lesson as well: "Listen to the radio communication and write down the medical advice given". Then our students are more motivated. Even studying new medical terms may become motivating if you ask your students to read them and if you say that they may hear these words on the radio.

Describing real persons, places and things that all students know we may involve them in some interesting activities. "It happened in 1942 in the Barents sea 175 miles from Murmansk" (It is the native city for the most of the students)… The hospital occupied the secondary school standing on the hill (the students may guess what school it was)…

So, authenticity is a vital thing in teaching professional communication regarding all its aspects including getting radio medical advice.

4. CONTENT OF MANUAL "RADIO MEDICAL ADVICE"

The manual consists of introduction in Russian, 4 parts, the English-Russian and Russian-English dictionaries and some standard marine communication phrases concerning getting radio medical recommendations.

Part one "Communication with a radio medical center" includes the texts giving the general idea of radio communication at sea for getting medical consultation. Here one can find sections devoted to the communication with Medical Direction and Hospitals, International Radio Medical Center, medicine chest, covering note and guidelines for effective radio communication. All the given texts are provided with exercises.

Part two describes the most common diseases and injuries on board a ship requiring urgent specialist medical examination and assistance. Section one of this part gives the symptoms of these diseases and injuries and the first aid recommendations. Section two consists of a complex of exercises.

The symptoms of some infectious diseases and serious injuries are described in ***part three*** in detail. This part includes 6 sections and they are burns, fractures, bleeding, foreign body, frostbites and infectious diseases. Special attention is paid to the first aid to be rendered. Every section is supplied with a number of exercises.

Part four is entitled "Additional material" and divided in 6 sections. They mainly consist of different texts including newspaper articles, some interesting facts, proverbs, sayings and humour. For instance, section three gives some English expressions having nautical origins and including a medical term. "***To turn a blind eye***" means to ignore. "***During the Battle of Copenhagen Admiral Nelson, as second in command complained he could not see the flag signal from his superior which ordered him to break off the bombardment. He had deliberately placed the telescope to his blind eye and proceeded to ignore the order, with glorious results***". These additional materials make learning more interesting.

5. CONCLUSION

1. An ability to get radio medical advice is one of the most important skills for a future deck officer.
2. He must be able to describe the main symptoms of a disease or an injury on board and to give a brief report of physical findings regarding the patient. He should be able to receive all the medical recommendations on the radio.

3. Teaching professional communication should be based on the communicative approach in combination with other methods. Native tongue may be used as the quickest way to achieve a teaching purpose.
4. Rather deep specialist knowledge is required from the teacher of Maritime English.
5. To make learning process more successful authentic texts, situations, documents and characters are extremely necessary.
6. Manual "Radio Medical Advice" may be used as the teaching material for the senior cadets of the Navigation department.

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Maritime English Initiative at TUMSAT

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Abstract

This paper introduces the Maritime English Initiative at the Tokyo University of Marine Science and Technology (TUMSAT) supported by a grant from the Ministry of Education, Culture, Sports, Science and Technology of Japan. This ongoing grant project aims at improving Maritime English Education at the Tokyo University of Marine Science and Technology by (1) establishing an effective and practical Maritime English curriculum with hands-on simulator and lab sessions and onboard training (2) producing teaching materials including a Maritime English database, (3) developing a test of Maritime English that can measure Maritime English competence. The paper first describes the Maritime English curriculum at the TUMSAT with a special emphasis on the 5-day intensive Maritime English seminar held in the summer of 2006, and then covers the teaching materials and the Test of Maritime English Competence (TOMEC), which can be used for screening and/or assessment purposes. Finally, the authors propose to share, over the Internet, the products of this grant project with teachers of Maritime English at various MET institutions in the world and ask for international cooperation in improving these teaching materials.

Key words: Onboard Maritime English Training, Maritime English Database, Maritime English Testing

1 Introduction

Teaching English in a country like Japan where English is a foreign, rather than second, language presents a special challenge for English teachers since students feel no need to communicate in English both in their daily and academic lives. When it comes to teaching Maritime English necessary for prospective Japanese seafarers who work at sea on muti-lingual crew vessels, the problem is further compounded by the lack of sufficient knowledge on the part of English instructors and the scarcity of adequate teaching materials.

In order to help young cadets to acquire competent and confident use of Maritime English at sea, the Tokyo University of Marine Science and Technolgy launched a new project called the Maritime English Initiative (henceforth, MEI) in 2005 under a 3-year grant offered by the Japanese Ministry of Education, Culture, Sports and Technolgoy.

The next section of this paper introduces the new Maritime English Curriculum at the TUMSAT developed under the grant, which emphsizes practical use of Maritime English through hands-on simulator and lab sessions and onboard training. The third section covers the teaching materials developoed under the MEI, including the Maritime English database. In order to evaluate the effectiveness of the newly introduced curriculum, we have developed a test of Maritime English, which is the topic of the fourth section. Finally, we will finish the paper with an invitation to share the outcomes of our comprehensive project on the Internet, and a call for international cooperation in further improving the teaching materials and the Maritime English test made available through the MEI.

2 Maritime English Curriculum at TUMSAT

2.1 General English Requirements and Maritime English Courses

Students enrolled in the Faculty of Marine Engineering at the TUMSAT are required to take four mandatory English courses (two in each semester) in their first year, which aim at developing the four skills in general English. Students who wish to obtain a deck or engine license must take two additional Deck or Engine English courses later. The content of these courses has been improved by utilizing teaching materials developed under the MEI such as pictures, video clips, and vocabulary lists, and for year 2007, by team-teaching with the fourh author of this paper, who is a certified English teacher with sea experience.

2.2 Hands-on Maritime English Seminar 2006

Bulding upon the knowledge of both general and Maritime English developed in the first two and half years, a five-day hands-on Maritime English Seminar was held in September of 2006 for our third year students, inviting four expert, and seven English, istructors from various MET institutions in the word. The four experts invited were Chief Engineer Bill Davidson from the California Maritime Academy (CMA), Professors Clive Cole and Malek Pourzanjani from the World Maritime University (WMU), and the fourth author of the present paper from the Swan Maritime Institute, Western Australia.

The seminar started with short lectures by the four expert instructors followed by a small-group conversation session so that the instructors could discern the overall English level of the students. The seminar on the first and second days included show-and-tell sessions using the ship related pictures, a diesel engine lecture and lab sessions by Chief Engineer Bill Davidson using the on-campus slow-speed diesel engine, and ship-handling simulator sessions for the Deck cadets. Half of the cadets joined a one-day cruise on a TUMSAT training ship Umitaka Maru IV on the third day, while the other half remained on campus, and on the fourth day, the opposite assignments were given. The sessions on campus included listening to English teachers' presentations on their own MET insititutions, and preparing for the final day presentations on deck and engine related topics of their own choice.

On the cruise, the Engine cadets made rounds with Chief Engineer Bill Davidson, reporting various diesel engine plant parameters and answering his questions. The Deck cadets worked with the instructors in small groups explaining shipboard equipment/fittings and answering questions in English. In the Main Lecture Room of the ship, groups of cadets were given some examples of "Conversations on merchant vessels", from a publication of the All Japan Seamen's Union. Taking turns, each of the cadets was given a two-way radio and a copy of a "script", with a realistic dialogue between several people. Some examples include:

- A two-way radio conversation between a ship's captain, his 2nd Officer and 3rd Officer.
- A two-way radio conversation between a ship's captain, pilot and 2nd Officer

The cadets were then able to practice their English speaking skills, using a very realistic dialogue and also reinforce their command of their Maritime English vocabulary. It also gave them the confidence to use a two-way radio in a simulation that mirrors what happens on Japanese ships.

The questionnaire given to the cadets revealed that they found this intensive seminar demanding and exhausting, yet highly motivating. For the majority of the students, this was the first time to spend a sizable amount of their time listening to English and speaking it. The small student/teacher ratio (about 8 students per instructor) gave enough opportunities for every student to express himself/herself in English. Most importantly, they were encouraged to use Maritime English in appropriate contexts in the simulator and diesel lab sessions and on the bridge and in the engine room of a real ship under way.

Obviously, five days of intensive exposure to English will not make fluent speakers, but we believe that the seminar was effective in making the students realize that English is important in getting their job done at sea, and that what they had learned really counted, thus leading to a higher level of motivation.

3 Maritime English Teaching Materials

3.1 Pictures, Video Clips, and Power Point Files

In order to improve the quality of Deck and Engine English courses, we found it imperative to prepare teaching materials that are relevant and appealing to our cadets. To this end, in January of 2006, prior to the beginning of our new academic year in April, we held an onboard training seminar for Maritime English teachers on the Taisei-Maru, one of the five training ships that belong to the National Insititute of Sea Training (NIST), inviting Captain John Keever and Chief Engineer Bill Davidson as instructors from the CMA. This experience was highly informative in preapaing the onboard training on Umitaka-maru later that year. This Maritime English training cruise, made possible by the cooperation of three MET institutions (i.e. NIST, CMA, and TUMSAT) through the GlobalMET network, is explained in detail in a paper presented at a GlobalMET conference (Hagiwara, et al., 2006).

The teaching materials created during this onboard seminar include digital pictures, video clips of lectures delivered by Captain John Keever and Chief Engineer Bill Davidson, Power Point presentations on bunkering and marine propulsion plants, listening and VHF radio exercises. Pictures are highly useful in soliciting English responses from students. When the fourth author was invited to team-teach Deck and Engine English classes in the last month of the first semester this year (i.e., 2007), he held lunch-time conversation sessions using those pictures and even prepared a vocabulary list with example sentences to go with those pictures. Video clips make a good listening exercise. These materials are not only useful for cadets but also for Maritime English lecturers since the two professionals kindly tailored their lectures for English teachers.

3.2 Maritime English Database

We are also working on a Maritime English Database, which includes words and phrases necessary for deck and engine officers at sea. The Standard Marine Communcation Phrases (SMCP) offered by the IMO is a good starting place for deck cadets, but this is a minimum requirement. The SMCP has "to let go" and "stand by" the anchor, but one can also "slip, sight, or weigh" the anchor. A ship "swings on" the anchor and "sets to" the wind at anchor. A captain can "come ahead against a spring," and a ship "squats" significantly in shallow water if its speed is too high. These words and phrases and more are now entered into the database.

For the Engine Department, there is no SMCP. The first author has created a list of essential verbs, adjectives, and adverbs for marine engine operation, maintenance and repair together with the basic nomenclature of diesel and turbine plants, auxiliary machinery and tools. The list is being used for the Engine English courses, and these items are also now part of the database.

The database works as an on-line English-Japanese/Japanese-English dictionary. Each record has an entry word, its part of speech and Japanese translation, followed by an optional example sentence and its Japanese translation, and a note on the usage if necessary. Users can search for both English and Japanese entry words as well as example sentences that contain a certain word. This database system itself is designed specifically for Japanese learners of English, and is of little use for those who do not understand Japanese. However, we are planning to make the entry words and example sentences available in an Excel file in the future.

Since both navigation and marine engineering are broad subjects with age-old traditions, a thorough collection of vocabulary items in these fields cannot be achieved in a short period of time. We are currently concentrating on the basic words and phrases of high practical priority so that these can be introduced in class in the form of a vocabulary list, and planning to increase the number of entries as an ongoing project even after the termination of the grant period.

4 Test of Maritime English Competence (TOMEC)

4.1 TOMEC Goal and its Format

Although there are several standardized tests of English such as TOEFL and IELTS for academic English and TOEIC for business English, there is no test of Maritime English except maybe the one developed by the ISF Marlins, which is computer-based and not suitable for testing many students at the same time. Thus, we decided to develop a Test of Maritime English Competence (TOMEC) to test the effectiveness of our newly introduced curriculum,.

Since many shipping companies in Japan use the TOEIC test for recruiting and internal promotion purposes, we have decided to use a similar multiple-choice format in our test. To be able to administer the test within one class time, we have limited the number of questions to 25 for the listening and 25 for the reading sections. The following summarizes the question types, or parts, and the number of questions for each part.

Listening Section
- Part I (10) Choose one correct statement about a given picture.
- Part II (10) Listen to a question and choose one right answer to the question.
- Part III (5) Listen to a conversation/statement and choose one right answer to a question.

Reading Section
- Part IV (15) Choose one item that best completes a sentence.
- Part V (10) Read a passage and choose one right answer to a question.

In creating the test, the listening question preparation was supervised by Captain John Keever and Chief Engineer John Coyle at the CMA. The reading questions were prepared by the first

and third authors and checked by Professor Clive Cole of the WMU for the Deck and by another native speaker of English for the Engine questions. The recordings for the listening questions were made by two professional narrators who speak British English. We have created four versions of the test for the Deck and another four versions for the Engine Department. For further details of the test, the reader is referred to a paper presented at an IAMU meeting (Takagi, Uchida, Keever, and Coyle, 2006).

4.2 Standardization

Our next step is to standardize the test. As a first attempt, we have given one version for each Department (i.e. Deck and Engine) to CMA seniors. This was to see how well native speakers of English with comparable background to our cadets will perform on the test, and to weed out bad test items based on the item analysis. Several MET institutions have also given the test to their cadets for this purpose and we are currently working on the test data analysis. Our final goal is to select good test questions and make three versions of the test of approximately equal difficulty.

5 Call for International Cooperation

As the reader may have already noticed, our grant project has been supported by many professionals who generously shared their expertise and time. Given the very nature of ***Maritime*** English, English teachers alone cannot go anywhere without professional support of English-speaking, sea-going officers. Mariners at sea work on the principle of mutual assistance, and this tradition seems to have found its way when helping English teachers in distress. We are deeply indebted to Captain John Keever and Chief Engineers Bill Davidson and John Coyle of the Training Ship Golden Bear for their continuous support.

Obviously, this tradition is not unique to seafarers. Professor Clive Cole at the WMU has contributed immensely to Maritime English education in Japan both at the TUMSAT and NIST. We also remain grateful to those English teachers from various MET institutions who joined our intensive seminar in 2006. Without their kind assistance, our cadets would not have had enough exposure to English.

Quite naturally, we have come to think that it is our turn to contribute to the Maritime English teaching profession by making the teaching materials and the TOMEC test available on the Internet. Simply visit the following site: http://www2.kaiyodai.ac.jp/~takagi/mei/index.html. The materials are all at your disposal. We would appreciate, however, if you could help us improve and expand this on-line teaching material bank. If you find ways to improve our materials, drop us a note. If you have some teaching materials you can share, we would be happy to post it on our site, or add a link to your own site. If you give a TOMEC test, please make the raw data and students profile data available to us for standardization. We believe that Maritime English teachers, through international cooperation and collaboration, can provide better English education to non-English speaking students who seek their future in seafaring.

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A COURSE BOOK FOR AN ME PROGRAMME: A PROJECT IN PROGRESS

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ABSTRACT

A dire need for quality Maritime English (ME) training is internationally recognized. Having good command of the English language, the lingua franca for seafarers, is now a top priority for anyone who wishes to join a well-reputed shipping company or be promoted to a higher level within a maritime business. Consequently, maritime educational institutions worldwide continuously review their ME training programmes and place great demands on English for Specific Purposes (ESP) serving institutions / practitioners to design courses and develop materials that address the specific needs of maritime education.

The current paper presents an institutional experience in course design and material development at the Arab Academy for Science and Technology & Maritime Transport (AASTMT) in Egypt. In accordance with the demand by the AASTMT College for Maritime Transport and Technology for reviewing the ME programme at the Nautical Department, the AASTMT Institute for Language Studies (ILS) launched a two-year project in summer 2006 with the aim of designing an up-to-date ME programme that meets the College demand for change and achieve international standards for quality ME training.

The paper first shows how the ILS ESP team identified the objective and subjective needs for the a new ME course book. This is followed by a description of course design, which includes an overview of the specification of course aims, the selection of content and the adoption of relevant teaching/linguistic methodological principles. Finally, the stage of material development and implementation is briefly discussed.

Keywords: English for Specific Purposes, Maritime English, needs analysis, course design, material development

1. INTRODUCTION

Maritime educational institutions are increasingly becoming aware of the significant role of Maritime English (ME) in the training of seafarers. Graduates of maritime colleges who could demonstrate good knowledge of navigation subjects, such as seamanship principles, cargo handling and ship construction, but possess very poor command of the English language face an unpromising career. They are not recruited by multi-national companies and mostly end up with low-paying jobs at small local shipping companies, or sometimes are forced to change career all together. The frustration is even worse when those graduates realize that their previous classmates who were usually assessed down the scale on college navigation subjects join high-paying jobs with well-reputed shipping companies due to their mastery of the English language. The frustration here is a feeling shared by both graduates and college educational/administrative personnel who, in turn, start to doubt the value of their educational programmes and the relevance of their assessment criteria. As a result, a growing demand for the instruction of nautical subjects in English is internationally observed. This is accompanied by a widely expressed need for the development of effective ME programmes.

The present paper reports an institutional experience of course design and material development of an ME course book for the Nautical Department at the Arab Academy for Science and Technology & Maritime Transport (AASTMT), a specialized educational institution of the Arab League. The AASTMT College of Maritime Transport and Technology has graduated thousands of Egyptian and foreign seafarers along more than 30 years. The College management has always attempted to equip graduates with the required knowledge and skills to successfully manage their careers in the highly competitive maritime market. Realizing the importance of ME for the future of college graduates, the College management expressed a need for improving the ME programme at the Nautical Department, and consequently the Institute for Language Studies (ILS), the institute responsible for providing language services to AASTMT colleges, centers and institutes, launched a project in summer 2006 for the development of a more up-to-date ME programme. The project included various stages; needs analysis, course design and material development/implementation. The project is still expected to last for another year, so the current paper includes an account of the present state of affairs when the project is mid-way through.

2. NEEDS ANALYSIS

English for Specific Purposes (ESP) is an approach to language teaching that is mainly characterized by a focus on the learner's needs and rationale for learning (Chen, 2006). ESP learners are largely learning the language for a professional or vocational purpose, not for the sheer love of the language. This is why 'needs analysis' is a key term in ESP programmes and a starting point for course design.

In the current project, needs analysis was conducted using different tools. Course evaluation meetings were held with ME instructors who had been working at the Nautical Department for years, interviews with the College administrative personnel and lecturers were carried out and direct feedback from students through discussions/ questionnaires was sought. The following set of needs was identified:

2.1. Objective needs

The needs specified by the academic and administrative staff at the Nautical Department were mainly relevant to college teaching and maritime job opportunities. These needs can be summarized as follows:

- Orally communicating with foreigners using social and technical English
- Reading specialist nautical literature
- Completing ship documents and reports
- Giving oral presentations on specialized topics
- Writing formal academic reports in their field of specialization
- Demonstrating effective communication skills

2.2. Subjective needs

Learners' needs, or wants, should also form a basis for ESP course design since these are the needs that mainly stimulate motivation and encourage learners to invest time and effort in the learning process (Chen, 2005). Subjective needs also gain prime importance in language teaching programmes since a lot of out-of-class practice is required if learners are to enhance their communicative competence. With this perspective in mind, the following learners' wants for the new ME programme were identified:

- Orally communicating with foreigners
- Passing international exams (e.g., TOEFL) with high scores
- Enjoying films and songs in English
- Facing interviews with confidence

3. COURSE DESIGN

Course design is extremely vital for ESP practitioners, who always seek to address the specific needs of their learners or served institutions, and usually fail to find ready-made course books that successfully address these specific needs. This is especially the case when the ESP practitioner deals with students who are enrolled in a college programme with a certain number of credit/contact hours assigned for the ESP courses.

In the current situation, the needs of the College management and learners alike placed a huge demand for a quality ME programme. It would not, however, be possible to develop an effective ME programme if learners' language proficiency level was significantly low. This is why a decision was jointly taken by the College management and ILS to set a placement test for college freshmen upon their registration. Applicants scoring below intermediate levels join pre-sessional intensive general English language courses. The entry level for the ME programme is, hence, an intermediate proficiency level.

The new ME programme consists of four courses; ME I, ME II, ME III and Technical Report Writing (TRW). The first three courses, each corresponding to 90 contact hours, are designed to improve the students' ability to communicate efficiently in academic and technical settings. The courses also aim at enhancing the learners' technical lexical repertoire and their use of relevant structural patterns. In addition, an academic writing component prepares learners to write effective academic paragraphs and essays. TRW, a 90 contact-hour course, mainly

focuses on the writing of academic essays and formal reports in the students' field of specialization. It also requires learners to give oral presentations in defense of their reports.

3.1. Specification of course aims

The present paper mainly deals with the design of a three-series course book for ME I, ME II and ME III. By using the course book, students should be able to achieve the following aims:

- To demonstrate understanding of nautical English written and oral texts
- To use technical and semi-technical single/multi-word lexis
- To be familiar with common Standard Marine Communication Phrases (SMCP)
- To use key grammatical structures accurately and meaningfully
- To complete nautical checklists and relatively short reports
- To write academic paragraphs on nautical topics
- To orally express opinions and thoughts using social and technical English
- To give short presentations on technical topics

3.2. Selection of content

The themes covered in the course book are mainly selected based on the topics suggested in IMO Maritime English Model Course 3.17 and additional recommendations by College staff members. For example, the Model Course specifies topics like crew roles, types of vessels, safety equipment, etc for the inclusion in ME programmes. The College staff also identified the need for including other topics related to geography, such as countries, continents and seas. The arrangement of the topics in the ILS course book reflects a move from the more general to specific. For instance, ME I course starts with units discussing topics of a more general nature such as 'geography', 'continents', 'seas' and canals'. This is followed by a gradual progression to more specialized nautical topics, such as 'voyage reviews', 'crew members', 'parts of the ship' and 'types of vessels'. Another principle that governs the arrangement of topics is thematic interrelations. A case in point in ME II is the grouping of the units on 'firefighting', 'safety at sea' and 'abandoning a ship' together. A similar case is found in ME III where the unit on marine accidents is followed by SAR operations. Below are the topics selected for the three ME courses:

ME I

Unit 1: Geography
Unit 2: Continents
Unit 3: Seas
Unit 4: Canals
Unit 5: Voyage reviews
Unit 6: Crew members' duties
Unit 7: Parts of a ship
Unit 8: Types of vessels

ME II

Unit 1: Aids to navigation
Unit 2: Nautical instruments
Unit 3: Communication at sea
Unit 4: Emergency situations
Unit 5: Extreme weather conditions
Unit 6: Firefighting
Unit 7: Safety at sea
Unit 8: Abandoning ship

ME III

Unit 1: Modern navigation
Unit 2: Celestial navigation
Unit 3: Coastal navigation
Unit 4: Cargo handling
Unit 5: Watch keeping
Unit 6: Marine pollution
Unit 7: Marine accidents
Unit 8: SAR operations

Each topic is represented by a unit in the course book. All the units are, thus, structured in a theme-based manner. A unit on abandoning ships, for instance, requires learners to read a text on abandoning ships, listen to a lecture on hypothermia, use relevant SMCP on safety on board and complete an 'abandon ship' checklist. Another case in point is the unit on voyage reviews, which involves students *in reading and listening to different voyage reviews, working out the rule of the past simple* tense through these texts and then writing reviews of personal voyages. This theme-based approach required course designers to specify the grammatical structures, lexis and language skills to be tackled within each unit for material developers.

The choice of grammatical structures was, once more, mainly guided by the IMO Maritime English Model Course 3.17, which specifies the main grammatical rules that need to be highlighted in an ME programme. The grammatical rules included in the ILS course book covers most of the structures in the Model Course, such as tenses, modal verbs, countable/uncountable nouns, comparison of adjectives, reported speech, etc. A gradual progression was observed while specifying the location of each grammatical rule. For example, the active voice of tenses is introduced before the passive voice, and questions are practised before the introduction of reported speech. An attempt was also made to introduce structures that could be relevant to the theme discussed in the unit. The past tenses, as has been pointed earlier, are first presented in the unit 'Voyage Reviews' and then further practised in 'Marine Accidents' since both units deal with narrative accounts of incidents in the past. Similarly, the present simple tense is introduced in the unit 'Seas', which includes factual information on the Caribbean and Mediterranean Seas.

The specification of lexical items was not as straightforward as the choice of grammatical structures because the first largely depends on the types of texts selected by material developers. It was hard to specify which lexical items to include in each unit, but general guidelines were laid out regarding lexical sets and patterns. In a unit covering parts of a ship,

for instance, learners should be introduced to the technical terms of the key parts of the ship and provided with ample practice on them. This common-sense specification was included in course design to ensure proper communication between course designers and material developers. Another kind of guidance was related to lexical patterns. It is widely accepted that learning words in isolation hinders the development of native-like fluency for L2 learners (Lewis, 1993). This is especially the case with ESP learners who are faced with a highly specialized language. Material developers were generally instructed to vary the lexical patterns tackled in each unit. Each unit must include some practice on multi-word patterns, such as phrasal verbs, collocations and semi-fixed expressions, in addition to single words. After the selection of texts, the material developer could consult the leader of the material writing team to identify the most important lexical patterns within the text.

Two more types of content were selected during course design; relevant SMCP and functional writing. The first was mainly selected from the IMO Book "IMO SMCP" (2002). The phrases were assigned to certain units based on the theme. For example, the unit 'Firefighting' includes SMCP on reporting fire and orders for firefighting. Likewise, the unit 'Safety at Sea' includes practice on SMCP related to checking status of lifeboats and liferafts. The same pattern was attempted regarding functional writing. College staff provided ILS team with authentic nautical checklists and reports, which were assigned to certain units based on thematic relevance. A case in point is a 'man overboard' checklist, which is part of the unit 'Emergency Situations'. Another example is the unit 'Marine Accidents', which requires students to complete a marine accident report.

3.3. Adoption of teaching methods/ approaches

Course designers in the current project were also concerned about the teaching methods/approaches that would underlie material development. A clear specification of the methods that are adopted in the project was clearly announced to material developers. The methods included a mixture of four main schools; the Communicative Approach, the Humanistic Approach, the Natural Approach and the Lexical Approach.

The Communicative Approach (CA) is widely accepted as an effective method for language teaching in both general and specialized language courses. It is specifically recommended in the teaching of ME in the Model Course 3.17. Course designers laid the CA basic principles clear for material developers and provided examples of how to implement these principles. One main principle that was highlighted is the focus on communicative competence rather than mere linguistic accuracy. Grammar is introduced in the course book, but it is a means not an end. Learners are rather engaged in a variety of activities that include an integration of the four language skills. Grammatical rules are taught inductively through allowing students to work out the rules themselves from the text and then the practice stage includes meaningful and communicative tasks.

Material developers were also encouraged to devise tasks that simulate real-life communication and stimulate active involvement on the part of learners. In real life, students participate in conversations, give presentations, read specialized texts, fill out forms, write reports, listen to the weather forecasts, etc. With this awareness, material developers have attempted to include tasks that are realistic and meaningful. The unit 'Nautical Instruments', for example, requires students to interview a captain on an important nautical instrument and present the tape-recorded interview with pictures of the instrument to the ESP instructor. Another example is the unit 'Extreme Weather Conditions', which requires learners to make

up a dialogue between a vessel and a shore station enquiring about the latest meteorological conditions. The materials, thus, largely encourage instructors to adopt a student-centered approach to ME, where students are active participants in the learning process.

Course designers also encouraged material developers to incorporate the basic philosophy of the humanistic approach. Authenticity is at the heart of the course book. Written and audio texts are all authentic, mainly adapted from online resources. Activities also require learners to perform realistic tasks since realistic goals trigger and enhance the learner's motivation. Tasks also reveal recognition of the personalization element. A number of tasks allow learners to express their true thoughts and feelings through discussions, role plays, presentations, etc. Every unit also contains a project that encourages cooperative learning by allowing learners the chance to work in pairs/groups in out-of-class activities. Learners are also engaged in a number of discussions, role-plays and presentations with the aim of furthering their communication and interpersonal skills. During such tasks, learners are encouraged to address the audience's needs and maintain their interest. Students also learn how to respond to the presenter/audience's thoughts and feelings and show necessary empathy.

The basic principles behind Krashen's Natural Approach also apply to the material development in the current project. To begin with, material developers were asked to search for texts that are not too challenging for learners. The selected texts were mainly semi-technical and suitable for the language proficiency level of students. Texts that are too difficult in terms of content or language will not be comprehensible for learners, which will de-motivate students and hinder the learning process. Another principle that emanated from the Natural Approach is that comprehension precedes production. Material developers were instructed to provide students with sufficient input before asking them to make oral/written production. For example, all the sections in SMCP start with some activities that familiarize students with the meaning of different phrases. This is usually followed by other activities that engage students in completing dialogues or filling in gaps using the previously taught phrases. Finally, learners are given relevant situations and asked to make up their own dialogues using these phrases and act them out in class.

An important approach that dominates the development of vocabulary activities is the Lexical Approach (Lewis, 1993; 1997). A great focus is placed on familiarizing learners with different lexical patterns in addition to single words. Learners are introduced to phrasal verbs, collocations, semi-fixed expressions, etc. This is extremely relevant to ME training due to the highly specialized maritime language and the recurrent semi-fixed lexical patterns used for communication at sea. Learners are not only required to use certain chunks, but they are also trained to recognize new chunks in texts. For instance, learners are asked to identify the verbs/adjectives that collocate with given nouns in some reading texts. They are also given some jumbled semi-fixed expressions and asked to rearrange them by referring back to other texts. This approach helps learners to understand and produce English texts with ease and precision using pre-fabricated chunks. It also allows them to become more autonomous in the future since they will be trained to identify relevant chunks in texts and use them in language production.

4. MATERIAL DEVELOPMENT AND IMPLEMENTATION

Material development is a very costly process in terms of both time and money. For one thing, good teachers may not be good material developers. A certain caliber is needed to produce quality material. Another issue is that material development is an extremely time-consuming

process. Many ESP practitioners prefer to teach than to invest too much time in material-development projects. Besides, such projects need very good management. A number of things can go wrong if the process suffers from mismanagement. For example, during the needs analysis stage any misinterpretation of demands can lead all team members astray. Similarly, if course designers do not share their philosophies or methodological principles with the material writing team, the resulting materials will be so heterogeneous that it cannot be included in one course book, and could also be too confusing for both instructors and learners during the implementation stage.

In the current project, ILS ESP team were quite aware of all these challenges, but still had to opt for the development of in-house materials since other ME training materials were either unavailable or did not match the needs identified in the needs analysis stage. Two measures were, however, taken to reduce the burden. One thing is that an academic listening/speaking course book and another academic writing course book were selected from the market to cater for the academic component in the programme. A wide variety of English for Academic Purposes (EAP) course books is currently available on the market. The search and selection process of the course books was good investment of time and effort since the availability of ready-made textbooks reduces the load on material developers, allows for the use of internationally tested materials, and helps the writing team to focus on only the technical part of the course. Another measure that proved useful is setting a two-year plan for the project. This framework, including time for course design, material development, material piloting and review, has helped minimize the pressure placed on team members. Rushing the team to finish the work in shorter time, especially when all members have a teaching workload, would have resulted in poor quality materials prepared in haste. Below is a brief description of the material development and implementation process.

4.1. Material development

The first step with material development was the selection of team members. The course designer had already been selected based on the fact that she is the academic course coordinator and had previously participated in similar projects. The two academic assistant coordinators were assigned as team leaders for the material developers in order to ensure continuous and smooth communication with all team members. The presence of the team leaders was extremely important for different reasons. First, they helped in the course design stage with their valuable insight derived from their teaching years at the Nautical Department. They were also a very good link between material developers and the course designer. Regular feedback and comments from the material writing team helped reshape the course design as seen necessary. Another important benefit is the open communication channels between the team leaders and material developers to offer instant solutions to problems and maximize the unity/coherence of the units produced by different material writers.

The choice of material writers came in two phases. During the first phase, all ME instructors were welcome to participate in material development on a voluntary basis. Each instructor was given a plan for a unit including the topic, relevant lexis, grammar, functional writing and SMCP, and a general framework for activities/ projects. A time framework was set and on-going discussion was encouraged with the team leaders. This stage led to the production of various units, but the materials produced required a lot of review due to the varied experience level of the instructors and their tight teaching schedules. After this initial phase, the selection of material writers was more structured. Priority was given to those with more experience in ME teaching, had already participated in similar projects, managed to follow the general

course framework and specific plans for units and were willing to dedicate their time during the summer holiday for material development. Still, the challenge was not easy in the second phase. The review process, carried out by the team leaders, was easier because material developers were more experienced and had already been provided by sample units prepared during the first material-development phase. Yet, the challenge at this phase was more related to the insufficiency of experienced and dedicated material developers.

During the assignment of units, a number of criteria were observed. A main criterion was assigning material developers units that would match their knowledge level of the subject matter. Some material developers were more experienced than others with nautical topics due to their longer teaching years at the Nautical Department. These developers were, therefore, assigned units of a more specialized nature, such as watch keeping or nautical instruments, whereas less experienced members were assigned units on geography or continents. Another criterion is the material developer's ability to search for new authentic materials adaptable for teaching purposes. Some developers demonstrated a higher ability to search for authentic materials than others. They were, thus, assigned the units that required extensive content selection. The units that already had suggested texts to adapt were assigned to other instructors with less material-selection abilities. A final criterion in unit assignment was related to the type of tasks to be designed. Not all material developers excel with the same types of activities. Some are more confident with communicative reading activities, others design good problem-solving tasks, some others can produce very good role plays, etc. This knowledge about the team members' ability also played a role in task assignment.

The success of the material development stage mainly relies on good knowledge of the team members' abilities, and effective on-going communication with the team. Not knowing the abilities of the writing team means wrong assignment of tasks, which could lead to huge waste of time and effort in the review stage and material refinement. This is why the manager of such material-development projects must attempt to gain as much knowledge as possible regarding the members' skills and abilities. Sometimes, however, an initial phase of the project could involve everyone until the abilities of each individual are properly examined. Effective on-going communication with team members is also of extreme importance. Regular follow-up with material developers facilitates the developer's job since he/she can always seek consultancy and make sure that his/her work is not diverging from the plan or required standards. This communication is also extremely useful for course designers since they can continuously update their plans if proven inadequate. It is also useful for the review stage. Material reviewers will not, thus, need to make huge modifications if the development stage is well monitored.

4.2. Material implementation

Different units have already been in use in the ME programme at the Nautical Department since September 2006. Feedback is regularly sought from instructors and learners. Instructors are encouraged to record their feedback on the materials after every session. This feedback is later gathered by the assistant coordinators and discussed during evaluation meetings. As for learners, instructors regularly give comments on their students' interest level and degree of classroom participation. Some learners have also been interviewed at random concerning the new changes in the curriculum. Old students were more informative in this respect than freshmen because the first had already been exposed to different teaching materials at earlier stages of their college education.

More feedback is sought from College staff. Informal discussions with lecturers and administrative personnel constitute a firm background for the on-going evaluation of course design and material development. The college administrative personnel have also provided very useful insight into the course evaluation process through keeping the ESP staff updated with the requirements of the shipping companies providing College students with sea training and scholarship opportunities. This on-going feedback has enriched the course evaluation process and helped keep the project on target. Another important asset for the cooperation between ILS and the College of Maritime Transport is the introduction of the Marlins on-line tests for assessing the proficiency level of student candidates for sea training with mutli-national companies in summer 2007. The students sitting the tests had already taken two courses from the new ME programme. Their test marks, thus, gave an indication for the kind of ME training required and how far the present changes have equipped learners with the required knowledge and skills to sit such internationally recognized exams.

5. CONCLUSION

The present paper reports an institutional experience for developing a three-series ME course book at the Arab Academy for Science and Technology & Maritime Transport in Egypt. A two-year project was launched for this purpose in summer 2006 in response to the worldwide demand for seafarers with very good command of the English language, the lingua franca at sea. Course design was based on an assessment of the needs of the College of Maritime Transport for a new ME programme. The needs analysis covered both the needs of the College staff and learners. This stage was also guided by the feedback of ME instructors with long experience at the Nautical Department. A general course design was developed, in which aims were specified, content selected and teaching methods/approaches determined. Then, a material writing team was set up, and materials for the first two courses were developed and piloted over two academic semesters. Currently, the materials for the two courses are being refined and more materials for the last course of the programme are under development.

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List of abbreviations

AASTMT	Arab Academy for Science and Technology & Maritime Transport
CA	Communicative Approach
EAP	English for Academic Purposes
ESP	English for Specific Purposes
ILS	Institute for Language Studies
IMO	International Maritime Organization
ME	Maritime English
SMCP	Standard Marine Communication Phrases
TRW	Technical Report Writing

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Biography

Dr. Dina El-Dakhs is a lecturer at the Institute for Language Studies at the Arab Academy for Science and Technology and Maritime Transport. She got her Ph.D. in Psycholinguistics from Alexandria University, Egypt. She has extensive teaching and course coordination experience in TESOL, ESP and EAP. She has also coordinated a number of material development projects for course books in general English, Business English, English for Engineering, Maritime English and communication skills. She has also worked as a teacher trainer for novice and experienced TESOL and ESP instructors from various educational institutions. She presented and participated in a number of conferences on TESOL, ES/AP, Linguistics and Communication Skills.

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English for Specific Purposes and Total Quality Management, the Maritime Situation

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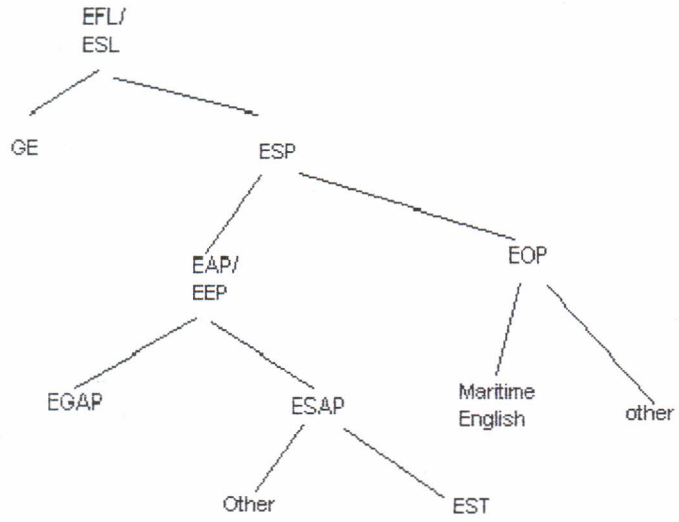
The intention of this paper is to bring together some fundamental concepts on Language for Specific Purposes, Systemic Functional Grammar and Test Construction Theory to suggest how to best create exams and courses that benefit students in terms of preparation routines and foreseen application of acquired language skills. The model that is presented for the construction of exams and courses also incorporates ideas that are taken from Total Quality Management theory. The complex process of analysing and codifying language for a specific purpose, with a specific category of students and exam requirements in mind, is greatly aided by the methods and models already developed in this seemingly unconnected field of Total Quality Management (TQM). This is because TQM scientifically deals with complex situations which are best resolved with the contribution of many, often antagonistic, ideas. The examples given will refer specifically to Maritime English, although the theory can be applied to any ESP situation.

Maritime English is of particular interest for this model as there is often the need to create curricula that combine ideas coming from a wide range of fields (i.e. safety and security, nautical, different fields of engineering, logistics, transport, weights and measures, as well as grammar and language skills). These skills and knowledge need to be covered within a set number of lessons over a limited time period, often with an exam. The definition and emphasis of syllabi can vary greatly from one course to the next, but these syllabi are often globally transferable, making such material a potentially marketable product. Thought needs to be given to the process that defines the syllabi so as to render a better product identifying, with more accuracy, what is relevant who it is relevant to.

Language for Specific Purposes

English for Specific Purposes is referred to as an example of Language for Specific Purposes, a subject which has been well debated and monitored for some 40 years. The teaching and learning of English as a Foreign Language has been categorised in various ways, often to distinguish the teaching of 'General English' from that of English for courses aimed at specific areas. Hutchinson and Walters (1987) distinguishes General English (GE) from English for Specific Purposes (ESP). Robinson (1991) categorises ESP into English for Occupational Purposes (EOP) and English for Academic or Educational Purposes (EAP/EEP) with English for Science and Technology (EST) in both categorisations. Jordan (1997) classifies EAP into two branches: English for Specific Academic Purposes (ESAP) and English for General Academic Purposes (EGAP). ESAP focuses on discourse genres and task skills specific to a subject whereas EGAP focuses on general academic skills (e.g. note-taking, academic writing, seminar and discussion skills), register and style, and proficiency of use.

These categories can be illustrated in the following branch diagram.



EFL and ESL are divided into General English (GE) and English for Specific Purposes (ESP). English for Specific Purposes is usually subdivided into English for Academic Purposes or English for Educational Purposes (EAP or EEP) and English for Occupational Purposes (EOP). EAP/EEP can be subdivided in to English for General Academic Purposes and English for Specific Academic Purposes. EOP and ESAP can be further divided into various branches of specific academic or occupational linguistic domains.

The greatest development of ESP took place in the seventies propelled by such academics as Swales, Dudley-Evans, Widdowson, Trimble and others who focussed on the lexico-grammar of a specific field and the development of key study skills that characterise a discourse genre. By focussing on material and skills relevant to students needs, and so avoiding redundancy, the aim was to develop material that would prepare the student in the most efficient way for the linguistic demands asked of them in a specific discourse domain. Thus courses were developed that prepared the student more quickly and efficiently for a specific discourse domain than GE courses.

Problems arose in the selection of material due to the appropriate specificity of the topic and also in the importance assigned to various study skills that were to be taught or not. There was often a difference of opinion as to the perception of students' needs between materials' developers, teacher and student. Criticism also arose due to the dynamics that could often be created in the classroom with such an approach. Lee and Street (1998) say that such an approach is 'student deficient' and express concern about the students being made to learn isolated skills outside of their learning contexts, thus not giving them the opportunity to develop a full understanding of the target academic context. A similar concern was expressed by Swales (1990) who expressed the need to help students adapt

to different learning contexts as each class has its own cultural ethos defined by the relationship between the teacher and the students, including the ESAP teacher.

A further complication that emerged from this debate was that of 'academic socialisation' (Lee and Street 1998). The debate was on the extent to which the student is integrated into the cultural context, and how important this integration is to language production. There are the pedagogical models that take into account two types of students: those who wish to be fully assimilated into the culture and those who do not. The extent and quality of second language development in these models is based on the need and motivation of the student to belong to group as well as the degree of comfort felt in respect to a given task. Other models are based on the idea that second language learning entails 'acquiring symbolic elements of a different ethnolinguistic community' (Gardner's Socio-Educational Model 1979 p193.) Thus language aptitude and intelligence as well as motivation and situational anxiety are considered variables. Lee and Street (1998) go further saying that this may well be so, but that neither of these models address the 'deep language, literacy and discourse issues involved in the institutional production and representation of meaning', emphasising the complexity of academic writing. They argue that students do not need to be socialised into the dominant culture of the institution as these models suggest, and emphasise the importance of recognising the existence of an underlying cultural context which influences the discourse used. This is clearly compatible with Gee's (1990) distinction between 'Discourse' and 'discourse'. Gee presents 'discourse' with a small 'd' as being the language used to convey meaning, distinct from 'Discourse' with a capital 'D' which includes much more than language, but rather the whole context in which communication takes place, non-verbal as well as verbal. Gee states that only in understanding 'Discourse' is it possible to make 'discourse'.

The debate about discourse is far reaching when applied to language courses for English for Occupational Purposes. This is especially true when scholars, like Swales (1990), state the need to bring ESP pedagogy closer to anthropological factors. Swales proposes a 'genre based approach' made up of: discourse community, genre and task, where discourse communities are 'socio-rhetorical networks that form in order to work towards a set of common goals'; genres are 'classes of communicative events' which are in turn 'properties of discourse communities' and 'genre-type communicative events' as 'processing procedures which can be viewed as *tasks'*. This approach suggests that a more holistic approach to learning and teaching is necessary and begs many questions to define what the limits and the realistic objectives of a language course in a specific faculty can be.

Referring to the diagram, it can be seen that Maritime English is considered an evolution of English for Occupational. The nature of the subject makes its language both occupational and academic. As with any discourse category its application depends very much on its use by and the inclinations of the user.

The problem for the Maritime English course coordinator is the same problem encountered by ESP course coordinators, that of defining what lexico-grammar points

should be taught, what skills should be focussed on and what material is of an appropriate specificity. In making such decisions the teacher is making suppositions about the future of the students and their future language needs. These suppositions could have a limiting effect on the future of the student if they do not sufficiently prepare students to face the linguistic demands that will be asked of them. In the particular case of Maritime English this linguistic demand has an exceptionally wide variety within one discourse domain. Even more disconcerting is that, more often than not, people with little experience of the maritime world are charged with the responsibility of defining language courses, programmes and exams. This is due to the fact that academics with a linguistics and pedagogic background teach these courses, and generally these academics have not had much contact with the maritime world.

More than simply the lexico-grammar input, material selection and skills development choices, there is also the need to ensure that the student is benefiting more from an Maritime English course than he would from a GE course. This refers specifically to the Swales (1990) argument for a more holistic and anthropological approach to learning and teaching as well as the learning preferences and or needs of the individual, and is a decision that the language course coordinator cannot make on his own but together with the policy makers of the faculty/institution. These factors clearly make an EOP language course a very delicate thing that requires the considered judgement not only of linguists but of experts within the field under question and the policy makers of that faculty/institution who must give clear instruction as to what and where they believe the students will go after the completion of a course and what linguistic demands could be asked of them in those roles. Then with those final objectives in mind, a strategy needs to be created to satisfy the student of the agreed linguistic requirements, considering the advantages and inadequacies of a GE approach as opposed to that of Maritime English and which the linguist can present in relation to the policies of the institution in question.

Systemic Functional Grammar

In the 1930's Malinowski observed that the contexts of culture and situation play fundamental roles in language use. This anthropological stance was developed by Hymes in 1986 who defined the components of language as: the speech act (form and content are central); the situation (physical 'setting' and psychological 'scene' circumstances); the participants (the addressor and addressee) whose relationship is culture bound; the purpose; the key (tone, manner or spirit); the channel (medium of transmission); form (code, register); the norms of interaction and interpretation; the genre (formal characteristics that describe a specific convention).

He argued that language has a specific purpose, which has as its base construction a number of basic grammar rules that can be generally applied, and each language has its own rules. These rules do not however tell us anything about how the language is used. Halliday (1978) takes the anthropological stance of Malinowsky and emphasises the communication element of language focussing on language in use. He laid the

foundations of systemic functional grammar by emphasising the complementary aspects that form and function play.

Halliday describes languages as being complex semiotic systems composed of multiple strata or levels: context, semantics, lexico-grammar and phonology, with grammar as central. His functional grammar gives explanation at each level in its cultural and situational context. He assigns three semantic components to language or meaning potential: the ideational, the interpersonal and the textual. The ideational is the mental representation of what the producer intends to communicate, here the relationship between language and thought is explored; the interpersonal describes how meaning is exchanged through the selection of language reflecting the relationship of the participants; the textual is the message that is produced through the channel and mode demanded by the situation. Halliday emphasises the relationship between mind and society, where society gives keys to the mind to create meaning and the mind selects from these keys which to apply, thus making language ontogenetic. The three contextual components that activate the meta-functions are: field, tenor and mode; which combine together to make up the whole context. 'Field' refers to the 'text generating' activity and activates the ideational. 'Tenor' refers to the 'role relationship of the participants' and activates the interpersonal. 'Mode' refers to the 'rhetorical modes' being adopted by the participants and activates the textual.

The ideational function can be divided into 2 components: the logical and the experiential. The logical function is the 'relations' which constitute the logic of the natural language using parataxis and hypotaxis as in reported speech, coordination, apposition or condition. The experiential is the 'content' function of the language: 'it is the language as the expression of the process and other phenomena of the external world, including the speaker's own consciousness' (Halliday 1978:48) and is arguably the most complex part of the metafunctions. His framework for the experiential function is a 'transitivity system', which 'construes the world of experience into a manageable set of PROCESS TYPES' (Halliday 1994:106): the mental, which describes inner experience – the world of consciousness; the material, which describes outer experience – the physical world; the relational, which describes the world of abstracts relations; the behavioural – which describes behaviour; the verbal –which describes what is said; the existential – which describes the sense of being. The transitivity system can explain language in use as a process in the cognitive field of the producer. These functions are particularly useful to notice at the level of clause as representation because, structurally, the process is realised by the verb.

The interpersonal function expresses 'relations among participants in the situation and the speaker's own intrusion into it' (Halliday, 1978). This is done in part by language choices made according to register: formality for successful communication i.e. in situations where contextual features other than mode are similar it can be said that, generally, spoken communication is likely to use a more informal register than written communication. As a speech system, the interpersonal function is partly realised through the attitudinal meaning that is described by prosodic patterns of an intonation network.

As a written system it is partly realised through formatting, layout and punctuation features

The textual function creates relevance to context. It is the realisation of the meaning in the message that is available to the recipient. Therefore the key concept is the thematic structure because this reveals how the message is related to the situation in which it appears. At the level of text it is classified in terms of macro-Theme and hyper-Theme (Martin 1992). At the level of clause it is classified in terms of Theme, which is 'the point of departure of the message' (Halliday, 1994) and Rheme, which is 'the remainder of the message within the clause' (Halliday 1994).

ESP and Systemic functional Grammar both have certain elements of similarity in reference to the anthropological approach to the analysis of language in use that can be applied in the analysis of and application to exams and courses. Both emphasise the importance of context as well as content. The three Hallidayan meta-functions of the analysis of language in use: ideational, interpersonal and textual, are realised through examining the content, organisation and language of the text. This analysis of language in use is fundamental in any consideration of test construction as these elements must be incorporated into the exam and quantified. In fact these elements give character to the language as well as giving meaning.

Test Construction Theory

The first idea to be considered is that of 'washback' or 'backwash'. The second is the effect of specific purpose background knowledge and language knowledge on language performance, as has been illustrated in the results of Caroline Clapham's 1996 study on the IELTS exam. The third is Douglas's frameworks which are useful in analysing tests for Specific Purposes.

Washback

In general terms washback is the influence a test has, positive or negative, on the teaching, learning, and preparation of a subject. This is not a new concept, but its exact definition and influence have yet to be scientifically quantified. The fact that its exact definition and quantification have not been established makes washback a contested concept (see Alderson and Wall 'Does Washback Exist?'1993) with opinions for and against the use of exams and their influence on teaching, learning and preparation (Vernon 1956; Morris 1972; Swain 1985; Alderson 1986; Morrow 1986; Pearson 1988) and questions about the real influence exams have on teaching being brought into question (Kelleghan 1982; Wesdorp 1982).

Applied to the wider spectrum of education, the definition and benefits of washback are debatable for the academic, but the smaller the sphere the more apparent the effects of washback are, and the less important the semantics of its definition. For the purpose of

this paper, washback should be considered as the influence an exam has on study programmes and teaching strategies rather than the nature of printed and other pedagogic material or the behavioural or emotional changes experienced by the students due to exam anxiety or pressure.

The aim of the test under development for the faculty of Engineering is to try and emulate the results illustrated by Hughes' 1988 study on a project at Bağaziçi University, Istanbul. In this project the aim was to improve the standards of students' English in preparation for mainstream academic studies, taught in the medium of English. This was done with the use of a compulsory proficiency test for students transferring to the University from the Foreign Language School. The contents of the test were designed to reflect the uses of English that would be expected of the students in the English medium University. Thus the premise of this project was to use washback. The evidence suggests that the test provoked a vast improvement in the students' English standards: 83% of students achieved the minimum acceptable Michigan score as opposed to 50% before the introduction of the new proficiency test; the comments of the academic staff complemented these results. Although we do not know what precisely the washback effect was or how it was produced we can see that there was a marked improvement in the students' proficiency in English as shown by the Michigan test and the reaction of the academic staff.

The Clapham Study

In her 1996 study Clapham analysed performance on the reading modules of the International English Language Testing System (IELTS). IELTS is a test of English ability that until 1995 had sub-tests of broadly specific fields: biological sciences, physical sciences, humanities and social sciences.

Clapham noted a number of points that were important for this project. Firstly, if the material was sufficiently specific, some students attained significantly higher scores in the reading sub-test of their own subject than in other subjects.

Secondly, the subject area of the test had little or no effect on the results of the undergraduates whereas there was a significant effect on the results of the post-graduates. This suggests that the students' specific purpose background knowledge may have had an effect on their language performance.

Thirdly test takers who achieved less than 60% on a grammar sub-test did not appear to benefit from their specific purpose background knowledge, while those who achieved between 60% and 80% benefited greatly from their specific purpose background knowledge and those who were graded 80% and above did equally well in all subject areas. This suggests that there is a threshold (60% in this test) above which students' background knowledge is influenced but which has a ceiling (80% in this test) where students could compensate for their lack of background knowledge with more proficient language usage.

Fourthly, language proficiency accounted for 44% of the variance in scores for reading sub-texts of widely differing specificity, while the addition of background knowledge added only 1%. This suggests that language proficiency is a much greater element in test performance than background knowledge. However, when Clapham re-ran the analysis having removed the results from the less specific texts we see the statistics change significantly: language ability accounted for 26% of the variance whereas background knowledge accounted for 36%. Douglas suggests the following conclusion from these results

> "...as the modules become more subject specific, background knowledge will have a proportionately stronger effect on test scores."

There needs to be a significant increase in research regarding this question of the relationship between language knowledge and background knowledge within language proficiency in specific language domains before we can reach certain conclusions, but from Clapham's results it is possible to claim that students need to reach a threshold level in language knowledge after which background knowledge can play a far more significant role in their language performance, while this seems to be less true for students who reach a very high language knowledge where there still seem to be significant effects from background knowledge on language performance especially the more specific the text.

Douglas's Test Construction Frameworks

To paraphrase Messick (1989:35) cited by Fulcher (1999), there are two major threats to construct validity and hence score interpretation. The first of these is construct under-representation, and the second is construct irrelevant variance. Construct under-representation occurs when the test does not adequately represent the construct it is meant to be measuring: something important about the nature of the construct is left out. In such a case, the scores cannot be properly interpreted in the light of the construct. Construct irrelevance variance is reliable test variance that is not related to the construct the test is intended to measure. In this second case, it is possible to misinterpret test scores that systematically differ according to some factor that is irrelevant to the purposes of the test. Most validity research is an attempt to reduce the effects of these two threats to construct validity.

In the area of 'communicative testing' this means that items or tasks set must not only have an authenticity, which will be discussed later, but the scoring must represent the task and its multi-dimensionality, defining the dimensions and quantifying them. If a test is known to be multi-dimensional, reporting a single score is meaningless as it represents too many dissimilar things, thus profile scoring is more appropriate. In the desire to maintain authenticity and the multi-dimensionality of the task, Douglas' test construction frameworks are very useful.

For this next section I rely heavily on Douglas's 2000 work "Assessing Languages for Specific Purposes" 2000, as it brings together the research and development within test construction and evaluation carried out by Davidson, Lynch, Alderson, Bachman, Clapham and Wall (among others) and reinterprets it within the specific purposes environment. He highlights the importance of certain concepts and processes that should be considered and offers frameworks for the construction of tests.

According to Douglas, tests for specific purposes by definition have to be communicative, criterion referenced tests that represent authenticity to their target specific purpose. This notion of authenticity has two aspects which are very important for the test writer, that of setting and interaction; this means that the test writer cannot simply use 'authentic' material but must generate tasks that characterise the real-life tasks of the specific purpose language use.

Before test development can take place, Douglas points out the need to identify the components of specific purpose language ability so as to give precision in test construction, and task creation and assessment. He offers the following framework as a means of analysis:

Language knowledge

Grammatical knowledge
- Knowledge of vocabulary
- Knowledge of morphology and syntax
- Knowledge of phonology/graphology

Textual knowledge
- Knowledge of cohesion
- Knowledge of rhetorical or conversational organization

Functional knowledge
- Knowledge of ideational functions
- Knowledge of manipulative functions
- Knowledge of heuristic functions
- Knowledge of imaginative functions

Sociolinguistic knowledge
- Knowledge of dialects/varieties
- Knowledge of registers
- Knowledge of idiomatic expressions
- Knowledge of cultural references

Strategic competence

Assessment
- Evaluating communicative situation or test task and engaging an appropriate discourse domain
- Evaluating the correctness or appropriateness of the response

Goal setting
- Deciding how (and whether) to respond to the communicative situation

Planning
- Deciding what elements from language knowledge and background are required to reach the established goals.

Control of execution
- Retrieving and organising the appropriate elements of language knowledge to carry out the plan

Background knowledge

Discourse domains
- Frames of reference based on past experience which we use to make sense of current input and make predictions about that which is to come

This table should be applied to each target language use situation. We could imagine a target language use situation for a naval architect or marine engineer student: to orally

summarise an article on new construction materials and methods to another engineering student.

Categories	Characteristics
Language knowledge	
Grammatical knowledge	
Knowledge of vocabulary	Wide range, Technical Maths (mathematical analysis, geometry, algebra, mathematical methods for engineering), Chemistry, Physics, Electro-technology, and elementary computer studies terminology.
Knowledge of morphology and syntax	Wide range
Knowledge of phonology/graphology	Standard written and spoken forms
Textual knowledge	
Knowledge of cohesion	Implicit: must synthesise meaning from text, form intelligible spoken report of this meaning.
Knowledge of rhetorical or conversational organization	Implicit: must produce oral summary of complex concepts.
Functional knowledge	Knowledge of ideational, manipulative, imaginative and heuristic functions
Sociolinguistic knowledge	
Knowledge of dialects/varieties	Standard English, Italian/English interlanguage
Knowledge of registers	Pan-technical, academic
Knowledge of idiomatic expressions	some
Knowledge of cultural references	Implicit: Anglo-Saxon academic culture.
Strategic competence	Relate knowledge from reading article to language knowledge necessary to make oral summary to fellow student.
Background knowledge	Pan-technical.

From the basis of this analysis we can make a further analysis of the overview of target language use (TLU) and test task characteristics again using the framework Douglas provides.

Characteristics	TLU situation	Test task
Rubric		
Objective	Implicit in situation: to understand text and relate information	Explicit: to assess understanding of reading and oral ability in context of reporting technical information.
Procedures for responding	Implicit: interact orally with fellow student in explaining the article.	Explicit: explain this article and answer the questions and settle the doubts of the other student.
Structure		
Number of tasks	Varies; reading, speaking, answering questions made by fellow student	Three: read article, explain article, and answer questions (number of questions can differ)
Relative importance of tasks	Varies; depends on relevance of article to student's study	Understanding of text, ability to summarise, question handling and oral ability given equal importance
Distinction between tasks	Can be blurred as one problem may blend into another one; fellow student's questions can come at any time	Little distinction, as in the target language situation.
Time allotment	Without limit	20 minutes to read the article, 10 minutes to explain it and answer the questions.
Evaluation Criteria for correctness	Implicit	Explicit: overall comprehension and comprehensibility; cultural ability; communication skills (organisation and presentation); interaction with student; overall impression
Rating procedure	Informal	Three raters use a standard for to score performance independently; all categories scored on a scale 0-6
Input		
Prompt Features of setting	Potentially anywhere, probably on university campus, maybe in department or in library	Typical classroom..
Participants	2 students of construction engineering of different educational	2 students of construction engineering from different educational backgrounds, possible

	and cultural backgrounds	different cultural backgrounds
Purpose	Read and comprehend article, convey important elements to fellow student	Assessment of English ability for Engineering
Form/Content	Receptive (reading), oral presentation and interactive question answer	Receptive (reading), oral presentation and interactive question answer
Tone	Friendly, but serious.	Serious, formal
Language	English as a foreign language, some technical register	Same as TLU situation
Norms	Student/student or colleague/colleague interaction, elements of casual conversation	Same as TLU situation, though less casual
Genre	Reporting read information, question and answer session	Reporting read information, question and answer session
Problem identification	Implicit overall but also question answering	Explicit: explain article clearly, answer questions
Input data Format	Written article; oral questions	Same as TLU situation
Vehicle of delivery	Written and live	Written and live
Length	Reading –no limit Explanation – no limit Question and answers- no limit	Reading (1-3 pages) 30 mins Presentation 5-10 mins Question and answers 5 mins
Level of authenticity Situational	By definition	Shares many features of TLU situation: high situational authenticity
Interactional	Material, deeply engaged in interaction with fellow student	Material, moderately engaged in interaction with fellow student: moderate interactional authenticity
Expected response Format	Comprehension of written text, oral explanation of said text accompanied with comprehension of questions and answered accordingly	Same as TLU situation
Type	Extended response	Extended response
Response content Language	Vocabulary appropriate to topic and audience	Same as TLU situation
Background knowledge	Construction science, materials science, mathematics, European discourse norms	Same as TLU situation
Level of authenticity Situational	Protagonist builds on shared knowledge of construction engineering concepts	Same as TLU situation
Interactional	Moderately engaged	

		Moderately engaged

Interaction between input and response		
Reactivity	Highly reciprocal: adaptation of both sides as necessary for mutual understanding	Same as TLU situation
Scope	Very broad: high degree of input must be processed	Same as TLU situation
Directness	Moderately direct, participant must use source article for basis of presentation	Same as TLU situation
Assessment		
Construct definition	Specific purpose language ability required in the TLU situation is complex: mathematical terminology, construction science terminology, materials science terminology, pan technical terminology; questions, question tags, declaratives, imperatives, cohesive use of process markers; organisation knowledge of process and conversation turn taking; use of heuristic, ideational, manipulative functions; idioms and cultural references; the strategic use of an interactive style, checking comprehension of 2nd participant in explanation and discourse markers. Background knowledge: ability to explain technical article in detail with clarity to fellow student in terms he/she can understand	Overall language comprehensibility: pronunciation, grammar, fluency; cultural ability: familiarity with cultural code, appropriate non-verbal behaviour, rapport with fellow student/college; communication skills: development of explanation, clarity of expression, eye contact, use of other methods of illustration/expression, interaction with fellow student/colleague, basic reading and listening ability, question handling and responding; overall impression
Criteria for correctness	Indigenous criteria: pronunciation, comprehensibility, organisational clarity; cultural awareness: level of content knowledge; personality	Language: 0=unintelligible 1=errors interfere 2=errors do not interfere 3=completely comprehensible Cultural ability: 3= aware of norms of interaction, politeness, gesture, formality Communication skills 3=organisation, behaviour displays qualities of 'good' communicator Interaction with fellow student 3= comprehends questions easily, responds appropriately
Rating procedures	Implicit	Three raters rate the performance 'live'; ratings averaged

Why create an exam?

As has been mentioned in the first part of this paper there has been some debate since the 1970's on the real value of ESP and consequently the assessment of it.

> "What is needed is an acceptance of the relevance of idealized and theoretical models of language variety and standard language.
> Language testing compels explicitness about language learning, language teaching, language performance……Language testing operationalizes subjective judgements and in so doing both clarifies and validates them." A. Davies "Principles of Language Testing" 1990

This statement refers to the testing of general English proficiency but is just as true for testing language for specific purposes. Davies's consideration might be even more easily applied to the testing of languages for specific purposes than to that of General English proficiency as when the domain becomes smaller so the variability of language use and context decreases. Nevertheless with this taken into account, even the smallest linguistic domain produces an infinite range of possible language use and context.

What is also interesting to consider is what level of field specificity a text must reach before it is considered a specialised text as opposed to a general text. This idea of specificity is two-fold as it also hard, if not impossible to have a meaningful conversation without context and back-ground knowledge. So for each exam it is necessary to define some limits and levels as to what is specialised and what not, and how much a person should know so as to be able to perform before language proficiency plays a role in the performance.

> "Language performance in individuals varies according to the context in which the language is used." Douglas "Assessing Language for Specific Purposes" 2000

If this is true, then it should be possible to analyse language within a specific context and improve ones knowledge of it. This improvement would involve background knowledge, grammatical knowledge (vocabulary, morphology, syntax, phonology) and strategic competence.

It could be argued that to solve these problems courses and exams of General English could be offered and there is no need for ESP, but we must keep in mind Douglas's analysis of Clapham's results:

> "…as the modules become more subject specific, background knowledge will have a proportionately stronger effect on test scores."

The argument for the centrality of content is summarized by Ebel in 1983 and cited by Messick in 1989:

> "The evidence for intrinsic validity [content validity] will consist of an explicit rationale for the test: a written document that (a) defines the ability to be measured, (b) describes the tasks to be included in the test and (c) explains the reasons for using such tasks to measure such an ability. The explicit rationale indicates what the test is measuring. If that is what the user intends to measure, the test is a valid test for the user's purpose."

If we can infer language ability in a specific purpose domain from the test score then we can make the assumption that background knowledge will have a proportionately stronger effect on language ability in a specific purpose domain than language knowledge. Considering this we can improve the students' language ability in this domain more efficiently by offering courses and exams specific to that domain than by offering general English courses and exams. As students and faculties seek to keep language lessons to a minimum so as not to detract from other courses more directly linked to the subject being studied, this is a solution that might be preferred by all.

How to Create an ESP exam, the Maritime situation.

As can be seen from the discussion above, and only the main points have been touched, the reasons for and methods of creating an ESP exam are far from simple. There are a number of issues that must be kept in mind when considering assessing language use: the importance of context; content; test construction; washback; content validity; the role of background knowledge; the threshold of general English proficiency before background knowledge plays a role; authenticity and scoring. When these things have been considered the Maritime English coordinator can then apply target language use situations to Douglas' frameworks.

There are still some outstanding problems that have not been resolved, those of defining what the target language use situations are and choosing appropriate material. Again the Maritime English coordinator, who is presumably a linguist, finds himself making these decisions alone or with the marginal aid of other experts from other fields. This is where there is the greatest need for grounded ethnology. In the context of the Maritime English this is a very complex situation as the experts can have differing views on what direction the student is likely to take, what is more it is not only the expert who is the bearer of in interest but there is a vast number of 'interested partners' who we shall call stakeholders.

In the preparation of a course and exam in ESP there should be a progression through a number of stages that will give the most complete view of the linguistic needs in a specific discourse domain. Firstly the stakeholders within the learning experience should be defined. In the case of English for Naval Architecture at university these could include:

- students, in as much as they are the main beneficiaries of the service (satisfaction and learning);

- families, usually involved in as much as they offer financial support and are the main social centre of reference for the student;
- the world of work (companies, organizations, industries) that will use the linguistic capabilities of the students;
- institutional bodies (ministry) guarantors of the conveyed educational values, also at an academic level;
- intra-faculty instructors (of other disciplines in the same degree course) for a systematic view of the educational package supplied to the student;
- inter-faculty instructors (of the same discipline in the same degree course), for further development due to comparison among equals (peer review).

It is foreseen that the stakeholders have differing values in relation to differing decisions; therefore it is necessary to carefully consider and verify the importance and weight of each singular component of the course in question. This is of particular importance as each stakeholder may have a different importance in relation to different tasks. Secondly the stakeholders should define the discourse domain. Here the opinions of the world of work and the inter-faculty instructors will be greater than the other stakeholders. Thirdly the linguistic needs within the discourse domain need to be defined; again the world of work and inter-faculty instructors would have a great influence in this area but with the increased importance of the other stakeholders, especially the ESP team who with their greater knowledge of discourse analysis and linguistic functions can aid the 'domain' experts to analyse it from the linguistic point of view. Then finally the linguistic levels, course contents, material selection and target language use situations should be defined.

Through this collaborative process the ESP instructor is supplied with all the necessary support from all the interested parties in the learning experience, including the world of work and representatives of the institutions where the teaching takes place. In this way the programme can incorporate all the multi-dimensional aspects that should be considered. With this knowledge the ESP teacher can produce exams and courses that reflect the long-term needs of their students whose definition has been arrived at from a thorough and complete discussion and not from the 'arm-chair' reflections (Clapham 1981) that characterised other ESP. With these issues resolved the ESP teacher can re-enter into the realm of his expertise, that of language teaching pedagogy. In this capacity he can face the question of how best to teach the discourse domain language needs as have been defined by a representative group of experts and apply this knowledge to the Test Construct Theory and Douglas' framework to create a test that not only reflects future target language use, but also encourages the preparation of the skills that will be needed that neither the ESP teacher nor the student alone could define.

This example only refers to a course of English for naval architecture at university. Clearly each course changes in terms of stakeholders, needs, goals and requirements. By following the above mentioned process, greater efficiency and relevance should be achieved in any course for specific purposes. In the Maritime English case this is of particular interest as many courses are with the same or similar stakeholders, are repeated

and are globally transferable. In this context the above process would take on added importance as the analysis of language and the creation of curricula and exams could lead to syllabus and exam 'packages' that not only render greater results in the classroom, but would help bring a greater standardisation to the industry based on a scientific approach to the language issue.

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Onboard training for officers & cadets - a new initiative

Background

-- identifying the need for a new approach for seagoing staff to receive upgrading training in effective, on board communication, both in General and Maritime English;

-- international concerns regarding shortage of manpower in world fleets

-- insufficient numbers of experienced, certificated officers to relieve those due for leave, and man new vessels now under construction

-- shore-based training restricted to certification on new electronic equipment, or ship management/team building

-- upgrading "Communication training" given low priority by shipowners

--more multi-lingual crews with less English language proficiencies - especially from developing countries where English likely to be a "foreign" language, not taught in schools

One Shipowner's initiative

-- put forward at the Lloyd's Manning & Training Conference: Shanghai - March 2007 - focussing on above issues

-- the Vice President for Manning, from the Hebei Ocean Shipping Co.Ltd., Qinhuangdao, China, requested a meeting with Valerie Short, who had presented a paper on the need for innovation in Maritime English training for seagoing staff;

-- this was an intriguing request from a representative of the 3rd largest shipping company in China. Previously a shipmaster, the Vice President was concerned about the problems of the Company's officers with English communication at sea; not only with other vessels over the vhf, but with pilots, vessel traffic services, port authorities, and particularly with Port State Control and Security Officers visiting the vessels in foreign ports.

-- a further important question was whether it would be feasible for junior officers to help improve the English of the Company's Cadets on the long voyages common to their bulk carriers, such as from China to Brazil to load coal and iron ore, a voyage of 45 days each way.

-- being fully familiar with these needs, I could offer assurances of the feasibility of this type of specialised training, and offered to provide a specifically designed training program for Deck Officers initially, then later a more technically oriented program for junior Engineer Officers.

-- the ideas were quickly compiled and an emailed invitation confirming the discussions was received before the end of March. The first training program was planned for 5 weeks in August, and design and materials development began in April.

Liaison and Cooperation

-- most of Hosco's senior staff are ex Masters with many years at sea, possess fairly good standards of English and also realise the necessity to upgrade the Co.'s younger officers' English proficiencies and oral communication skills

-- organisation and development proceeded smoothly, with very few misunderstandings

-- requests were dealt with promptly with none refused... for example, could we possibly visit a Co. vessel alongside in the port? - "No problem" - so on the first Saturday we all boarded a comfortable tourist bus and were driven to a large shipyard where the vast bulk carrier "Hebei Loyalty" was receiving a full classification survey; climbing aboard this monster being an endurance feat in itself.

-- trainees had been fully prepared for this 'on board' exercise - while some having sailed on this vessel knew exactly where they wanted to take photographs - others went off to their chosen location; later we all congregated on the bridge for a general discussion and the Master was very impressed and intrigued at this new "training initiative" led by the unusual 'English teacher'.

Trainees

-- mixed groups of 3rd and 2nd Officers - totalling 26 - all Mandarin speakers with varying levels of English proficiencies, mostly lower intermediate with approximately one third of the seniors at upper intermediate - all improved with the seniors becoming far more confident and fluent after 5 weeks' training.

-- all very welcoming, enthusiastic and interested in communicative methodology (so different to their normal training systems) - enjoyed the freedom of expression, and regular opportunities to thrash out problems in L1, then translate into English; people vied to be the group reporter, to write on the board, and enjoyed correcting others which needed further explanation, for example :

-- this case study required analysing notes (as reported in Lloyd's List) with reference to the Collision regulations : Colregs - which generated heated discussion - finally provoking one 2nd Officer to ask to illustrate his point on the board... just what was being aimed for... and his analysis - all in clearly understandable English - logically demonstrated how, in his opinion, the collision had been caused.

-- an interesting comment was that :"The Containers often don't bother to answer our vhf calls" -something to do with 'ship snobbery' I believe !

Teaching/Learning methodology

-- with every session ensuring a trainee-centred format, these young officers gradually understood how they too could utilise the ship, loading and discharging the cargoes, routine English communication operations, commonly used bridge equipment and the shipping industry in general as their basis for helping their Cadets practise using English in its Maritime format.

-- examples of how Cadets could be helped to understand various important aspects of 'effective' English communication at sea were provided, for example : with photocopies of other ships, cargo operations, brochures about Port State Control and preventing marine pollution - freely obtainable from the World Wide Fund for Nature, the Australian Maritime Safety Authority ; also useful email addresses, this access being available on all Hosco's vessels, though Internet access is still too expensive unfortunately.

-- the Final Report also contains a list of recommendations to the shipping company for many other ways in which these new "Instructing" Officers can be assisted in their important responsibility, for example by ensuring the Lloyd's List newspapers the Company receives in both the Qinhuangdao and Hong Kong offices are given to the ships once they are finished with.

Conclusions

-- at the closing ceremony, after Certificates had been presented and appreciative speeches made, a brief communication exercise illustrated the hard work, concentration and great progress made by this group of junior officers in "thinking in English" without time for preparation or translation from the first language.

-- completely unrehearsed and without warning, different trainees were asked to refer to one of the posters on shipboard safety, of which 12 were posted on the wall of the training room; each Officer was able to explain the message portrayed in the cartoon type illustration, and some went on to also add the necessity to observe safety rules at sea, such as ensuring people keep clear when mooring lines are under tension during berthing and unberthing, making sure people do not enter cargo spaces unless they have been properly tested for gas content, and to wear relevant protective clothing ;

-- the Trainees' confidence and pleasure in using English fluently greatly impressed the visiting senior staff who then went out of their way congratulate the Trainees and their teacher.

-- the final accolade was the request for this Deck Officer program to be repeated early in the New Year, while the next training is for junior Engineer Officers in October to be conducted by my good friend and colleague, Mr. Roy Stall from Perth, Western Australia.

-- it is a real pleasure to share this recent training experience and the knowledge that this type of dedicated program - supported by a forward looking shipping company can be carried through successfully. With such a large fleet of bulk carriers and oil tankers, there are many more junior officers to be trained - 20 new bulkers are on order and another Company oil tanker is under conversion to a Very large ore carrier at a Dalian shipyard to be ready for next northern spring.

-- Officers and crews are needed for all these vessels and at present, it is the hope of the Hebei Ocean Shipping Co., that most will be available from China itself; however, it is realised this may not be possible, and that gradually, Hosco too will need to look at more multi-national crews from around the Asia Pacific region, which of course will also mean, multi-lingual crews required to communicate on board together in English.

This means a lot more upgrading training in Maritime English will be necessary and if people are interested in this type of 'hands-on' teaching - please do email me.

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Minimum (technical) vocabulary – some issues in Maritime English

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"Lexical problems frequently interfere with communication: communication breaks down when people do not use the right words". (Allen 1983: 5)

"Lexical competence is at the heart of communicative competence." (Meara 1996:35)

Abstract

The paper presents the concept of minimum vocabulary, research and methodology of arriving at a minimum vocabulary, and the applicability of the concept of minimum vocabulary to Maritime English. Also, reference is made to such limited vocabulary lists as GSL, AWL etc. Refernce is also made to the Common European Framework of Reference for Languages: Learning, teaching, assessment, issued by the Council of Europe. The paper aims to raise the issues in establishing minimum vocabulary requirements in Maritime English for various purposes: a BSc course in Nautical Studies and Marine Engineering; levels of competence as per STCW convention, etc. Group and final panel discussion is envisaged on some topics such as the vocabulary for the support, operational and management level, naming concepts, compounds and collocations, lexical families and lexical sets.

1. Basic concepts and definitions

Vocabulary is the meaning-carrier constituent of language. Together with grammar it adds words, i.e. flesh to the body of language. In this paper we shall be dealing with the minimum requirements on the knowledge of vocabulary in Maritime English (ME).

Although minimum requirements are dependent on language learning levels and the purpose or function of language usage, a brief survey of the basic concepts is necessary for establishing a definition of the notion of *minimum vocabulary*. These concepts carry various labels, e.g. *core English, basic English, technical vocabulary, minimum vocabulary, nuclear vocabulary*, etc., and are sometimes identical or may tend to overlap in scope and general usage.

Basic English is a constructed language with a small number of words, created by Charles Kay Ogden and described in his book *Basic English: A General Introduction with Rules and Grammar* (1930). It is a subset of English language, based on a simplified version of the language. The whole idea worked on the following assumption:

> "If one were to take the 25,000 word Oxford Pocket English Dictionary and take away the additions of our overly full language and take away the words that are able to be said by putting together simpler words, we see that 90% of the ideas in that dictionary are able to be done with 850 words." (http://www.basic-english.org/projects/452.html

According to Ogden it would take seven years to learn English and seven weeks for Basic English. Essentially, Basic English is used by some language schools that need to give people some knowledge of English in a short time. It contained words that could not be paraphrased with other words. Ogden put his set of words through a large number of tests and used simplified grammar. One of the strongest advocate of Basic English was I.A. Richards, who lobbied to teach it in schools especially in China. More recently, it has triggered the creation of "simplified English" - a standardized version of English intended for writing technical manuals.

Simple English (or *Everyman's English*) is an expansion of basic English, in the order beyond 850 words of basic English and up to the level of 2000 words – a threshold of Standard English as set by Ogden. While Basic English meets the requirements of primary school, Simple English can be defined as „Basic plus the 1,000 most frequent words in English", which

> „adds four general area words plus the Subsequent 350 and the Next Step 150 words of common foods, plants and animals (when found or a guess is made.) and the six affixes plus a couple from Basic compounds: -able (-ible), -like, -ive (from have, -ive, etc.), -th (for numbers). (URL: http://www.basic-english.org/projects/452.html

Core vocabulary is considered to be the basic and the most frequent vocabulary, used for defining other words, the nucleus of communication, necessary for text coherence and cohesion, vocabulary having great derivational and collocation potential. Some of the features of Core Vocabulary are as follows:

- it is common to all native speakers of a language
- it does not normally include loan-words,
- it does not include words with unstable pronunciation and spellings,
- it tends to be more regular,
- it has greater orientation towards the middle neutral point on the scale,
- it has an accepted antonym,
- it cannot be easily defined in terms of other words.

Core vocabulary is mainly applied in setting the defining vocabulary of a monolingual dictionary and for semantic description of other words. It is arrived at by applying a number of tests (syntactic substitution, antonymy, collocability, extension into compounds, idioms, multi-word units, phrasal verbs, superordinateness, culture-free, associationisms, neutral field of discourse). It can be classified into General Core Vocabulary (GCV – about 450 words), and Extended Core Vocabulary (appropriate to individual users for communication purposes across all environments).

Some of the main problems in respect of core vocabulary are:

- the relationship between core vocabulary items and their learnability and teachablity
- different subjects or domains (in the curriculum) will need their own lexical cores
- specification of core vocabulary in relation to learning purpose,
- frequency, range and distribution of occurrence across a corpus, etc.
- should, e.g. *start* be taught before *begin*, etc.

The best known studies in core vocabulary are the famous *word lists*, minimum vocabulary for a particular purpose, e.g. Ogden's Basic English, Michael Wests's controlled vocabulary lists (GSL: General Service List), Quirk's international 'nuclear English', etc.. In terms of relevance for Maritime English, we shall briefly describe the following corpus-based general service lists:

- *General Service List* (GSL - West 1953)
- *A General Service List of English Words* (Xue & Nation 1984)

- *A University Word List* (UWL - McArthur 1998)
- *The Academic Word List* (AWL – Coxhead, Averil 2000)

General Service List (GSL)

The General Service List (GSL) (West. 1953) is a set of 2,000 words selected to be of the greatest "general service" to learners of English. They are not the most common 2,000 words, though frequency was one of the factors taken into account in making the selection. Each of the 2,000 words is a headword representing a word family. Frequency numbers are given, and frequency data is also given for the various meanings of words. This list has had a wide influence for many years, serving as the basis for readering, etc. For a more information on GSL, and word lists in general, see Nation (1990, pp 21-24) and Carter and McCarthy (1988, Ch. 1).

The GSL is organized like a dictionary. Each of the 2,000 headwords is listed alphabetically with brief definitions and example sentences. A number is given for each word, representing the number of occurrences per 5 million words. A percentage number is given for each meaning, representing the frequency of that meaning in the occurrences of the word.

The frequency numbers given for the words provide a way to rank the words in importance for students of English. But, the following problems arise. First, the transcription of the numbers and words is a tedious task. Second is the issue of whether the frequency numbers of related forms should always be added to the headword before the words are ranked. If not always, in which cases should the numbers be added? A third concern is related to the age of the written material that the frequency numbers come from. This data was originally published in 1938 and 1949. Is this data sufficiently relevant to the current state of English? It remains the only available such list to provide frequencies for words in particular senses (word-in-sense frequencies) rather than raw word frequencies (or frequencies of words according to word-class). (http://jbauman.com/aboutgsl.html)

Here is some interesting statistics:

- The articles, *a, an, the* comprises 9% of English word usage
- The ten top words comprise 27%.
- 25 words comprise 36%
- 42 words comprise 42%
- 50 words comprise 43%
- 75 words comprise 50%
- 100 words comprise 52%
- 1000 words comprise 75%

Extended Versions of A General Service List of English Words

There is a number of extended General Service Lists. One of the extended versions, maintained in Excel format, allows for sorting and extraction of materials according to the following categories:

A. Line numbering (order in which entries appear in the printed version of the General Service List;
B. Headword as given in the General Service List;
C. Lemmatized headword, i.e. standard dictionary-type headword;
D. McArthur category;
E. Word-class;
F. Word count 1, as given in the General Service List;
G. Word count 2, 'raw' word count without additional information given in the General Service List;

H. Percentage scores for occurrences of words in a particular sense in the General Service List;
I. Word-in- sense frequency;
J. Source of information (given throughout as GenSerList);
K. Meaning (as given in General Service List).

Further information regarding these categories can be obtained at http://www.languages.salford.ac.uk/staff/dickins/ReadGSL2.doc.

The Academic Word List (AWL)

The Academic Word List, compiled by Coxhead (2000), is one of several vocabulary lists that does not connect directly with a single particular piece of literature. It includes ten units of sets of words most frequently found in school text books of all types, hence applying to non-fiction. The AWL, consists of 570 word families that are not in the most frequent 2,000 words of English but which occur reasonably frequently over a very wide range of academic texts. These 570 words are grouped into ten sublists that reflect word frequency and range. A word like analyze falls into Sublist 1, which contains the most frequent words, „while the word adjacent falls into Sublist 10 which includes the least frequent (amongst this list of high incidence words)... knowledge of the most high-incidence academic words in English can significantly boost a student's comprehension level of school-based reading material"

Technical Vocabulary

'Technical vocabulary' is a loose term, with 'specialised vocabulary' being almost synonymous to it. It is generally defined as a set of lexical items typical and statistically most likely to appear in specialised registers and genres, used for written and spoken communication among specialists.
It should be distinguished from 'technical terminology' in that the latter refers to standardised by abody of peers or an istitution, contextually independent, and semantically unequivocal set of terms in a particular field of human activity.

Both technical vocabulary and terminology can however be narrow and wide in scope. Thus the vocabulary of non-fiction text may be considered to fall within the scope of 'technical vocabulary' (cf. Nation & Hwang 1995: 35). In this work we are interested in the minimum vocabulary within a wider scope, i.e. encompassing not only technical terms (usually nominal phrases) but also minimum necessary semi-technical and general English vocabulary.

Before dealing with the *minimum vocabulary* in individual maritime sectors and in a general maritime setting, a brief survey will be made of what is understood and implied under the term Maritime English Vocabulary.

2. A typology of vocabulary in Maritime English

A typical Maritime English text represents one prominent register and a genre in the foreground, combined with one or two more registers in the background. Very generally, according to the subject-matter or extra-linguistic contents to which it refers, Maritime English can be sub-divided into the following sub-types:

1. Nautical English (the most traditional, narrow term for Maritime English, also referred to as 'seafaring English', 'the language of the sea', etc.)
2. Technical English (mainly marine engineering English, but also covering electrical engineering, marine technology, technology of transport, etc.)

3.Maritime English for communications, electronics, automation, information science, computer science
4. Legal English (used in shipping, maritime administration; maritime law and law of the sea also IMO conventions, codes, the language of IMO's mandate such as institutional texts on maritime safety and marine pollution prevention, etc)
5. Business English (shipping, logistics and management of maritime transport, etc.).

Accordingly, in view of registers and genres above, and in addition to highly frequent general English vocabulary (function words, etc.) and semi-technical vocabulary, the lexis of Maritime English can be categorised as follows (Pritchard 2003a):

(i) a very limited number (up to 5-7 %) of strictly technical / nautical terms, whose central lexical meaning (i.e. the word used in isolation, outside the context) is restricted to maritime use only and thus 'unambiguous' by nature (e.g. some terms referring to ship design and construction, general seamanship, cargo work, ship handling, etc. *fore-and-aft, halyard, starboard, bow, rudder, stevedore*),

(ii) numerous semi-specific items (usually a semi-technical words), often highly polysemous, which are disambiguated in the maritime context only, e.g. some verbs, descriptive adjectives and basic concept nouns or semi-lexical nouns *(heave, haul, steer; clear, bound; line, set, position, time, situation*),

(iii) function words (e.g. auxiliary verbs) and semi-lexical items (*let, make, provide, set, get*).

(iv) an unlimited number of very productive multi-word lexical units consisting of the words of general vocabulary having specific meaning in the maritime context and setting: compound nouns (*shipping forecast, deep-see trade, close-quarters situation, vessel traffic service, muster station, master station, land earth station, assistant engineer, finger pier, blue water, beat up*) and prepositional / adverbial phrases (*heave in, heave on, heave up, heave to, heave away*).

Another, more detailed division, adapted to the requirements of the Maritime English learner, includes the following vocabulary categories (Pritchard 2007):

a) terms used in ME only
b) general English words acquiring a new (technical, specialised) meaning
c) word families (e.g. inflections, derivations), morphology
d) multi-word lexical units (MWU) in ME:
    a. compounds
    b. collocations
    c. verbal phrases
    d. idioms, phrases
e) ME vocabulary across semantic relations (synonymy, antonymy, hyponymy; polysemy and homonymy/homography)
f) word or term associations (lexical sets - clustering around some maritime-related topics or maritime situations
g) words with a high degree of recurrence/frequency in ME
h) fixed expressions in ME
i) metaphoric use in ME
j) terms belonging to a particular maritime register (field subject-matter)
k) lexical elements of speech acts in ME (e.g. VHF conversations, etc.)
l) lexical elements of maritime discourse
m) archaisms in ME
n) function words in ME text and discourse

The classification above can be compared with the subdivision of vocabulary into four levels based on frequency of occurrence, as shown in Coxhead 2000, Chung and Nation 2003:

- 1st level: **high frequency words** – words belonging to GSL – 2000 most frequent words in English (80% of running words of academic texts and newspapers; 90% of conversation and novels) – all functional words (176 word families) and majority of content words (e.g.: *the, a, is in, out, between, 7, common, late, heavy, especially*); technically unmarked
- 2nd level: **academic vocabulary** (AWL) – a specialised extension of 1st level words – 8.5 % of academic texts, 4% newspapers, less than 2% of words in novels; also termed sub-technical or semi-technical vocabulary in technical texts; used in a wide range of academic fields but not highly frequent, though more closely related to high frequency words than to technical vocabulary (e.g.: *situation, part, time, position, support, forms, describe*); minimally related to a technical register
- *3rd level:* ***technical vocabulary*** *– 5%* of the running words in specialised texts – words frequent in and related to specialised text or subject area but low frequency or not occurring in other fields (*chest, skin, lungs, bony, ribs; bow, stern, heave up, steer, port side, shaft generator, cove, ridge, Stella Polaris, Bellatrix, relative bearing, Great Circle Sailing*)
- 4th level: **low frequency words** – thousands of words - cover around 5% of the running words in texts (*thorax, trachea; horse latitudes, periscope*); they are specific to a technical register in ME.

Of the four levels above the technical vocabulary and low frequency words have been least investigated.

3. Some issues in determining the minimum technical vocabulary

When dealing with the concept of minimum vocabulary, some questions seem to be relevant, i.e.:

- What is minumum (technical) vocabulary?
- How can technical vocabulary be recognized/identified?
- How many words does it include? How big is it?
- What kind of words make up a technical vocabulary?
- Are there any fixed scope of minimum technical vocabulary?
- How important is technical vocabulary in specialised texts?
- How can technical vocabulary be learned and taught?, etc.

A great deal of research has been done into vocabulary learning and teaching over the last three or four decades. Below are some recommendations for teaching the minimum number of words which various projects (Schmidt, McCarthy 1997, Nation 2001) have arrived at.

- *only numbers from 1 to 10* and *WH* question words in *L2*
- 120 items ("survival list")
- GSL (West 1953) , i.e. 'the first 2,000 words of a language' (Meara 1995);
- 3,000-5,000 word families
- 10,000 – (university textbooks)
- 15,000-20,000 word families

No such research has been done on Maritime English though fragmentary findings can be found in some projects as MARCOM, METNET, PROFS and in IMO STCW 95 requirements for operational, management and support levels for deck, engine-room and Watchkeeping duties involving communication on board.

Some authors, e.g. Neil Gratton (www.antimoon.com/forum/2002/157.htm), e.g. in analyzing the lexis of movie scripts, offer the following answers:

- It depends on what you need to be doing... for basic survival needs it's very hard to quantify but I'd guess between 300 and 1000 words (I assume you are already comfortably beyond this level!)
- 40 Movie Scripts were analysed; each script used on average a vocabulary of 3050 words. (some movies like "Seven Years in Tibet","Ghost" and "Braveheart" used less than 1500 different words each)
- Actually, of these only 186 words were common to all 40 scripts, 37 I0 words were common to at least 90% of the scripts.

Tom Cobb (www.wordhacker.com/en/article/userfrequency2learnwords.htm) suggests that 2000 most frequent word families make about 80% of all individul words in any English text. He also adds that 2000 GSL words with and addition of 570 AWL words covers approximately 90% of an academic text. To this amount we could add some more 2000 single maritime-specific words and as many combinations (compunnds, collocations) plus several hundreds thematic lexical sets in order to arrive at a minumum maritimer English vocabulary.

For dictionary compilation purposes, most studies today invariably rely on corpora of various sizes and computational corpus analysis. In the latter the minimum vocabulary problem mainly rests on indexing and other domains of information retrieval. Nevertheless, two major issues can be discerned: identification of minimum vocabulary, and computational analysis of the vocabulary. Perhaps the most important question however is: For what purpose do we need minimum vocabulary? There are two main purposes which impose themselves as most plausible answers in ME:

- safety at sea insured by unequivocal vocabulary
- teaching of Maritime English vocabulary

Thus, in his seminal paper 'Whither Maritime English?", F.F. Weeks (1997) categorizes (maritime) Englishes and their corresponding vocabulary for the following purposes:

1. Standard English,
2. Standard English with 'Belonging' English (for native English speakers),
3. Survival English for shipboard use,
4. Maritime Business English,
5. Technical English,
6. Communications English, especially for use over voice radio, and
7. IMO SMCP courses.

In Weeks, minimum maritime vocabulary is referred to as Survival English for Shipboard Use (3) and can, together with Nos. 6 & 7, be considered to meet STCW requirements for operational level (Deck) plus No 5 (Engine-Room).

Unfortunately, IMO STCW Convention 1978/1995 is somewhat vague in determining the minimum knowledge and competence in (maritime) vocabulary since it places very low minimum vocabulary requirement for the operational (OOW) level but at the same time requires good knowledge and competence in various domains of maritime communication.

On the other hand, it has been proved that vocabulary is one of the major obstacles for attaining reading fluency in a second language. Therefore, for efficient learning, the vocabulary systems must be structured in terms of frequency groupings so that „the more frequent items are mastered before the less frequent ones" (cf. D. B. Johnson 1972), Therefore, we have two solutions in determining the relative frequency of the words in a text:

1) the establishment of various word frequency groups, and
2) marking (identifying) the words in the reading text so that the learner has a clear set of rational priorities.

Statistical studies (conducted by Johnson in as early as 1972) suggest that approximately the most frequent 5,000 words constitute a minimum vocabulary for reading. These account for about 90% of the different words in an average text. This rises the following considerations:

- the learning of the less frequent items should be deferred until these are mastered
- the presentation of the higher frequency words within the 1,000–5,000 range should be sequenced by groups in terms of their relative frequencies.
- each group might correspond to a particular level of language proficiency.
- this goal can be attained by means of a system in which the frequency category of each text word is marked so that the learner knows its relative importance and can structure his vocabulary acquisition accordingly

There are basically two approaches to dealing with minimum vocabulary in specialised texts, such as those in Maritime English:

- recognizing/identifying technical vocabulary in ME texts
- statistical consideration based on samples (to see how technical vocabulary relates to other types of vocabulary).

As a subset of technical vocabulary, maritime vocabulary can be identified:

a) by intuition of subject expert(s), usually in close co-operation with experienced Maritime English teachers, and

b) by a corpus-comparison approach.

Intuitive methods include the use of:

1. a rating scale (cf. Farrell 1990) ,
2. a technical dictionary authored by subject experts (Nation 2001)
3. clues (contextual and others) used by relevant specialists, the author(s) of a maritime-related text (ME teachers or instructors) to mark "the words considered to be important for the message of the text" (Chung & Nation 2003).

4. Some statistical considerations

The corpus-comparison approach compares an analysis corpus with a reference corpus (a general English corpus, another technical corpus, a comprehensive Maritime English corpus,

or sub-corpora within Maritime English). The corpus comparison method can partly answer the questions of:

4. vocabulary levels in a technical text
5. the size of technical vocabulary in a set of texts.
6. relationship between GSL vs technical vocabulary,
7. kind of words making up the technical vocabulary and
8. the role of technical vocabulary.

We shall make use of the method applied in the research on technical vocabulary and study how this applies to Maritime Vocabulary, which can also be termed 'technical vocabulary'. Statistical research on technical vocabulary (showing, of necessity, minimum vocabulary as well) is presented in Sutarsyah, Nation and Kennedy 1994, Chung 2003 and Chung and Nation 2003. Their research has shown that the role of technical vocabulary in technical texts has been unjustly underestimated and that there has been little research as to how technical vocabulary relates to other types of vocabulary. They also show how relevant such research may be for second language learners and teachers.

For this purpose, in this paper we have selected three texts considered to be representative of three typical registers of Maritime English (nautical – F1, maritime law – F2, and marine engineering – F3). These have been transformed into text files and run through two programmes: RANGE and FREQUENCY available free at http://ww.vuw.ac.nz/lals/staff/paul_nation./index.html. The programmes use word types (rather than word families) and tokens and compare the vocabulary of any set of up to 32 different texts against GSL and AWL and generate the technically-related part of the texts. Level (step) four provides a list of words having very low frequency as compared to other three levels and is highly interesting in determining the technical vocabulary specific to a specialised text such as the three Maritime English texts mentioned above, in that they are likely to occur in one specific type of text (register/genre) only. Table 1 shows the distribution of the vocabulary of the three texts taken together across the four levels:

Table 1: Word list (types/%, tokens/%)

VOCABULARY LEVEL	NAVIGATION	MARITIME LAW	MARINE ENGINEERING
GSL (1st 2000)	578 /44.33%	416 /46.38%	388 /51.05%
AWL	152 /11.66%	61 / 6.80%	82 /10.79%
General technical words	262 /20.09%	162 /18.06%	112 /14.74%
Low frequency words ('maritime only' words)	312 /23.93%	258 /28.76%	178 /23.42%
Total types	1304	897	760
Total tokens	6880	4530	3081

As expected, the 1st 2000 GSL words cover roughly 50% of all types (here we shall deal with lexical types rather than tokens) in each of the three texts. The share of GSL words is appr. The same as in e.g. medical texts (cf. Chung & Nation 2003) though much less than in social science texts. The incidence of AWL types is much higher for navigation (11.66%) and marine engineering (10.79 vs 6.9%) than in medical texts (3.7%). However the maritime law text contains much less types than in other two texts, which can be attributed to text genre (report on a law case / court ruling).

The most significant, general technical words, are close on or slightly lower than in e.g. medical texts but much higher than in social science texts. These words become especially interesting when their collocability, lexical association patterns and other lexical features are studied.

The Table above also shows that, statistically, technical words could be relatively easily isolated from other types of vocabulary. This allows us to focus on levels 3 and 4 in order to distinguish technical from general English vocabulary and also to establish the similarities and differences among the three sub-maritime vocabularies. It should also be noted that word types rather that word families are studies in Table 1.

Our corpus encompasses three types/registers of maritime texts, considered to be sufficiently representative of maritime English:

- a marine reporting genre (*TSB Report – Marine 2003 – M03C001*) – 6880 tokens,
- a marine engineering report (M93M002 - 2003) – 3081 tokens, and
- a maritime law – court ruling report (Contichem v Parsons Shipping, 2nd Cir. 2000) – 4530 tokens.

Table 2 shows the presence of the four level words in the three specialised texts taken as a whole.

Table 2

WORD LIST	TOKENS/%	TYPES/%	FAMILIES
one	9810/67.70	923/40.11	562
two	793/ 5.47	257/11.17	169
three	1385/ 9.56	431/18.73	259
not in the lists	2503/17.27	690/29.99	?????
Total	14491	2301	990

It also shows what GSL, AWL and Gen Techn words these texts have in common (Table of Ranges):

1773	Words appear in 1 input files
396	Words appear in 2 input files
132	Words appear in 3 input files

More interesting for the Maritime English teacher and the learner are the compared lists of words belonging to the fields of navigation, maritime law, and marine engineering) occurring on the particular levels. Here are three samples selected randomly:

1. **Words from GSL (Base list one):**

	Range	Frq	Nav	Law	Engin
BACK	1	2	0	2	0
BACKGROUND	1	1	0	1	0
BANK	1	11	0	11	0
BANKS	1	2	0	2	0
BAR	1	2	0	2	0
BASED	2	3	2	1	0
BASIC	1	1	1	0	0
BASIS	3	3	1	1	1
BE	3	82	41	29	12
BEARING	1	11	0	0	11
BEARINGS	1	2	0	0	2
BECAME	2	2	1	0	1
BECAUSE	3	21	3	13	5

BECOME	1	2	2	0	0
BECOMES	1	1	0	0	1
BED	1	5	5	0	0
BEEN	3	33	17	2	14
BEFORE	3	17	6	7	4
BEGAN	1	1	1	0	0
BEHIND	1	1	0	0	1
BEING	2	4	2	2	0
BELIEVES	1	1	0	0	1
BELONGING	1	1	0	1	0
BELOW	3	8	5	1	2
BEST	1	1	1	0	0
BETTER	1	4	4	0	0
BETWEEN	3	25	14	3	8
BEYOND	2	2	0	1	1
BOARD	2	19	12	0	7
BOARDED	1	1	1	0	0
BOARDING	1	1	1	0	0
BODIES	1	1	1	0	0
BOTH	2	3	0	2	1
BRANCH	1	1	0	1	0
BREAKAGE	1	1	0	0	1
BRIDGE	1	15	15	0	0
BRIGHT	1	1	0	0	1
BRING	1	2	0	2	0
BROKEN	1	4	0	0	4
BROUGHT	1	1	0	1	0
BURNED	1	1	0	0	1
BUSINESS	1	1	0	1	0
BUT	3	15	6	4	5
BY	3	91	45	30	16
C	1	52	0	52	0
CALL	1	3	3	0	0
CALLED	1	3	3	0	0
CALLING	1	7	7	0	0
CAME	1	1	0	0	1
CAN	3	10	4	3	3
CANNOT	2	7	2	5	0
CAREFULLY	1	1	1	0	0
CARRIED	2	4	1	0	3

2. Words from AWL (Base List Two)

	Range	Frq	Nav	Law	Engin
ABSENCE	1	3	3	0	0
ABSENT	1	2	0	2	0
ACCIDENT	2	6	5	0	1
ACCIDENTS	1	1	1	0	0
ADVICE	1	5	5	0	0
ADVISE	1	3	3	0	0
ADVISED	2	3	2	1	0
ADVISORY	1	4	0	4	0
AFTERNOON	2	2	1	0	1
ANGLE	1	1	1	0	0
APPROVAL	1	3	3	0	0
ARGUE	1	1	0	1	0
ARGUED	1	1	0	1	0
ARGUES	1	2	0	2	0
ARRANGE	1	1	1	0	0
ARRESTED	1	1	0	1	0
ARRESTING	1	1	0	1	0
ASH	1	1	0	0	1
ATTENDANCE	1	1	0	0	1
AVOID	1	1	1	0	0
BALANCE	1	2	2	0	0
BLOCKED	1	1	1	0	0
BOILER	1	1	0	1	0
BOTTOM	1	3	3	0	0
BOTTOMS	1	1	1	0	0
BOUND	1	1	1	0	0
BOW	1	1	1	0	0
BROADCAST	1	2	2	0	0
BUSH	1	7	0	0	7
CAUTION	1	5	5	0	0

CAUTIONED	1	1	1	0	0
CENT	2	7	1	0	6
CHECK	1	1	1	0	0
CHECKED	2	3	1	0	2
COMPLAINT	1	2	0	2	0
CONFUSION	1	1	1	0	0
CONNECT	1	1	0	1	0
CONNECTING	2	6	1	0	5
CONNECTION	1	2	0	2	0
CONNECTS	1	1	1	0	0
COOL	1	1	0	1	0
COPIES	1	2	2	0	0
COPPER	1	2	0	0	2
COPY	2	3	2	0	1
CORRECT	1	1	1	0	0
CRACK	1	3	3	0	0
CRACKS	1	2	2	0	0
CRIMINAL	2	2	1	0	1
CRITICAL	1	2	2	0	0
DAMAGE	2	7	4	0	3
DAMAGED	1	1	0	0	1
DAMAGES	1	3	0	3	0
DEBT	1	1	0	1	0
DELAY	1	2	2	0	0

The words in the list above can be used for distinguishing general from technical or specialist use (for studying semantic change, pragmatic use, register labeling etc.)

3. General technical words: Base List Three)

Levels 3 and 4 are of particular interest for the maritime specialist and ME teacher/instructor because they refer to the words or word classes to which more attention should be paid in teaching. In addition, word lists (collocations, lexical sets) and concordances (KWIC) could be quite important in providing examples for all three stages of vocabulary teaching/learning: presentation, practising, production (PPP).

	Range	Frq	Nav	Law	Engin
REQUIRED	2	13	12	1	0
REQUIREMENT	1	1	1	0	0
REQUIREMENTS	2	5	4	1	0
REQUIRES	1	2	2	0	0
RESEARCH	1	1	0	0	1
RESIDES	1	1	0	1	0
RESOURCE	1	4	4	0	0
RESOURCES	1	1	1	0	0
RESPOND	1	1	1	0	0
RESPONDENT	1	1	0	1	0
RESPONDING	1	1	1	0	0
RESPONDS	1	1	0	1	0
RESPONSE	1	3	3	0	0
RESTRAINED	1	1	0	1	0
RESTRAINING	1	28	0	28	0
RESTRICT	1	1	1	0	0
RESTRICTED	1	2	0	2	0
RESTRICTION	1	1	1	0	0
RETAINED	2	2	1	0	1
RETAINS	1	1	1	0	0
REVEALED	1	4	0	0	4
REVERSE	1	1	0	1	0
REVOLUTIONS	1	1	0	0	1
ROLE	1	1	1	0	0
ROLES	1	1	1	0	0
SOLELY	1	2	2	0	0
SOUGHT	2	10	1	9	0
SOURCE	1	1	0	0	1
SPECIFIC	2	3	0	1	2
SPECIFICALLY	1	5	0	5	0
SPECIFICATIONS	1	1	0	0	1
SPECIFIED	1	6	0	6	0
SUPPLEMENT	2	2	1	1	0

SURVEY	1	15	15	0	0
SURVEYS	1	3	3	0	0
SUSTAINED	2	3	2	0	1
TARGET	1	1	0	1	0
TEAM	1	9	9	0	0
TEAMED	1	1	1	0	0
TECHNICALLY	1	1	0	1	0
TEMPORARILY	1	1	0	1	0
TEMPORARY	1	26	0	26	0
THEREBY	1	1	1	0	0
TRACE	1	2	0	0	2
TRACED	1	1	0	1	0
TRANSFER	2	15	4	11	0
TRANSFERRED	2	7	6	0	1
TRANSFERRING	2	5	1	4	0
TRANSFERS	1	1	0	1	0
TRANSIT	1	2	2	0	0
TRANSPORT	1	3	3	0	0
TRANSPORTATION	2	7	4	0	3
UNAWARE	1	2	2	0	0
UNDERGOING	1	1	1	0	0
UNDERLYING	1	3	0	3	0
UNDERTAKE	1	1	1	0	0
UNDERTAKEN	1	1	1	0	0
UNDERWENT	1	1	1	0	0

4. Specific technical words (not found in any list)

	Range	Frq	Nav	Law	Engin
ABEAM	1	1	1	0	0
ABOVE-WATER	1	1	1	0	0
ABRASIVE	1	6	0	0	6
ABREAST	1	1	1	0	0
ABUSE	1	1	0	1	0
ABUSED	1	1	0	1	0
ACCELERATED	1	1	0	1	0
ACCOMPLISH	1	1	0	1	0
ACIDS	1	1	0	0	1
ACTIVATION	1	1	1	0	0
ADJUDICATED	1	1	0	1	0
ADJUDICATION	1	1	0	1	0
ADMINISTERED	1	1	1	0	0
ADMIRALTY	1	8	0	8	0
AFFIDAVIT	1	1	0	1	0
AFFIRM	1	3	0	3	0
AFFIRMED	1	1	0	1	0
AFT	2	2	1	0	1
AFTER-ACQUIRED	1	1	0	1	0
AGENDA	1	1	1	0	0
AGGRAVATES	1	1	0	0	1
AGROUND	1	2	2	0	0
ALGOMA	1	2	2	0	0
ALGONOVA	1	8	8	0	0
ALLEGED	1	1	0	1	0
ALLEGEDLY	1	1	0	1	0
ALLIANCE	1	1	0	1	0
ALONGSIDE	1	1	1	0	0
ALUMINIUM	1	2	0	0	2
ALUMINIUM-BASED	1	1	0	0	1
AMERICAN	2	2	1	1	0
ANCHOR	1	1	1	0	0
ANCHORAGE	2	2	1	1	0
ANCHORED	2	2	1	1	0
ANOMALY	1	1	1	0	0
ANTHONY	1	1	0	1	0
APPEAL	1	5	0	5	0
APPEALABLE	1	4	0	4	0
APPEALS	1	7	0	7	0
APPELLATE	1	3	0	3	0
APPROVALS	1	3	3	0	0
ARABIA	1	1	0	1	0
ARBITRABLE	1	5	0	5	0
ARBITRAL	1	2	0	2	0
ARBITRATE	1	1	0	1	0

ARBITRATION	1	45	0	45	0
ARBITRATIONS	1	5	0	5	0
ARMAND	1	1	0	1	0
ASA	1	3	0	3	0
ASCERTAIN	1	1	1	0	0
ASSERT	1	1	0	1	0
ASSERTION	1	2	0	2	0
ASSERTS	1	1	0	1	0
ASSETS	1	6	0	6	0
ASTERN	1	1	1	0	0
ATELIERS	1	1	0	1	0
ATKINS	1	1	0	1	0
ATMOSPHERIC	1	2	2	0	0
AUG	1	1	0	1	0
AURORA	1	1	0	1	0
AUTHENTIC	1	1	0	1	0
AUTHORIZATION	1	3	3	0	0
AUTHORIZED	2	2	1	0	1
AUTHORIZES	1	2	0	2	0
AUX	1	1	0	0	1
AVAIL	1	3	0	3	0
AVERTED	1	1	0	0	1
AWAITING	1	1	1	0	0
AWARD	1	4	0	4	0
AWARDS	1	2	0	2	0
BALLAST	2	2	1	0	1
BARRIER	1	2	0	2	0
BAYFIELD	1	2	2	0	0
BECKWORTH	1	1	0	1	0
BERTH	1	4	4	0	0
BERTHED	1	2	2	0	0
BERTHING	1	2	2	0	0
BERTHS	1	1	1	0	0
BLOW-BY	1	6	0	0	6
BLURS	1	1	0	1	0
BOATING	1	1	1	0	0
BORDEN	1	2	0	2	0
BOTTOM-END	1	4	0	0	4
BOWLES	1	1	0	1	0
BRACKET	1	1	1	0	0
BRANDS	1	1	0	1	0
BREACH	2	5	2	3	0
BREAKDOWN	1	4	0	0	4
BRUNET	1	1	0	0	1
BRUNSWICK	1	1	1	0	0
BUILTGERMANY	1	1	1	0	0
BULKHEAD	1	3	3	0	0
BUOY	1	21	21	0	0
BUOYAGE	1	1	1	0	0
BUOYS	1	50	50	0	0
MANIFOLD	1	1	1	0	0
MANNED	1	1	0	0	1
MANOEUVRE	1	1	1	0	0
MANOEUVRED	1	2	2	0	0
MANOEUVRING	1	2	0	0	2
MARIE	1	21	21	0	0
MARINE	2	23	20	0	3
MARINE-RELATED	1	1	1	0	0
MARINER	1	1	1	0	0
MARINERS	1	8	8	0	0
MARITIME	3	34	1	32	1
MARYS	1	3	3	0	0
MATANE	1	4	0	0	4
MATE	1	1	1	0	0
MAVRONICOLAS	1	1	0	1	0
MCKENNA	1	3	0	3	0
MCKINNEY	1	2	0	2	0
MCLAUGHLIN	1	1	0	1	0
MCTS	1	2	2	0	0
MEDIUM-SPEED	1	1	0	0	1
MEIJI	1	1	0	1	0
MEMBERS14	1	1	1	0	0
MEMORANDUM	1	2	0	2	0
MERITS	1	1	0	1	0
MESSIH	1	1	0	1	0

METAL-	1	1	0	0	1
METAL-TO-METAL	1	1	0	0	1
METALLIC	1	1	0	0	1
METRIC	1	1	0	1	0
MEXICANO	1	1	0	1	0
MISSION	1	3	3	0	0
MIST	1	5	0	0	5
MM	2	11	1	0	10
MM-LONG	1	2	2	0	0
MOHAMED	1	1	0	1	0
MONTREAL	1	1	0	1	0
MONTRÉAL	1	1	1	0	0
MORTGAGE	1	2	0	2	0
MOTOBECANE	1	2	0	2	0
MOTOR-DRIVEN	1	1	0	0	1
NAUTICAL	1	2	2	0	0
NAVIGABLE	1	2	2	0	0
NAVIGATE	1	5	5	0	0
NAVIGATING	1	1	1	0	0
NAVIGATION	1	37	37	0	0
NAVIGATIONAL	1	9	9	0	0
NECESSITATING	1	1	0	0	1
NEGOTIATING	1	2	2	0	0
NICOLET	1	1	1	0	0
NOAA	1	5	5	0	0
NOMINAL	1	1	0	0	1
NOMINATED	1	1	0	1	0
NON-CONFORMITIES	1	1	1	0	0
NORDIC	1	10	0	0	10
NORSKE	1	10	0	10	0
NORTH-NORTH-EAST	1	1	1	0	0
NOS	2	7	3	0	4
NOTIFICATION	1	1	1	0	0
NOTIFIED	1	1	1	0	0
NOTSHIP	1	5	5	0	0
NOTSHIPS	1	1	1	0	0
NOURSE	1	1	0	1	0
NOVA	2	2	1	0	1
NTERTAINING	1	1	0	1	0
NUMBER814361	1	1	1	0	0
NY	1	4	0	4	0
OBJECTIVES	1	2	2	0	0
OBLIGATIONS	1	1	0	1	0
OCCURRENCE-RELATED	1	1	1	0	0
OCEANIC	1	2	2	0	0
OEUFS	1	1	0	0	1
ONTARIO	1	12	12	0	0
ONUS	1	1	1	0	0
OPERATORRIGEL	1	1	1	0	0
OVERHAUL	1	2	0	0	2

The list above is the most 'maritime-specific' list and also offers words peculiar to a particular maritime register or a specific maritime topic. An instructor can make extensive use of the word lists and concordances in planning her/his course design and conducting actual teaching. Students can also get involved in searching for examples and provide their own contextual and semantic information.

5. Practical considerations for learning second language technical vocabulary

For the Maritime English teacher three valuable results of computational analysis of a maritime corpus are: (a) the keyword list, (b) list of compounds and collocates, (c) list of thematic lexical sets and (d) list of concordance lines for a given word from any of the four levels above. These are obtainable by using software tools such as OxfordWordsmith Tools Ver. 4.0 and M. Barlow's MonoConc Pro.

For the sake of an example we shall show the concordance list for the word 'wear' (noun):

1. ... e liner wear and abrasive liner [[wear]]. 1.7.1.1 Corrosive Liner Wear ...
2. ... ntributed to the cylinder liner [[wear]]. 2.4 Monitoring of Wear Rate an ...
3. ... is case. 1.7.1.2 Abrasive Liner [[Wear]] Abrasive liner wear occurs when ...
4. ... cylinder liner wear are corrosive liner [[wear]] and abrasive liner wear. ...
5. ... ar; iron, liner and piston ring [[wear]]; and aluminium may be introduced throug ...
6. ... The two types of cylinder liner [[wear]] are corrosive liner wear and abrasive ...
7. ... 2.2.1 Lubricating Oil and Main Engine [[Wear]] As the main engine components ar ...
8. ... were the following: 1) Abnormal [[wear]] beyond the manufacturer's recommended l ...
9. ... in the oil could indicate bearing [[wear]]; chromium, piston ring wear; iron, ...
10. ... associated with engine component [[wear]]. For example, the presence of copper ...
11. ... erned about the excessive liner [[wear]] found in the No. 7 unit and decided to ...
12. ... sample are consistent with the [[wear]] found in the engine. As the No. ...
13. ... nos. 2, 3, 8 and 9 and over 50 per cent [[wear]] in the No. 6 unit. 2) Abnormal ...
14. ... nd checked, by touch, the liner [[wear]] in these units. Some wear was detected ...
15. ... ual evidence to suggest corrosive liner [[wear]] in this case. 1.7.1.2 A ...
16. ... ate bearing wear; chromium, piston ring [[wear]]; iron, liner and piston ring we ...
17. ... 1.7.1 Cylinder Liner Wear Liner [[wear]] is unavoidable in any engine. Excessive ...
18. ... ton moves within the liner. The [[wear]] is caused by metal- to-metal contact be ...
19. ... ting Instruction Manual, is 450 mm. The [[wear]] limit is 451 mm and an out of r ...
20. ... isfactory. 1.7.1 Cylinder Liner [[Wear]] Liner wear is unavoidable in any ...
21. ... ases the liner wear rate. Liner [[wear]] material becomes trapped in this carbon ...
22. ... unning time. The cylinder liner [[wear]] measurements taken at the time of the o ...
23. ... ch has shown that the corrosion [[wear]] occurs primarily during manoeuvring, lo ...
24. ... mal operating conditions, maximum liner [[wear]] occurs at or near the combustio ...
25. ... rasive Liner Wear Abrasive liner [[wear]] occurs when the piston moves within the ...
26. ... groove landing, resulting in higher [[wear]] of the ring and the groove. As ...
27. ... 3.1 Findings The substantial [[wear]] on the cylinder liners can be attribute ...
28. ... No. 8 liner was 4,307, giving a [[wear]] rate of 0.3761 mm/1,000 hours, i.e., 25 ...
29. ... to the manufacturer, the cylinder liner [[wear]] rate is expected to be between ...
30. ... *process and increases the liner [[wear]] rate. Liner wear material becomes trapp* ...
31. ... were recorded. From this, the liner [[wear]] rate per 1,000 hours could have ...
32. ... i.e., over 14 times the normal [[wear]] rate. Between the last two cons ...
33. ... ours, i.e., 25 times the normal [[wear]] rate. Perusal of the liner meas ...
34. ... r liner wear. 2.4 Monitoring of [[Wear]] Rate and Preventive Action Perio ...
35. ... program in place. However, as abnormal [[wear]] rates of the main engine compon ...
36. ... tenance periods showed that the average [[wear]] rates varied between 0.157 mm/1 ...
37. ... ombustion gas blow-by in the crankcase. [[Wear]] rates are kept to a minimum by ...
38. ... h 1993 revealed that higher-than-normal [[wear]] rates were experienced in all b ...
39. ... s crew since 1991 showed abnormal liner [[wear]] rates. The lubricating oil sy ...
40. ... aterial) and, as abnormal liner [[wear]] rates were observed in some units durin ...
41. ... ated. Abnormal cylinder liner [[wear]] rates were found in six out of the nine ...
42. ... but the No. 5 liner. In the latter, the [[wear]] rates were marginally above nor ...
43. ... as again examined for excessive [[wear]]. Subsequently, the main engine piston c ...
44. ... ay be introduced through piston [[wear]]. The elevated levels of these four elem ...
45. ... ch, the liner wear in these units. Some [[wear]] was detected on the No. 2 liner ...

6. Conclusions

Instead of conclusion the author would like to instigate a piece of vocabulary research in groups among peers during the paper delivery and a panel discussion on some key issues in determining minimum technical vocabulary in Maritime English for the various levels as per STCW 78/95. The following issues will be studied an discussed in groups:

1. What kind of words make up a maritime vocabulary?
2. How many Maritime English words does a deck or engine-room department rating or officer need: (a) for support level, (b) for operational level, (c) for management level (STCW)?
3. How many ME words would be appropriate for obtaining a three-year BSc degree in nautical studies and marine engineering?
4. Working in groups (nautical, engineering, maritime law) on a particular text (see the discussion of corpus in Section 3) IMEC 19 attendants make their own lists, then check and discuss their ideas (i.e. support their cause) of the four levels of vocabulary in a given ME text.
5. How do we recognize a ME word?

6. Reliability check: working in three groups IMEC 19 attendants assess the degree of specificity of the lexical item/s (i.e. word-form ascribed only one meaning in an utterance) in the field of Maritime English). Participants first work individually and then in groups. Their task is to assign the fifty words to the four-pint scale/steps: (GSL, AWL, general technical words, maritime- or text-only words).

Finally, this paper urges for a compilation of a sizeable and representative corpus of maritime English textsto serve as the basis for determining

(a) the four levels of ME vocabulary
(b) ME compunds and collocations, and
(c) Lexical sets in ME (thematic vocabularies).

The results will be reported to the plenary and carried over for further research. The outcome and further research is to be presented at IMEC 20.

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SHIP'S ACCIDENT BEHIND CULTURAL BARRIER IN ENGLISH COMMUNICATION

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1. Abstract:

Goal of this paper is to build a comprehensive analysis on cultural factors on seamanship practices in English Communication that have happened in critical condition and could bring to ship accident. Based on cases that had abundantly existed in Indonesia, the writer want to exemplify an analytical survey on its basic cause that might have brought certain relation to English communication. Consider to those significant numbers of cases, a conceptual frame of thought had been constructed in order to explore several factors that have significant influence to the ship accident. This paper has provided also with diagrams, tables and graphical chart for explaining the main problem. A crisis simulation scheme for maritime students has also been developed to emphasize on the analytical model and may become important point on fulfilling competency standard of English communication for seafarer's training scheme

Key words:
Cross-cultural communication, competency gaps, ethnical background, diagram, graphical chart

2. Introduction

This discussion will be started with a general background that has drifted the writer need to expose on connection that might be happen between English communication and cultural factor, where without careful management of its existence could have contributed on the ship accident. So far, final statements for most of those accidents in Indonesia have been termed as "human errors." It means that the real cause for every ship accident has no exact answer for some curiosity of maritime stakeholders in the country and general public as the end user of public transport on the sea.

In such condition, the world of seamanship in practical conduct of seafarers, which have a wide range of qualification according to their training background and area coverage of sailing courses, has become a direct target for blaming of low responsibility to every kind of ship accident. Unfortunately, the use of English communication has still become a big barrier, rather than a good way for conducting a proper safety procedure in a critical condition. Usually it is because of a predominant cultural background, working area and limited support of the people who have been working with, especially among seafarers in local Indonesian setting.

However, this case will be important for further discussion of this international plane, since each person who have to live and work in the maritime sector and hence have also obliged to develop seamanship in every place, has on the other side can not avoid of meeting themselves up to the current requirements. Instead, the use of mother tongue has practically become the most instant way of expression, which unfortunately will have brought forward a significant source of mounting distress condition and misunderstanding that may bring further to fragile communication and obvious ship accidents in the end.

In communication studies, it also becomes an interesting case, because it covers to inter-cultural mode of personal adjustment that so easy to be adopted. in order to eliminate what so called as the "professional communication gap." That's why this paper will make it as a focus of scrutiny in order to build a better training of seafarers with certain format of behavior modification on English communication.

3. Indonesia: Context of the Exposed Problem

As a maritime country that has the highest number of islands with the richest biodiversity collection and owner of the largest oceanic area in the world, Indonesia has so far been acknowledged also with the biggest potential of sea fish. Unfortunately, living condition of fishermen in this country has predominantly been trapped down in a large swamp of a slow development process and has to live with poor sanitation and low technological expertise. As a result, in a contradictive expression, out of about 20 millions there are more than 90% of fishermen who have always been entangled with poverty and owned small size of boats with little fish nets in order to make their life kept running for day after day struggle.

Further to this imminent background, there are ironically so little number of young generation of these people group who have enthused themselves to empower their future with proper skills and good maritime education. Most of the present students, out of more than a hundred maritime training schools of secondary and tertiary levels, have strangely come from big cities and hence have not collected maritime life style yet or at least they have so little experience with sea life.

Table 1: **Number of Ship Accidents In Indonesia, 1986-2006***

Years of record	Total accidents**	Average cases/year
1986-1993	803	116
1994-2000	641	107
2001-2006	784	131

Note: *) Rough calculation out of figures that have been published in printed media, 1990-2007

**) These numbers involved only for licensed motor vessel

Another thing that may draw further attention to its attributive role for economic support, things that so far have been acknowledged as "affordable cost" of Indonesian sea transport system (which have also been stung by fatal accidents) has become a paradox of involuntary thrift for Indonesia. In stead of had enthused real high yielding means to the medium scale of economic enterprises on ocean fish and the maritime sector at large, actually the fertile sea area has rather been known as only a place for sorrowful death

gate, because of a significant high occurrence of ship accident with all of its consequence of great number of victims in concordance to those cases (look further on Table No.1 and 2). No wonder that it seem has also become a tragic fate for this country, since the wide area of beautiful ocean has built for its own position with improper function of only become such an unlimited abominable graveyard rather than earns its attribution as a source of abundant food with certainly contains high nutrient fresh meat.

Table 2: **Numbers of Victims due to Ships Accidents in Indonesia, 1984-2006***

Years of record	Total victims	Average victims / year
1984-1993	612	61
1994-2003	2215	222
2004-2006	1178	393

Note: *) General calculation of figures that have been published in printed media, 1990-2007

4. Cultural Background as Predominant Factors in Cross-Cultural Communication

Looking at the first diagram (Figure A), the present discussion will analyze at first on a rather comprehensive frame of thought that may affect on interactive communication in the market place, especially in the maritime profession. Here in this case, maritime students and the seafarers as well have actually bound themselves as members of professional circle, where the English communication at work is a must, especially when they have been engaged on board with their professional fellows. So, they have been forced also to creatively involve their own personal feeling and living struggle of each, both in their own area of ethnological heritages with its cultural properties and in immense chance or threats in their working place. This embedded condition have tied them since in the training scheme until on their daily life at work, especially when they have to use English as the formal rule of the game.

4.1. Enigmatic Problem of English Use in Critical Condition?

Depending on one's personal maturity, cultural background (that have so immensely influenced on every Indonesian seafarers in everyday life) has usually become significant barrier for further step of communication process in this current global perspective. However, this condition might have often become a good chance to enthuse them for getting more useful images in order to build a richer dimension. Otherwise, it will only in a small and insignificant occasion for their maturity. If it could have eventually grown well for every participants of communication process, especially in order to meet its professional requirements, there will be a growing insightful working place that encourage also for higher personal maturity. Any critical condition that could also happen during their voyage will become a chance to encourage every seafarer on board aptly to keep the best awareness out of imminent dangers and should be kept as good conduct accordingly to the standard operation of procedure (SOP).

Unfortunately, the inherent problem is that such an ideal condition may not appear in every day life, more over in a vessel comes from non English speaking countries. Based on indirect investigation (of this writer) in relation to rather extensive talks and visits for

maritime students during their internship schedules, use of English communication have no significant application. It has happened like that because there has existed a feeling of "sufficient conduct" with their national language, or even with their own mother tongues of each. It means that there has not been developed yet a necessary obligation to make use of the formal English communication. Besides, there has also happened what so called as a biased communication session in their previous English training, because they have on the contrary felt for several funny things on speaking with that formal language due to strange expression or different understanding in case of homonymic terminology. That's why, as what has usually called also in their own words, the most urgent communication in their circle is on how to easily understand its real meaning for every critical case, regardless to professional requirements in relation to English use for seafarers.

More over, the use of English communication in this specific circumstance has still been assumed as a great barrier for proper conduct in order to overcome any critical condition, because most of their on board staffs have accustomed more on the use of every day local language, as their mother tongue. Besides, on a political plane they have to pay full attention to their national language. So, the English terms in critical condition have still grown at a low standard of professional level for skilled Maritime's professionals. It means that cultural setting and the use of every day local language has still become a predominant factor for the existing formal job, even in their high requirements of safety management. If there had unfortunately happened any ship accident, which usually brings also a certain number of victims, commonly there have still been stated that the captain bears the biggest responsibility and the use of English communication has nothing to do for the case. The horrible event would then get its assumed labeling status of what the common world's view would like to say, i.e. as only a regretted fate in this life.

The next curious question is: Why the use of English communication could not yet become a proper way of professional conduct of seamanship in order to avoid this fatal case? Here, instead of its difficulty as the third or even the fifth grade below the "supposed sufficient use" of their mother tongue, there have also grown well another predominant "cultural" factors out of the official circumstance (that has become spirit de corps). Simply said, there had germinated such a 'bureaucratic ache' which had already grown up to be a 'systemic illness.' In this form, it has become a culture of destructive predisposition for every step to build any professional standard of conduct for seafarer. Frankly speaking, out of the consecutive Indonesian ruling regimes (maybe with several other countries on similar condition) there have been acknowledged a somewhat unstable governing body that deeply entangled with a corruptive behavior. In such a dangerous situation, its defective impact has wildly grown also as a malignant flaw in almost all level of bureaucracy, which significantly has affected every day life of the professionals.

In other words, it is no more wonder that the present use of every day English for communication among Indonesian seafarers has indirectly to struggle with the second big threat, i.e. the corruptive behavior of the ruling bureaucrats. So, it has become a vicious psychological trap, which certainly have also obstructed on fresh mentality to develop a proper use of the standard procedure of operation that should meet up to requirements at the present international level. The deficient use of English for daily practical life of seamanship has been further emphasized here as a ruined mode of communication, which has also appeared during regular conversation in the form of blank ideas, misspelling, and unnecessary mistakes when the seafarer on duty has to meet with formal guests, more over when suddenly had been trapped down in a high critical condition. As has been clearly sketched in the diagram (Figure B), instead of getting a recovered process of communication, there have in other wise usually found its end on possible ship accident.

4.2. What about It's Relationship to English Training?

So far this paper has exposed that the deficient use of English use for professional communication may come from a giant burden out of cultural circumstance and improper manner of institutional ties. Besides, indirectly this paper has also discussed about the present English training scheme that, especially in relation to the case that had happened in Indonesia, unable to make their students aware of its unnecessary mental trap in their own personal development. Maybe there will be raised a question: How does one analyze this significant psychological symptom?

Here in this part, will be discussed at first about the predominant use of English among Indonesian seafarers in relation to their own working site. In the following Table 3 there appears that on the first column become an important indicator for every seafarer should adjusted themselves to certain typical working place. Hence, in a port (or vessel) within international link should also bring obligation to everyone to bear for intensive English communication, with a multi-ethnic circumstance and with a various level of professional aptitudes of technical skills and language mastery. It means that a professional seafarer should prepare himself (herself) for a possible difficulty that may come to a level of so complicated condition, where the highest level of English competency should have become the only way to overcome any kind of cultural background. Several other context of English use has shown a decreasing level of competency, but as has been discussed in previous section, has also brought a bigger consequence on fatal ship's accident.

Table 3: **Matrix of English Use for Professional Communication in Indonesia, 2007***

Context of English Use	***Varieties of cultural barriers***	***Level of English Use***			
		No use	Elementary	Intermediate	Advanced
International	Multi-ethnic -many countries	V	V	V	V
Regional	Multi-ethnic – some countries	V	V	V	?
National	Multi-ethnic – same nationality	V	V	?	-
Provincial	Multi-ethnic – Different tribes	V	V	?	-
Local	Some ethnic group only	V	?	-	-

Note: *) Based on personal survey when visiting to maritime students their internship session

In order to know further on a direct connection between the possible fatal consequence in ship's accident and the urgent use of English use for proper seamanship, a simulation test had been arranged in the Ganesha Maritime Academy, Yogyakarta, Indonesia. This simulation has been designed to know about any difference of competency among students in the English training when they have to solve problem in a critical condition. It means that the special test should be conducted in three different situations, where all of its condition should be under a measurable control, in order to see its relevant effect on possible seamanship conduct due to various levels of their competency in English communication. In each test that had been conducted at a nautical laboratory for the best ship maneuver, every participant should answer 20 specific orders that come from the

appointed person, which had acted himself as the captain in charge. Every answer for consecutive orders at determined time schedule have been designed also to represent one's capability to follow any necessary action in relation to certain "critical danger" of a vessel at sea.

The final result of those simulation tests can be shown in the Table 4. Statistically, there can be shown also that there is a significant difference of English competency among the maritime students in those examinations. In order to exemplify further to its relevant measurement, it has later on can be drawn on the Figure C, whereas several things that have been discussed about imminent dangers in relation to the deficient use of English communication have found its own places, prior to any obvious chance of ship's accident.

The elliptical area shows that in a critical condition of any voyage there might come a sudden gap of English communication that depends upon the student's competence, their cognitive perception upon the real problem and their personal maturity. Specifically, the graphical presentation shows also about cultural factor that gives a significant contribution to the gap beside the professional and critical condition that had affected to the whole participants of the examination.

Table 4: **Final Result of Three Simulation Tests in English Communication At the Ganesha Maritime Academy (3rd Year Students only), 2007**

Levels of Achieved Marks	Responsible Person in each Condition of Simulation Test on English Class			Number of participant in each of simulation test
	Registered Instructor	Appointed Student	Instructor with a chaotic communication	
Normative Standard*	68.5	64.6	44.7	1
The highest mark	67.2	64.4	43.9	1
Average of modes area	61.4	58.2	30.2	23
The lowest mark	37.3	26.8	16.3	1

Note: *) Minimum passing grade of the third grade of Maritime student is 60, but in this case there only two students who earned the highest mark
**) Contingency Coefficient for the dashed figures is significant at 0.01

5. Conclusion:

- Ship's accident should be analyzed carefully in relation to the practical English communication that has happened during a critical condition prior to its incident, where a certain recording tools should also be installed within the vessel like a black box in the airplane, so that there can be found its exact cause
- Training program on English communication for maritime student – especially in non-English countries – need a careful attention to any cultural factor and institutional condition as well that may have still become significant barriers to enthuse them to build their own personal dignity as a professional seafarer
- Maritime Students and participant of refreshing course for seafarer should find an enjoyable English training session in order to make themselves capable for self propagating person with a great personal confidence

IMEC-19 WORKSHOPS

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Title of Workshop	**The culture of safety onboard!**
Abstract	This will be a practical workshop looking at the role of culture, and the importance it plays especially when working with foreign/ mixed nationality crews. We'll then be looking at how cultural differences can affect the safety aspects onboard. We'll be dealing with real-life experiences. We'll be looking at how to anticipate problems and consider ways of dealing with this. Participants will be actively involved exchanging ideas, experiences and solutions regarding cross-cultural issues in respect to safety.
Key-words	

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Title of Paper	**SMCP in Pilots**
Abstract	The workshop will be introduced by Willem Bentinck, chairman of the Dutch Pilotage Service, Ymond Region (Amsterdam and Ymuiden). The Dutch Pilotage Service has integrated SMCP in their simulator training for pilots and shore based pilots. Before their training courses start workshops are given by STC Group that has been developed in close cooperation with the pilotage service. We distinguish two groups: ordinary pilots and shore based pilots. Contrary to pilotage on board, a shore based pilot cannot use body language to help him/her communicate with the helmsman. In the workshop we will practise with some exercises from the STC training and the simulation program from the pilots. Ms Angelica Plag, an experienced teacher in maritime English from STC B.V. will assist in the workshop as well.
Key-words	Pilots and SMCP

AN ACADEMIC REPORT WRITING COURSE FOR NAUTICAL COLLEGE STUDENTS

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ABSTRACT

Academic writing college courses aim to prepare students for college life by training them to become critical readers of their specialist literature, analyze information from various sources, present well-supported arguments and do independent research work. In other words, the success of an academic writing course lies in its ability to help learners perform well in other college courses by completing course assignments, answering exam questions, doing necessary research work, and present graduation projects.

For non-native speakers, producing academic work in English is an extremely challenging task for linguistic and cultural reasons. Linguistically, students are required to write in a language they do not master, and deal with the specialized language of their field. As for cultural difficulties, every culture has its own conventions for organizing ideas and presenting logical arguments. Non-native writers are, thus, disadvantaged even more due to cultural differences in presenting logical reasoning.

The present paper reports an institutional experience of developing a Technical Report Writing (TRW) course for nautical college students at the Arab Academy for Science and Technology and Maritime Transport (AASTMT) in Egypt. The paper first provides a brief description of the Maritime English (ME) programme at the Nautical Department. This is followed by an examination of the needs for the new TRW course and an overview of the stages of course design and material development/implementation.

Keywords: English for Specific Purposes. English for Academic Purposes, Maritime English, Technical Report Writing, course design, material development

1. Introduction

Academic writing courses are mainly designed to equip learners with the necessary knowledge and skills to deal with the requirements of college life and relevant academic research (Mo & Campus, 2005). College students need training on academic writing for a variety of purposes. At the analysis level, students need to learn how to critically read academic texts, which requires analyzing organizational patterns and recognizing the author's style and line of reasoning. Students, thus, need ample practice on a multiplicity of skills, such as note-taking, paraphrasing and summarizing. At the production level, students need to learn how to think logically, organize their thoughts in unified and coherent discourse and utilize relevant information from a variety of sources to substantiate their arguments. Such skills are required whether students are answering exam questions or writing reports, graduation projects or theses.

Academic writing courses in Maritime English (ME) college programmes could even be more challenging for learners and instructors alike for many reasons. First, learners in this setting are not only challenged at the level of critical reading or organization skills, but they could even suffer at a more rudimentary level due to much more basic linguistic problems. Being non-native speakers, students may not have a satisfactory language proficiency level to be engaged in academic writing. Their poor English language abilities may hinder their acquisition of relevant academic reading/writing skills. Second, students are even more challenged within such contexts because they have to deal with both academic and technical language. ME academic writing courses usually engage students in producing essays or reports on navigation-related topics. Students who are not familiar with technical English are, thus, doubly challenged. They are caught up in between academic and technical language. Third, the task is even more daunting for non-native students because the conventions for presenting logical reasoning vary from one culture to another. Students who write 'good' essays in their native language may find red question marks on their ME essays due to their inability to conform to the way logic is structured in academic English language discourse.

The present paper reports an institutional experience of developing a 90-hour academic writing course for nautical college students at the Arab Academy for Science and Technology & Maritime Transport (AASTMT) in Egypt. The AASTMT College of Maritime Transport and Technology expressed an urgent need to develop the students' competence in the English language in general, and also to improve their academic writing skills. Students' mastery of the English language, on the one hand, has become a priority for college graduates to compete in the maritime market. On the other hand, the College management emphasized the importance of teaching all navigation courses in English, a fact that highlighted the need for training students on academic writing to handle exam questions, classroom/homework assignments and graduation projects. The Institute for Language Studies (ILS), the institute responsible for providing all AASTMT colleges, centers and institutes with language services, actively responded to the College demand and developed a new Maritime English Language Programme that includes three components; general, academic and technical English language courses. The course 'Technical Report Writing' (TRW), the course described in the current paper, comes as the final course in the ME programme. This is why a brief description of the general framework of the ILS ME programme as a whole is outlined in the coming section, which is followed by an overview of the needs analysis, course design and material development/implementation stages of the TRW course in specific.

2. Description of the ILS ME Programme

A new ME programme was launched in September 2006 at the AASTMT Nautical Department with the aim of upgrading the students' command of the English language to meet the compelling challenges of the maritime industry. Realizing that college graduates with low proficiency in the English language are incapable of competing in the maritime professional world, the College management was prepared for radical reform changes. The new system requires all applicants to the Nautical Department to sit an English language placement test upon enrollment. Any students scoring below an intermediate level join an intensive general English language course, referred to as GEP. GEP classes are arranged in a homogeneous manner based on the placement test scores. Beginner students are grouped together and a similar grouping is arranged for elementary and pre-intermediate students. Classes run 24 hours per week and are designed to develop the students' four language skills and enhance their lexical repertoire and grammatical accuracy. GEP classes strike a balance between the four language skills, but also place emphasis on other relevant oral communication skills through engaging students in role-plays, interviews and presentations. They also include a component of academic writing where students are trained to organize their thoughts into academic paragraphs.

Students scoring an intermediate level or passing the GEP courses study regular navigation courses including four ME courses; ME I, ME II, ME III and Technical Report Writing. The first three courses include an academic component and a technical component. The academic component, using ready-made course books, enhances students' skills to listen to talks/lectures, participate in discussions, give presentations and write academic essays. The technical component, which mainly employs in-house written materials, enhances students' four language skills within a technical context. It also develops students' technical lexicon and relevant grammatical accuracy. Students are also introduced to a variety of maritime documents as part of training on functional writing, such as arrival/departure checklists, and accident reports. Besides, students are familiarized with IMO standard marine communication phrases that are relevant to course topics, such as the phrases used for briefing crew/ passengers, managing canal/lock operations and giving standard distress messages. Each ME course book consists of eight thematically structured units, each of which ends with project work. In these projects, students are involved in a variety of communicative tasks that require out-of-class use of the English language, such as conducting interviews, preparing short reports and giving mini-presentations.

The TRW course is the last course in the ME programme. It, thus, builds upon all the skills that students acquire during their GEP and ME courses. This allows much bigger flexibility in course design for a number of reasons. To begin with, students joining the course should be able to demonstrate a minimum language proficiency level of relatively high intermediate. Their exposure to the English language in the GEP and/or the ME courses should enhance their linguistic competence. Second, the course can proceed in a more integrated manner, with students gathering information from various sources before writing. This is facilitated by the fact that students have been previously given ample practice on the four language skills. Besides, practice on relevant grammar rules/structures has already been provided, which allows course designers to place more focus on the transfer of this knowledge to language production. Third, students joining the course have already been trained on academic writing in a gradual manner during their ME courses. ME I and II train students to write one/two paragraphs whereas ME III requires students to summarize and write academic essays. The

TRW course, hence, can start by training students to write different patterns of academic essays, such as chronological, cause/effect and comparison/contrast.

3. NEEDS ANALYSIS

Courses of English for Specific/Academic Purposes (ES/AP) are goal directed (Gillette, 1996). They pay special attention to learners' needs and wants. Learners usually join such courses with clearly defined aims that need to be met within a limited period. If these goals are not, thus, shared between instructors and learners, the course loses its validity and students become demotivated. With academic writing courses the case is specifically clear because students and college academic staff usually have a strong urge to see fast results. ME instructors are often faced with pressurizing questions from college staff; "When can we include essay questions in exams?", "How are you preparing our students for their graduation projects?" etc. This is why such courses must be specifically designed to address the college's and learners' needs; otherwise, they are doomed to rapid failure.

The need of the AASTMT Nautical Department for an academic writing course was examined within the more general needs analysis conducted prior to the launch of the new ME programme. The ILS team held needs assessment meetings with some Nautical lecturers suggested by the College management, interviewed some key College administrative personnel, received oral and written feedback from ME instructors concerning the students' language proficiency level and academic writing skills, and interviewed students at random regarding their needs from such a course. The objective needs, specified by the College staff, mainly targeted the academic requirements of college and post-college life. The subjective needs showed some shared vision between the College management and students although students placed more emphasis on job-related demands.

2.1. Objective needs

The objective needs identified by ILS staff can be specified in the following points:

- Answering college essay questions
- Writing informal reports as part of college assignments
- Writing graduation projects
- Giving oral presentations

2.2. Subjective needs

Through the interviews with students, the ILS staff identified the following needs for the course:

- Doing college assignments
- Giving oral presentations
- Writing CVs and letters of application
- Managing job interviews

4. Course design

4.1. Specification of aims

Based on the needs analysis, the ILS course designer formulated the following aims for the course:

- To effectively apply the stages of the academic writing process
- To write well-structured, unified and coherent academic essays
- To apply the ethics of academic writing
- To summarize/ paraphrase relevant texts
- To describe technical illustrations
- To include in-text citations in writing when necessary
- To document research sources
- To write relatively short formal reports
- To give oral presentations
- To write effective CVs and letters of application
- To sit for job interviews with confidence

4.2. Design of lecture schedule

The TRW course duration is 90 hours/ 15 weeks. Students take three 2-hour sessions every week. According to the Academy assessment scheme, students must be continuously assessed and be informed of their progress by the end of the 7th-week and 12th week before sitting for the final exam. ILS ESP staff, thus, had to meet the course aims within the time framework set for the course. Table 1 shows the initial lecture schedule set for the course in September 2006.

The lecture schedule starts with a quick review of the basic principles of academic essay writing. In week 1, students analyze the basic organization pattern of academic essays. How introductions/ conclusions are written and body paragraphs structured is revised in one session. Then, students are involved in a writing workshop where groups of students produce academic essays. Peer editing and evaluation is encourged by the instructor. During each of the following four weeks, students are introduced to a new type of academic essays; logical, chronological, cause/effect and comparison/contrast. Every week is dedicated to one pattern. In the first session of the week, students analyze an academic essay that belongs to the set type. The following session, students are involved in a non-graded writing workshop based on listening or reading a technical text. For example, students write an essay of a logical pattern based on the notes they take from a lecture on types of anchors. They also write a comparison/contrast essay on general and bulk cargo ships using an outline they complete from a lecture on these two types of vessels. The last weekly session engages students in writing an essay of the same pattern on a technical topic. Students' writing is guided by different kinds of prompts, such as time lines, flow charts, mind maps and tables. The prompts train students to write based on information gathered from different sources and in different formats. The prompts are also designed in a way that allows students to add more information/opinions to the basic outlined points.

The first five weeks, hence, provide students with practice on different essay patterns in preparation to the transition to report writing afterwards. During the sixth week, students are

introduced to the basic format of the report, including the acknowledgments, abstract, table of contents, introduction, conclusion, glossary, index and appendices. They are also familiarized with the basic principles for giving oral presentations through watching a lecture on effective presentation skills and then evaluate some effective and ineffective video-taped segments of presentations. Since this week, students know that for the rest of the course they will be involved in the preparation of their end-of-course final report, which they will have to defend by giving an oral presentation in front of their instructor and classmates.

The following topics covered in the course gradually help students with their report writing. First, students are encouraged to search for interesting nautical topics for their reports and discuss the project outlines and sources with the instructor. This is followed by two sessions on dictionary skills in order to encourage learners' independence during report writing. The sessions mainly train students on the identification of the right dictionary sense for difficult words in context and the choice of the right synonyms in production based on careful examination of the dictionary entry. Then, students are trained on the skills of paraphrasing and summarizing, which constitute a big part of their work with their reports. This is followed by practice on describing technical illustrations, including in-text citations and documenting research sources. Throughout these weeks, students are also allowed to practice presentation skills by summarizing technical texts in groups and presenting the topics in class. In addition, writing report workshops are run almost every week for students to discuss their work with instructors and receive continuous feedback.

The following component of the course is related to employment correspondence and interviewing skills. Students are introduced to basic guidelines for writing effective CVs and letters of application. They are also introduced to key principles for passing interviews successfully. Then, students participate in a simulation for an interview by dividing the class into groups of interviewees and interviewers. The first come to class with their well-prepared CVs and letters of application, and the others prepare their interview questions and assessment criteria. The simulation is based on authentic advertisements by the international AISEC student exchange organization, and sample AISEC questions for structured interview and assessment checklists. At the end of the session, interviewers announce the wining candidates and justify their choices by referring to the assessment checklist.

The final part of the course includes rehearsals for the final presentation. Then, students submit their final reports and orally present them. The final report must cover a technical/semi-technical topic, consist of 8 – 10 pages and follow all the guidelines concerning content and format taught during the course. As for the oral presentation, students should follow the basic guidelines for giving effective oral presentations concerning content, organization and delivery methods. Presenters should also prepare any necessary handouts to the audience and use appropriate visual aids, such as a PowerPoint slide show.

Table 1: TRW lecture schedule

Week	Session 1	Session 2	Session 3
1	Orientation	Essay analysis	Non-graded essay writing workshop
2	Essay analysis: Logical division	Non-graded writing workshop	Graded writing workshop
3	Essay analysis: Chronological	Non-graded writing workshop	Graded writing workshop
4	Essay analysis: Cause and effect	Non-graded writing workshop	Graded writing workshop
5	Essay analysis: Comparison and contrast	Non-graded writing workshop	Graded writing workshop
6	Report format and ethics of academic writing	Presentation skills (Video viewing I)	Presentation skills (Video viewing II)
7	Discussion of report topics/outlines/sources	Dictionary skills	Dictionary skills
8	7th-week exam	Paraphrasing (Analysis)	Paraphrasing (Production)
9	Summarizing (Analysis)	Summarizing (Production)	Presentations based on summarizing texts
10	Report writing workshop	Describing Illustrations (Analysis)	Describing illustrations (Production)
11	Report writing workshop	In-text citations and source documentation	Presentations based on summarizing texts
12	12th week exam	Introduction to CVs and letters of application	Introduction to interviewing skills
13	Report writing workshop	Practice on job application process	Presentations based on summarizing texts
14	Report writing workshop	Rehearsal for final presentations	Final presentations
15	Final presentations	Revision	Question & Answer session
16	Final Exam		

4.3. Development of course assessment criteria

Setting clear assessment criteria for writing courses is of extreme importance. For one thing, assessing writing can show significant tendency towards subjectivity if not governed by clearly defined criteria. The assessment criteria also stimulate students to achieve course objectives when they are set in a way that reflects the proper weight of the course objectives.

ASSTMT Colleges apply a continuous assessment scheme, where students are assessed for 30% of their total mark in the 7th-week, 20% of the mark in the 12th-week and 40% of their mark by the end of the course. The remaining 10% is dedicated for the instructor's assessment of the student's participation through class or home assignments. The assessment scheme for the TRW course is outline in Table 2.

Table 2: TRW grading scheme

Week	**Percentage of total *course mark***	**Assessment Tool**	
7th-week	30 %	- Progress Test 1	(20 %)
		- Average of graded workshops	(10 %)
12th-week	20 %	- Progress Test 2	(10 %)
		- Final presentation	(10 %)
Pre-final	10 %	- Average of report workshops	(5 %)
		- Classroom participation	(5 %)
16th-week	40 %	- Final written exam	(30 %)
		- Final report	(10 %)

A number of principles govern the assessment process of the TRW course. An important principle is related to the manner tests are designed. Test items reflect a balance between students' ability to analyze and produce academic discourse. For example, during the 7th-week exam, students are asked to analyze an academic essay through recognizing the thesis statement, identifying transition signals, marking the topic sentence and major/minor support of the body paragraphs, etc. They are also asked to complete an academic essay by writing missing body paragraphs or introduction and conclusion. In the final exam, however, students are asked to write a complete essay on a technical topic. Another example is the way students' summarizing skill is tested. At an early stage of the course, students are only required to identify the main ideas of texts. At a later stage they are asked to summarize given essays. The balance between analysis and production has proved useful in two main ways. For one thing, students are allowed to practise new skills before they are asked to use them in production. In addition, students with a rather low proficiency level are given time to build more confidence. They can also manage to pass the course if they exert real effort although high grades on the course can only be scored by the students who demonstrate a mastery of the writing skills and the English language.

The assessment of workshops also follows set criteria, which is announced to students. Each workshop is marked out of 10; 2 for the introduction, 2 for the conclusion, 2 for concrete support, 2 for unity and coherence and 2 for language competence. Students are usually involved in the assessment of their work and their peers' by participating with the instructor in the marking of written texts. This helps raise the awareness of students and increases their trust in the instructor's assessment. As for the graded report workshops, they are mainly designed to offer guidance to students in a structured manner. Students receive feedback on their progress during class time and are also allowed to seek feedback and guidance from classmates. Moreover, these workshops allow the instructor to minimize any chances for plagiarism. At the end of every report writing workshop, instructors must sign the students' written production, and students include these signed drafts with their final reports. A copy of their sources is also included for the instructor to examine the student's summarizing and paraphrasing skills. All students' class / home writing is also kept in a student's portfolio to allow students to recognize their areas of strength and weakness and set plans for future progress.

An assessment rubric is also set for the final report and presentation. Marks are given on the final reports regarding report format, introduction, summarizing/paraphrasing skills, paragraph development and concrete support, unity and coherence, and language competence. Students are informed from the beginning of the course that plagiarism leads to a failing grade. Likewise, the final presentation is assessed against set criteria. Marks are given based on the presentation structure, content/organization, delivery method, visual aids, handling questions and language competence. To maximize inter-rater reliability, two raters asses the performance of the speaker and an average mark is awarded.

5. Material development and implementation

The present course required the development of different kinds of materials, both academic and technical. Selection of ready-made materials with the academic component was much easier. For example, the essays used for the analysis of different essay patterns and summarizing were adapted from academic-writing course books. Similarly, the task sheets prepared for writing CVs and letters of application were adapted from a number of Business English and communication course books. However, all the other components of the course, especially the technical part, required in-house material development. The decision for writing in-house materials was tough since material writing is extremely time and effort consuming. Besides, the nature of the TRW course requires a certain caliber of material developers who have extensive experience with material development, academic writing and the specialized language/ special needs of the Nautical students. Despite these challenges, the decision was taken to develop the materials by the ILS staff due to the lack of relevant materials on the market.

5.1. Principles governing material development

The course designers set a number of principles for material writing. Here are some of these principles:

Principle 1: Use of academic and technical texts
The presentation of a new writing skill should be introduced with academic texts followed by technical texts. For example, the task sheets on summarizing and paraphrasing start with academic essays and paragraphs for students to analyze. Then, more technical texts are introduced for analysis and production.

Rationale
It has proved easier for students to understand a new skill with texts that do not include too specialized language and then transfer this skill to more technical texts.

Principle 2: Selection of authentic texts
Texts used for material writing should be authentic. In case selected texts in their present format are not suitable for teaching purposes, adaptation is allowed.

Rationale
Authentic texts enable students to deal with their specialist literature with greater confidence. Besides, authenticity increases students' interest level and stimulates their motivation.

Principle 3: Integration of skills

Task sheets should allow for an integration of as many skills as possible. A case in point is the task sheets developed for the non-graded essay writing workshops. These task sheets usually require students to listen to a lecture on a navigation topic, such as the sinking of the Titanic or rescuing a man overboard, and complete a relevant task that involves taking notes or completing a diagram/flow chart, etc. Then, students use the recorded information to write an essay following a given pattern.

Rationale

At this stage of the ME programme, students have already developed their language skills to an extent that allows a meaningful integration of skills similar to what happens in real life. Besides, in writing courses students should be encouraged to gather information from different sources and using various methods before putting their thoughts in writing.

Principle 4: Precedence of analysis to production

Task sheets that present a new writing skill to students engage students in analyzing model texts before asking them to make similar production. For example, the task sheets prepared for describing illustrations start with asking students to perform different tasks with ready-made descriptions of illustrations. Students may complete missing parts of the description, correct wrong information by referring to the given illustration, etc. This is followed by an analysis of the kind of lexical and structural patterns used in the description. Then, students are given technical illustrations to describe.

Rationale

Providing students with model texts facilitates their writing. At the content level, students learn how to better organize and present their ideas. At the language level, the models provide students with necessary input for production. For instance, the analysis of recurrent lexical patterns in model texts allows students to use pre-fabricated chunks in writing.

Principle 5: Implementation of cooperative learning

The task sheets developed for the course require different kinds of interaction among learners. Although some tasks are done individually, probably for the purpose of individual assessment, a number of tasks involve students in pair and group work. For example, students in the interviewing skills session analyze a case study in groups to come up with effective guidelines for interviewees.

Rationale

Writing courses represent a very good opportunity for enhancing team spirit among students. Besides, peers always help at various stages of writing in real life. They can, for instance, help with brainstorming, reviewing and editing.

Principle 6: Placing emphasis on critical reading

Students are often asked to analyze both academic and technical texts prior to writing. Some task sheets, for example, require students to draw an outline showing the writer's line of logical reasoning.

Rationale

A main purpose for academic writing courses is to help students deal with the academic requirements of college life. Being a critical reader, thus, comes on top of the list of priorities.

In addition, good writers must usually be good readers, especially with college writing which is largely based on analyzing other writers' work.

Principle 7: Enhancing students' communication skills
Communication skills are integrated within the course framework. For instance, practice on effective presentations skills is provided to students at various stages of the course. Students are always trained on relevant communication skills, such as keeping the audience in mind, using language appropriate for the listener, manipulating body language and eye contact to create effect, etc.

Rationale
Effective communication skills are a key element for success at the work place. This is especially true in the maritime industry where personnel come from a variety of countries and belong to different cultures. An integration of communication skills within ME courses is, thus, highly recommended (Luo & Tong, 2005).

Principle 8: Developing students' study skills
Writing courses involve practice on a number of study skills, such as taking notes, summarizing and using the dictionary. Key study skills are practised whenever relevant to course aims. For example, two sessions on dictionary skills train students to understand a great deal of information provided in dictionary entries. Students are also trained on other skills pertinent to academic writing, such as finding the right sense for a difficult word in the dictionary entry based on the context where the word is found or selecting the right word from a number of synonyms to include in writing.

Rationale
Study skills can greatly facilitate college life for students. They are also quite helpful for developing students' academic writing skills. This is why an integration of relevant study skills in a college writing course serves the course aims and benefits students at large.

5.2. Management of the material development/implementation process

The writing team members were selected from ILS teaching staff who have had experience in teaching writing college courses and are familiar with the content taught at the Nautical Department. All the team members had also participated either in teaching or writing materials for a similar TRW course for the AASTMT College of Engineering, a fact that helped make the writing team share the course designers' vision for the course, and apply the basic principles set for material writing.

The assignment of tasks to team members followed three basic criteria. The first is related to the member's specialist knowledge. Some members demonstrated greater knowledge with navigation content, others with more academic skills, etc. It was very useful to assign each member a part which suits her area of expertise. Another criterion was related to the type of tasks required. For example, some members were especially talented with information transfer activities, so they were assigned the task sheets which include prompts for students to write essays. Others were particularly talented in devising activities that encourage critical analysis of texts. These members were, thus, assigned the parts that require analyzing other writers' line of reasoning. Finally, members' preferences were also taken into consideration. Mostly, the first two criteria for assignment of task sheets also coincided with the members' preferences.

The coordination of the material writing was mainly done by the team leader, who was the assistant academic coordinator of the course. Team members emailed their selected texts to the team leader and received feedback regarding the text suitability for the course aim. Then, the task sheets including the teaching activities were designed and again emailed to the team leader, who, in consultation with the course designer, reviewed the work and asked for any necessary modifications. The team members flexibly modified their task sheets and sent them to the team leader for final compilation. The on-going communication between team members and the team leader helped facilitate the writing process. On the one hand, members were reassured that they are going on the right track. Feedback showed the extent of their success in meeting the course aims and application of the set principles. On the other hand, maintaining regular contact between the members helped form a unified and coherent shape for the materials.

The new TRW course for nautical students has been put in use for two academic semesters. Throughout this implementation phase, feedback on the course has been sought from college staff, students and ME instructors through course evaluation meetings, discussions and informal interviews. Currently, some of the task sheets are being modified in accordance with this feedback. Modifications mainly fall under three categories. First, the time allocated to some course aims is reduced or the location of some task sheets in the lecture schedule modified. For example, students will have report writing workshops earlier in the course in order to have more time to seek consultation with the ME instructor and to properly edit their final reports. Another example is related to the time allocated for practice on essay writing, which will be reduced due to the fact that the students graduating from the new ME programme will have already had good practice on academic writing in previous courses. Second, some task sheets need modification to provide learners with linguistic input of higher quality (Lewis, 1993). For example, the model texts in the sheet 'Describing Illustrations' will be changed in order to present learners with more useful chunks that are typically used in describing technical illustrations. Finally, the students and ME instructors' feedback on certain activities is taken into consideration. Some activities were too challenging for students. For instance, two of the listening task sheets required students to take too many detailed notes which would not be of much use in their subsequent writing task. By the time the students had taken all the required notes, they became too exhausted to write the essay. Another instance can be found with some task sheets used in the graded writing workshops. Sometimes too little room was allowed for students to use their creativity and critical thinking because the prompt led to extremely guided writing.

6. Conclusion

Academic/technical writing college courses are a very good chance to develop students' logical thinking, organizational abilities and communication skills. They help students deal with other subjects of their specialization with confidence, and also equip them with necessary skills for their careers. This is particularly true in ME programmes that aim to prepare students to deal with the global nature of sea life. The present paper presents an institutional experience in course design and material development for an academic/technical report writing course for nautical college students. The stages of needs analysis, course design and material development/implementation are briefly reviewed. The current project shows that clear specification of the needs of college management and students coupled with the availability of high-caliber course designers and material developers can make the creation of such highly specialized ME courses both possible and rewarding.

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List of abbreviations

AASTMT	Arab Academy for Science and Technology & Maritime Transport
EAP	English for Academic Purposes
ESP	English for Specific Purposes
GEP	General English Language Programme
ILS	Institute for Language Studies
ME	Maritime English
TRW	Technical Report Writing

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Biography

Dr. Dina El-Dakhs is a lecturer at the Institute for Language Studies at the Arab Academy for Science and Technology and Maritime Transport. She got her PhD in Psycholinguistics from Alexandria University, Egypt. She has extensive teaching and course coordination experience in TESOL, ESP and EAP. She has also coordinated a number of material development projects for course books in general English, Business English, English for Engineering, Maritime English and communication skills. She has also worked as a teacher trainer for novice and experienced TESOL and ESP instructors from various educational institutions. She presented and participated in a number of conferences on TESOL, ES/AP, Linguistics and Communication Skills.

Ms. Karima Zayed enjoys a career of more than 2 years as a Maritime English lecturer. She graduated from the English Language and Literature Department, Alexandria University, Egypt. As part of her professional career, she worked for 2 consecutive years as an English instructor for school students at the elementary and American Diploma stages. She attended several training workshops, including a Staff Development Workshop sponsored by the Middle East Association of National Schools (MEANS). Since 2005, she has been working as an assistant academic coordinator and an English Language instructor for University Students at the Institute for Language Studies (ILS) at the Arab Academy for Science and Technology and Maritime Transport. She has also been offered the opportunity to teach English language courses for adults at the ILS and at the Academy Community Service Programmes in cooperation with the American University in Cairo.

Abstract of Workshop by Siep Konijn at IMEC19 in Rotterdam October 2007

Vessel-VTS Roleplaying
About one third of the English classes for VTS officers at our institute consist of roleplays. For the greater part vessel-VTS (ship-shore) communication based on projected traffic images. It is this, that you will actively take part in, bringing as reward a type of exercise that promotes you to the role of an observer and has the group working, suitable for colleagues training for "vessels" as well as those for "VTS".

On the screen in the classroom the students see a (radar) traffic image with a few ships in a port or port approach. The projector may be a beamer or the overhead projector. Roles have been devided with one as VTS station and the other as vessel (vessels). One obvious question of the vessel being: "What is the traffic situation? – Over " and the VTS station replying. Often the "plays" consist of one question – one answer only making them relatively short but therefore lively and entertaining. Immediately after this performance the group is invited to comment which may produce valuable "learning moments".

VTS in the Netherlands
The first chain of radar stations in Rotterdam was established in 1956. This shorebased radar gradually developed from surveillance into proper VTS. The first regular VTS course was delivered in 1983. Nowadays some 450 VTS operators provide their services in our seaports and along our extensive inland waterway system, with new recruits doing basic training every year.

The course is based on IALA model course V 103/1 and adapted to national circumstances. Simulator training is the most important component and is embedded in such a way as to function optimally. Right from the beginning students do the 'general communication module' preparing them for simulator work in the quickest and most efficient way, learning the basic terms, proper procedures, key routine messages in both Dutch and English*. This module finishes at about ¼ of the course.

Position of English
Also right from the beginning they are taught English, an important part of the lessons being role play exercises preparing for the simulator. It is therefore that the English teacher closely liaises with the General Communication teacher every week in order to finetune the progress. The English classes consist of 1/3 SMCP, 1/3 vocabulary work and 1/3 roleplaying and they continue until the end of the course. For the vocabulary work a teaching syllabus has been developed. The simulator training gradually develops in complexity starting with Dutch speaking ships only and English speaking ships later on.

The workshop will focus on the roleplaying practice. Other items that will be briefly touched upon and may come up for discussion are: pre-entry level, number of English lessons, teaching syllabus, teaching material, assessment, role of the simulator in English teaching and practical advice on how to make the exercises, if needed.

*) We also train groups from foreign ports/countries in English only with a slightly adapted approach.

International Maritime English Conference (IMEC) 9- 12 Oct. 2007

Workshop Proposal

Title of activity: Creating Teaching Materials from the IMO Website

Presenters: Anne Pazaver (Lecturer, World Maritime University); Inger Battista (Lecturer and Coordinator of the English and Study Skills Programmes, World Maritime University)

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Workshop Proposal

Creating Teaching Materials from the IMO Website

The IMO website (www.imo.org) is a rich source of current maritime English including IMO Conventions, latest news and hot topics, audio recordings of speeches (with transcripts), and links to other maritime sources. It is also accessible to anyone with a computer. Therefore, this website is an ideal tool for developing teaching materials for students of maritime English. This workshop will focus on the development of classroom materials for all four language skills: reading, writing, listening and speaking. Participants will be shown how to find a variety of appropriate and authentic sources of maritime English on the IMO website, and use them to create materials based on their classroom objectives and on the needs of their students. The activities to be modeled in this workshop include: a roleplay/symposium based on current issues in the maritime field, various approaches to reading comprehension, listening activities to enhance understanding and improve speech and vocabulary, writing in response to a text or an issue. In this interactive workshop, participants will also have the opportunity to create their own materials based on their individual needs or teaching situation.

IMEC 2007
The Human element in Maritime Accidents and disasters – a matter of communication

Lisa Loloma Froholdt, Ph.D. Researcher at The University of Southern Denmark
Fabienne Knudsen, MA, PhD, The Research Unit of Maritime Medicine, Denmark

The world merchant fleet is a global workplace and has a long tradition for sailing with crews that represent many different nationalities. Two thirds of the world merchant marine vessels have crews that are multi-national and multi-lingual (Horck, 2005). Communication and language therefore, become vital components of multinational company's ability to conduct their business adequately and play a role in global activities. The absence of communication and language skills can make the daily passing of information difficult, herby allowing miscommunication, which can jeopardize maritime operations for all involved.
Human error has increasingly become a focus area for shipping companies, insurance companies and maritime authorities. Many investigations of accidents are attributed human error and it becomes especially necessary, that research continues to contribute with knowledge and methods that can be used in the analysis of incidents in the maritime sector. The reason for investigating human error and how it is constructed in maritime workplace's, is not to point the finger at one or several persons, but to understand "why peoples' assessments and following actions made sense at the time, given the circumstances that surrounded them" (Dekker, 2002:65).
The workshop,"Conceptions of culture in international communication – limits to cultural explanation" adresses a critical approach to static, objective and context-independent concepts of culture. Conceiving of another culture as objective, persistent and evenly shared features within a nation may bring some basic order while facing an unknown culture, but it may also have unintentional outcomes, e.g. it may lead to a deterministic view of other cultures, thereby reinforcing prejudices and underestimating other forms for identity; it may tend to hide the universality and the individuality which every man also acts up to, and which makes empathy possible across cultural differences. Above all, it risks blinding the participants for the specific context of a given communicative situation.
This workshop does not seek to pull the participants towards one single perspective, but invites to reflection about diverse perspectives of cultural sense-making in international communication.

'Human error in multi-national manning'

Lisa Loloma Froholdt, M.A. Ph.D. Student, University of Southern Denmark

Several researchers have conducted studies about life at sea and the general complexities that can arise with the management of multinational crewing and safety in maritime companies (Lamvik, 2002; Knudsen, 2000, 2003; 2005/2006; Sampson & Zhao, 2003; Kavechi, Lane & Sampson, 2002; Lane, 2001; Horck, 2005). As of late, Pyne & Koester (2005) have done a study of maritime accidents emphasizing on multi-national crews, using both the ADREP 2000, which is an accident investigation taxonomy used in the Aviation industry, Metze & Nystrup's (1984) psychological theory of professional communication training and three of Geert Hofstede's (1997) cultural dimensions; individuality, uncertainty avoidance and power distance. All in order to shed light on the requirements for effective communication in the maritime sector.
I will use Pyne & Koesters (2005) study to discuss two different approaches to cultural conceptions, namely the functionalistic and the interpretative approach.

The functionalistic approach

A functionalistic approach such as Hofstede's culture concept subscribes to an approach that seeks patterns and lawfulness. This approach is objective and rational and coins systems and structure in order to be able to predict behavior. Hofstede describes culture as "the collective programming of the mind" (Hofstede, 1991, p 4-6) and sees culture as a mental programming consisting of values and norms that change very little over time. Hofstede views cultural identity as shared patterns of behavior and ideas that are specific for the people of a specific culture or nation. Thus, culture and nation are static and deterministic constructs that are used to both explain and predict human behavior.

Pyne & Koester have looked into the accident investigation of the container ship Bunga Teratai, using the above mentioned methods, and concluded as briefly presented here:

The grounding of the Malaysian flagged container ship Bunga Teratai Satu on the Great Barrier Reef, was due to "factors related to cultural issues, e.g. crew mix, authority gradient, cultural issues and crew resource management". (Pyne & Koester, 2005, p 102)

In the above-mentioned accident, Pyne & Koester accentuate the fear that some of the Malaysian employees have of questioning a superior, which is a characteristic that Hofstede affiliates to cultures with high 'power-distance'. This fear subsequently invokes a failure to communicate, as was the case in the above-mentioned example, where a subordinate failed to convey information to a superior, herby allowing an accident to occur. Pyne & Koester conclude that an all Scandinavian crew would not have acted the same way, due to the fact that the Scandinavian culture is characterized by a low 'power-distance'. Despite their argumentation for the importance of the dynamics of crew interaction and communication, I find these conclusions and Hofstede's cultural dimensions to be used uncritically and unfortunately, they tend to be yet another reproduction of cultural stereotyping of the individuals involved in the accident.

Hofstede's cultural dimensions can be used to compare central tendencies in different countries, as his dimensions make it possible to describe social systems that produce the most dominant values that a majority of people have. But the dimensions can on the other hand, not be used to predict or explain ways in which individuals' act in a certain situation, nor do they convey anything about the complex interpersonal relationships between and amongst cultures in any situation. As Baskerville (2003) points out, there is an extensive usage of citations of Hofstede's Cultural 'Consequences' in journal articles in especially two areas. Out of a total of 1706 citations between 1981 and 1998, the area of management related disciplines scored 712 citings and the accumulative area of psychology had 540. Both of these areas are concerned with the individual responses to various situations and problems. In the concrete analysis, Pyne & Koester have used the data from the accident and have ascribed the behavior of an individual to a prespecified category –a cultural dimension. When this dimension is specified beforehand, context is left hanging, as is the detailed knowledge of the interaction between the crew involved. Are Hofstede's cultural dimensions in fact adequate as an explanation for the behavior of an individual in the above mentioned accident?

Hofstede has received a lot of criticism over the years (Bhimani, 1999; G Harrison and McKinnon, 1999; McSweeny Brendan, 2002; Baskerville, 2003). Critics have argued that this view of culture and nation is maintained through stereotyping and ethnocentrism and invokes the concept of being born into predefined categories. Also, when Hofstede claims that one nation is the equivalent of one culture, he does not take into consideration that there can be many cultures in one single nation (Wildavsky, 1989). We must be constantly aware or at least open to all possible kinds of groupings and not just the national groupings that Hofstede draws upon. Cultural and national diversity should not be confined or defined as polar, i.e. individualism contra collectivism, culture and nation are

both far more complex and dynamic, i.e. differences in class and education (Baskerville, 2003).

The interpretative approach

The interpretative approach seeks out to understand an individual's actions and builds on the Weber concept "verstehen". This approach focuses on understanding an individual's point of view, appreciating the cultural and social forces that have influenced this individual and uses this understanding to interpret the meaning of the individual's behavior.

I have analyzed a telephone call between two non-native speakers in an emergency situation using this approach. In their investigation, Pyne & Koester used the concept Human Communicative Error (HCE) as an identifiable component of human error in maritime operations. They define HCE as one where there is "...a failure of effective crew communication..." (Pyne & Koester, The Archives of Transport, 2005; Vol. XVII, No 3-4), be it ship to ship, ship to shore or intra-ship. I have used Pyne & Koester's concept HCE and linguistic analysis – and put the following questions to my data: How do the participants make fact and descriptions of events and actions accountable in talk? How is human error displayed in talk?

Case:

Situation: A vessel has lost steering. Company is informed according to ISM procedures.
Facts: Captain informs: Rudder is lost - anchor dropped. Wind appr. 12-14 metres pr. second against the coast. Vessel position 5-8 miles from land. Weather forecast: Increasing wind.
Decision: Tow the vessel to a safe area for further investigation/ eventual dry docking.
Sequence: Captain informs tugboat that he wants to start backing the ship. Tugboat passes this information on to the shipping company. Company calls captain, both are non-native speakers.

The communication in the sequence was analyzed and the following human communicative errors were detected.

- Trouble in greeting sequence
- Reopening of a previous decision
- No reference to crew decision or crew collaboration-usage of singular pronoun only
- Usage of non-standard terms
- Overlap in talk
- Early pressing to close

My question to these findings was: What happens in the detail that results in human communication error and does it have anything to do with multi-nationals? I found that the errors in the communication between captain and company could not significantly be ascribed to being due to the participants being non-native speakers. Nor could they conclusively be due to nationality differences. The errors involved pointed more towards being due to a practical interactional problem in the communication that could just have easily have taken place between two operators having the same nationality.

The interpretative approach explained a situation that pointed at the context in question and the participant's interaction as having an impact on the outcome of the situation. The analysis did not point at nation or culture as having a significant role to play in the construction of human error. Edwin Hutchins (1995) discusses the concept, 'unified situated cognitive system' in his study of navigational activities onboard a ship in the US navy. Put to work in the case used here, the concept means that the two operators organized actions according to the conditions imposed by context and in fact, by doing so, they formed together a unified cognitive system to perform the task at hand; i.e. where captain didn't include nautical mathematical explanations for his actions, company

collaborated with captain in obtaining consensus of what was to be understood and completed the mathematics for him. I interviewed both a Danish and a Foreign technical superintendent in a Danish shipping company about this. The answers were the same. Operators collaborate in obtaining consensus and bear over with each other and adapt to the type of situation and the state of mind, culture or nationality of the individuals involved. Crew members are obviously inclined to be more emotional in an emergency situation and colleagues understand this and make room for it in talk.

This specific case pointed at both human error and best practice to be present in communication amongst multi-nationals and certainly, there are thousands of ships that effectively sail around the world every day. These ships have crews that communicate effectively and we need to describe how they do this. We need to tell the good stories – accentuate best practice.

These findings also indicate that we not only need more practical and theoretical language and safety training in the maritime industry, we also need more practical training in employee interaction and communication, in order to address the problems that can become human communicative errors and jeopardize safety and maritime operations. Finally we also need more research that concentrates on cataloguing different types of human error in communication, best practice, elaborations of culture concepts, which all in turn, can be incorporated into maritime training and education.

Hofstede's cultural dimensions: a critical approach

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Hofstede's cultural dimensions

Hofstede is undoubtedly the most famous and most cited researcher in the domain of cross-cultural study of organisation. He has derived four, later on five, main 'cultural dimensions'[1] from examining work related values in employees of IBM (power distance, individualism /collectivism, masculinity/femininity, uncertainty avoidance, long-term/short-term orientation)

The immense success of the framework of Hofstede may be due to the fact that it reduces the complexities of culture into quantifiable and comparable cultural dimensions, and that it can be easily applied to various intercultural encounters. But of course, Hofstede also has his critics. A review of articles critical to his framework can be summarised as shown in the table below.

Some of the critique is radical, rejecting the framework of Hofstede; some are merely correcting or refining his framework. Yet another group warns against the extensive, nearly exclusive use of his framework. As noted by Søndergaard already in 1994, Hofstede's concepts are sometimes used "as a set of assumptions taken for granted". We do agree that the dominance of Hofstede is problematic.

[1] There are other well-known dimensions: High/low context (Hall); Universalism/particularism (Trompenaars & Hampden-Turner)

We claim that an unquestioned use of his framework may lead to fallacies, and that there is a need to develop alternative views. 'Culture' and 'intercultural communication' are such complex concepts that they deserve a variation of perspectives and approaches.

Brief summary of Hofstede's critique

In-built western bias (e.g. the dimensions are chosen from a western point of view)	Baskerville 2003 Magala 2004, Osland & Bird 2000
Static, essentialistic concept of (national/organisational) culture (e.g. the unit of the analysis being a territorially unique nation-state)	Baskerville 2003 & 2005, McSweeney 2002, Magala 2004, Myers & Tan 2002, Tayeb 1994, Wildavsky 1989
National culture determinism preventing seeing other forms of identity (e.g. studies demonstrate respondents identifying more with age or gender)	Baskerville 2003, Gooderham & Nordhaug 2001, Harrisson & McKinnon 1999, McSweeney 2002, Myers & Tan 2002
A variety of methodological problems (e.g. Questionnaires measure self-representation, not practice; bipolarisation of cultural dimensions; 'unzipping' of dimension shows other results).	Harvey1997, Osland &bird 2000, McSweeney 2002
The target of the critic is not as much Hofstede as the simplified and uncritical use by others of his concepts.	Søndergaard 1994, Williamson 2002, Bhimani 1999, Osland &bird 2000

In the following, the focus will be on one assumption, namely the bipolarisation of cultural dimensions and its implications. I will primarily lean on an article by Osland and Bird (2000), whose concepts of "cultural paradoxes" and "value trumping" are constructive alternatives or supplements to the framework of cultural dimensions.

Bipolarisation and stereotypes

> "I attended a course recently, where a psychologist told us that they [the Filipinos] are enormously obedient to authorities. They are the second-most obedient in the whole world where the Danes are the second least obedient to authorities. Therefore, they find it very difficult to handle with the responsibility we give them."(Danish engineer) (Knudsen 2004)

This quotation stems from a Danish engineer. He volunteered to be interviewed about the cooperation between Danish and Filipino seafarers, and even before the interviewer asked any question, he had put forward this statement. Obviously, he had heard about the cultural dimension of power distance, '*the extent to which the less powerful members of institutions and organizations within a country expect and accept that power is distributed unequally*' (Hofstede 1997:28), which is low in Denmark and high in the Philippines (ibid: 26); and he presented it as a proof that cooperation is impeded by cultural differences applying evenly for *all* Filipinos.

If cultural dimensions are used in a bipolar way, they may tend to make us see the world as either/or - black/white. They prompts us to see qualities as inherent - within the people's head, not in the relations between people, as unchangeable and as evenly distributed between people sharing the same culture. Thus, a simplified, generalising and superficial use of cultural dimensions can confirm or even reinforce a stereotyped view of other cultures, as seems to be the case with the quoted engineer. As remarked by Osland & Bird, both simplified cultural dimensions and stereotypes can be helpful as first steps – or 'best guesses'- (Osland Bird 2000: 66) when meeting people from an unknown culture. Osland & Bird compare understanding of another culture to putting together a jigsaw: Bipolar cultural dimensions and stereotypes may be a useful guide at the first trials; but if they remain unquestioned and unchallenged, *"it may lead individuals to think that the number of shapes that pieces may take is limited and that pieces fit together rather easily."* (ibid:67). At worst, it may even prevent an individual to gain new insight from growing experience.

Another possible pitfall of bipolar dimensions relates to the ethnocentric (western) bias of the framework of Hofstede, as pointed by several critics (Baskerville 2003 Magala 2004).
Derrida, among other writers, has pointed out that the tendency to perceive in bipolarisation is a fundamental way of thinking in the western tradition. He also claims that, in bipolarities, structures of opposition are maintained by oppressing the elements that do not fit in the structure. Moreover, the two terms are not based on a logical relation; they constitute a hierarchical relation where the downgraded term is expounded on the premises of the upgraded one. The downgraded term becomes a mere supplement to the marked term (which is considered the original or authentic one). Beside, the illusion of a definitive opposition is only sustained at the price of overlooking all the internal oppositions (Dahlerup 1991:33-45). Thus, bipolarisation may lead to ethnocentrism at two levels: 1) by universalising a specific western way of thinking; 2) by defining the terms of the opposition and which one is positively charged (cf. in the quotation of the seaman above, how obedience leads to lack of responsibility)

Cultural paradoxes and Value trumping
For sure, people do not always behave in a way that fits what we have learnt about their culture – but if we keep thinking in bipolarity, we may tend to ignore the pieces that do not fit the picture, or to explain them as exceptions that prove the rules. Osland & Bird, on the opposite, invite us to take cultural paradoxes as a means of overcoming or differentiating our stereotypes. They have identified six possible explanations for cultural paradoxes

- The tendency for observers to confuse individual with group values
- Unresolved cultural issues (e.g. ambivalence, contradictions)
- Bipolar patterns (both ends of the dimension are to be found in a culture)
- Role differences (and other forms of identity, e.g. age, gender, profession)
- Real versus espoused values (what people do and what they say they do often differ)
- Value trumping (recognition that in specific contexts certain sets of values take precedence over others).

All six cases of explanation are worth being elaborated, but 'value trumping' deserves to be stressed, as any cultural paradox can hardly be understood without taking the context into consideration. Whereas routine references to cultural dimensions may lead us away from the specific context in the given situation, paradoxes can be used as a welcome reminder of the complex, the dynamic, the relational and the contextual content of 'culture'.

This workshop argues for not ascribing culture and nation as being the fundamental determinants of international differences in a maritime company or an accident in the maritime industry, but to be open to many different kinds of answers for the many different kinds of situations that arise in the industry.

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Workshop schedule

1. Introduction; presentation by Lisa and Fabienne

2. Group discussion

1) Each participant thinks of an experienced situation of intercultural communication where the other part did not behave according to what you believed/had learnt about his/her culture.

2) Gather in groups of (about 6-7 depending of number of participants) as nationally mixed as possible

3) Choose 1-3 of the experienced incidences which you agree is most interesting/thought-provoking

4) The group discusses how the situation was handled, how it could be handled, and what it reveals about 'culture'. Are there some points in Osland and Bird's list over possible explanations to cultural paradoxes (see below) that are relevant to the situation you discuss? Or can the situation give opportunity to add points to this list?

One (or several depending on group size) of the group's participants is chosen as an observer during the discussion: Does the different nationalities of the participants influence the discussion? Are there other factors than nationality influencing the discussion (e.g. issues where there is agreement or divergence of opinion)?

Osland and Bird's list of explanations to cultural paradoxes
- The tendency for observers to confuse individual with group values
- Unresolved cultural issues (e.g. ambivalence, contradictions)
- Bipolar patterns (both ends of the dimension are to be found in a culture)
- Role differences (and other forms of identity, e.g. age, gender, profession)
- Real versus espoused values (what people do and what they say they do often differ)
- Value trumping (recognition that in specific contexts certain sets of values take precedence over others).

3) Plenum discussion and closing remarks

Nice to meet you, boys. I'd like to present you a new course of English studies. This course bases on real situations that every seaman faces in his work.

What kind of situations? First of all, seamen visit different countries and they should be able to communicate with people who live there. Secondly, every seaman (a navigator or an engineer) has often to use English when working with documents, manuals, navigational publications, port organizations, etc. Finally, crews are mostly international nowadays and a seaman can have a need in everyday communication in English.

Why English? **Because it's an internationally accepted maritime language.**

If you know English, you will understand and be understood by most people, especially in maritime sphere.

What's the first thing you should be able to do starting your career of a seaman? – To introduce yourselves! That means – to tell about your name, age, family, professional skills.

Teacher: "Now, meet Mr. Serov. He is a manager from the crewing agency "International Maritime Agency".

Crewing manager:
Good morning! Our crewing agency cooperates with your Maritime Academy. We give you an opportunity to have shipboard training on our ships and to get a job in our agency in future. Before you start introducing yourselves, I'd like to say some words about myself.

Crewing manager: "My first name is Nick. My surname is Serov. I am Ukrainian. I am from Odessa. I am 38 years old. My family is not big. I have a wife and two children: a son and a daughter. My son is 12 and my daughter is 8. They are pupils. I have a mother and a father. My parents are retired. I am a former seaman. Now I am a crewing manager. The address of our agency is Pushkinskaya street, building 12. Our telephone number is 24 43 54.

Now, tell me about yourselves."

PP1.

Crewing manager: "I'd like to show you resumes of some seamen. Mmm... What's happened?! They are all mixed together! I can't understand which photo goes with which resume! It needs to be put in order. Will you help me?"

PP2

Crewing manager: "Here is the photo of Pedro Cornelli. In order to find his resume we need to know the country he is from, his age,marital status and other personal information. While I'm looking through all the resumes, ask me the questions about Pedro. The resume with appropriate data will be his.

Teacher: "Where is he from?"
Manager: "He is from France."
Teacher: "How old is he?"
Manager: "He is 52 years old."
Teacher: "No, Pedro is young. This isn't his resume. Try some more."

Max: "Where is he from?"
Manager: "He is from Spain."
Alex: "How old is he?'
Manager: "He is 35."
Teacher: "Is he married?"
Manager: "Yes, he is."
Teacher: "Does he have any children?"
Manager: "Yes, he does. He has a daughter and a son."
Teacher: "What nationality is he?"
Manager: "He is Spanish."
Teacher: "What's his job?"
Manager: "He is Chief Officer."

C1

"Now try to create a real situation at a crewing agency. One of you is a crewing manager. Another cadet is a seaman applying for a job of the Second Officer (Chief Officer, Third Engineer, Second Engineer, Chief Engineer, Captain, etc.).
Make up an interview with the applicant. Discuss the items of the application form in your interview."

C2

Ok, and now we are on board a general cargo ship "Nadezhda". We are due to sail in a couple of hours, so while we have some free time, let's get aquatinted with a ship. We will have to spend a lot of time on its board so you better know where everything is in order not to get lost in future. First of all, let me introduce myself. My name is Boris Molchanov, and I am a 5-year cadet of Odessa National Maritime Academy. I am here on practice, and this is my second voyage on this very ship. I know her very well and I will show you everything here.

PP3

There are three departments: deck department, engine room department and catering department. We now are on the upper deck. This deck covers the holds where the cargo is stowed. Within the holds there are tweendecks on which the cargo rests. The cargo is loaded and discharged to the holds through the cargo hatches which you can see from here. And those little booms that are fitted to the masts are called derricks, they are necessary during cargo operations for loading or discharging the cargo, especially when there is no possibility to use harbour's cranes.

As you can see, the cargo is being discharged right now, and the person who is standing near the hatch and showing signs to the crane driver is called a gang foreman. He is responsible for the

work of stevedores that help during cargo operations. And now look at those two men that are working with that big warping drum. This warping drum is called the winch, and those two men are called winchmen. They operate the derrick with the help of the winch.
Now look up there. This is a bridge, a place from where the ship is controlled by the captain and navigating officers at sea. Can you see a person running over there and waving his hands? This is the Chief Officer. He is a very important person and he is the senior deck officer. He is responsible for the work done by all members of deck department, including you, guys. But I don't think this is the best time for meeting him now. One of his main responsibilities is cargo operations, and as I can see, there is something wrong with it now. So he is pretty busy. And this man, who has just passed by, is the bosun. He works directly under the chief officer and he is in charge of the deck department ratings. So, you better be polite with him as well.

We are at the front part of the ship now. We, seafarers, call it bow. There is anchor gear which is situated in the bow.

PP 4

And never say "right side" or "left side"! The right side of a ship facing the bow is called the starboard side, and the left side is called the port side. Near the bridge is the funnel, through which smoke and gases pass from the engine. The engine is in the engine room, near the bottom. The main boss there is the Chief Engineer, he is responsible for all machinery on board. He also has many assistants, like the Second Engineer, the Third Engineer, etc. Now turn right. Here you can see the boat deck. These are life boats that are used in distress. But you will have time to learn more about life-saving equipment from the Third Officer, who is in charge of it.
I forgot to mention about catering department. It's not big - a Chief Cook and the Second Cook, but they are very important people! You will have a chance to see them in the galley today at lunch. They cook just like my Mom. But now it's time to see the Captain, or the Master, as we often call him

Now I'll give you files where all the responsibilities of the crew members are enumerated. But because of your carelessness all the files were mixed up. Try to guess which files belong to the following crew members: Master, Chief Officer, Second Officer, Third Officer, Navigating Cadet, Bosun, AB, Cook, Messman, Chief Engineer, Electric Engineer, Engineer Cadet, Fitter, Motorman.

C 3
Now you know a lot of marine terms and phrases. Try to impress the Navigating cadet and match the definition in one column with the correct term in another column.
C4

A knowledgeable crew member 3d officer Jack Gordon is assigned to the cadets for training.

Jack Gordon: Hello, guys. Here I am to conduct your training. You'll act as junior-rated personnel of the bridge team.

To stand the watch, you must obtain the navigational information. It is:

1. Position of the ship.
2. Method of plotting the ship's position.
3. Course and speed.
4. Depth of water.

5. Weather conditions.

This is the minimum amount of information for you "to grasp with a ready hand and undaunted heart".
We are on the bridge, you know. Here you will learn to check the ship's position and plot it on a chart.

PP5

You can see the OOW checking gyro and magnetic compass errors. He does it once a watch. It is important to steer the course in the right direction. Frequent compass checks of the bearings of all closing ships prevents collisions at sea.

Andrew Kronin : When is there a risk of collision?

Jack Gordon : A steady bearing with decreasing range means that collision is imminent. Even a slowly changing bearing is warning of a dangerous situation.

Dan Korneev : How can a collision be avoided in this situation ?

Jack Gordon : Action must be taken.

Dan Korneev: What does it mean?

Jack Gordon : To notify the captain if time permits, to change course, to stop or back the ship. "The winds and waves are always on the side of the ablest navigator". In low visibility bearings are checked by radar.

Mark Romanov : What is "Radar"?

Jack Gordon : The term "Radar" was derived from radio detection and ranging. This is applied to electronic equipment.

PP6

Radar has become internationally accepted as the primary means of fixing a ship's position. It permits ships to navigate safely at greater distances from land and under worse weather conditions than visual methods.

Andrew Kronin: Is it easy to navigate by radar?

Jack Gordon : It is so easy that there is a danger of a false sense of security. The clear radar picture can change as a ship's position changes. A ship can easily lose her bearings and get into trouble.

Mark Romanov : What aids can be used when a ship's actual position is in doubt ?

Jack Gordon : A dead – reckoning (DR) plot is the best estimate of that position. Look at the figure. It shows plotting DR position.

PP7

Andrew Kronin : What other electronic equipment is used in navigation ?

Jack Gordon : The most commonly used satellite navigation system is Global Positioning System (GPS).
It provides a continuous world-wide position fixing system. The Electronic Chart Display Information System (ECDIS) takes a direct feed from GPS to show the ship's position, course and speed on an electronic chart.
PP8

GPS is easy to use, extremely reliable and readily accessible. You can navigate your ship safely and easily with GPS and electronic charts. However, they cannot replace the basics – use of dead-reckoning, calculation of gyro error, use of celestial navigation.

Dan Korneev : What instruments are used in celestial navigation ?

Jack Gordon : Celestial navigation involves observations of the sun, the moon and stars with a sextant.
PP9

This is a small instrument which measures the angle between the celestial body and the horizon. The exact time that the sight is made is recorded on the ship's chronometer. It's an extremely accurate clock. With this information and the tables given in a nautical almanac, the navigator can calculate the ship's position. The position is marked on the chart by a dot with a circle around it. By joining up the dots with a pencil line, the ship's track can be seen. The sextant, the compass and the chronometer have made ocean navigation possible.

Well, guys, different methods and instruments are used in navigation. To stand a safe watch you must navigate, using all the tools at your disposal.

What are they? Fill in the following check list with: chronometer, dead-reckoning, radar, sextant, GPS, electronic charts, nautical almanac.

PP10

Life-boat alarm signal.

"Attention! Attention! Lifeboat drill! All crewmembers except watchmen must proceed to their muster stations!"

Chief Officer: "Put on your life jackets, guys. See you at the port side master station."
Chief Officer: "Cadets, what do you think is the purpose of the drills carried on board?"
Cadet Serg Moiseenko: "Their purpose is to prepare the crew for an emergency."

Chief Officer: "Right you are. During lifeboat drills every crewmember has to carry out certain actions. These actions are described in the muster list and special notice boards available in all crewmembers' cabins. Since you are still cadets, you don't have such notice boards. That's why general information you'll get from me.
The lifeboat drill includes three stages. Can anybody of you name these stages?"
Max Cronin: "I think they are: lowering the life-boat, its operating and taking back aboard."

Chief Officer: "Right. Cadet Alekseev, can you describe the lifeboat you are looking at?"
PP 11

Nick Alekseev: "It is totally enclosed and made of some plastic."

Chief Officer: "To be exact, it is made of glass-fiber-reinforced plastic, or GRP in short. Cadet Kervel, what other types of life-boats do you know?"

Alex Kervel: "According to the material lifeboats are made of, they can be wooden and metal (steel or aluminium); according to their construction there are open and enclosed lifeboats."

Chief Officer: "Rescue boats can also be made of rubber. Enclosed life-boats are subdivided into partially and totally enclosed. Nowadays almost all lifeboats are built of GRP. Why?"

Mark Romanov: "I think, because this material has a high corrosion resistance and as a result low maintenance requirements."

Chief Officer: "Sometimes lifeboats are called rescue boats. Cadet Rybnikov, can you explain the difference between lifeboats and rescue boats?"

Antony Rybnikov: "To my mind, if the lifeboat is designated not only to rescue people from a sinking ship, but also those who are overboard, it is called a rescue boat."

Chief Officer: "Yes, that's right. Besides this, rescue boats are also to gather, keep in position and tow liferafts. The length of rescue boats must be not less than 3.8 m and not more than 8.5 m. Their speed is at least 6 knots, they have either inboard or outboard motor.

Now, cadets, look at the pictures illustrating different lifeboats and match them with the following definitions. It will help you to understand the distinction between lifeboats of different types."
PP12

Before we consider the operation of launching (or lowering) the lifeboat, you must learn the main parts of a lifeboat. Look at these two schemes. Can you define the types of the lifeboats?"

Схема на доске + C5

Look attentively to the pictures illustrating the lowering of a lifeboat. Can you describe the procedure?

PP13

Look attentively to the pictures illustrating the way how you should get into the lifeboat by the storm ladder. Tell what you mustn't do."

PP14

Now, tell me, please what another safety appliances do you know?

Look at the following illustration of safety appliances. Unfortunately, the recent storm has damaged it. However, try to guess which term goes with which picture.
C6

The chief officer gives instructions to Cadets on preparation for the ship's arrival at the port:

Well, Gentlemen.

Get acquainted with requirements on preparation for arrival at a port. Preparation for arrival at a port requires attention and preliminary arrangements.

In preparing the passage for arrival in a port a pre-pilotage information exchange shall take place. Asking and answering the questions fill in these forms.

PP15

The passage plan shall be updated following receipt of the shore to Ship Pilot / Master Exchange from and all latest navigational warnings.

According to Bridge Check List B3 "Preparation for arrival in a port" the ETA shall be sent with all relevant information required by local regulations (e.g. details of dangerous / hazardous goods carried, ship's particulars, etc.). If it is necessary cargo / ballast shall be rearranged. The following equipment is to be prepared and checked :

PP16

The steering gear shall be tested and manual steering engaged in sufficient time for the helmsman to become accustomed before maneuvering commences. The engines have to be tested and prepared for maneuvering. The Pilot embarkation arrangements are to be in hand.

PP17

VHF channels for the various services (e.g. VTS, pilot, tugs, berthing instructions) have to be noted and a radio check carried out.

The port shall be made fully aware of any special berthing requirements that the ship may have. Sometimes other checks may be necessary.

The Pilot Card shall is also to be updated and completed. The card contains information on draught and ship's speed that is liable to change as the loading condition of the ship changes, as well as a checklist of equipment available and working

PP18

The bridge team is now on the bridge, as the ship is approaching the temporary anchorage for Authorities Clearance, located appoximately 1.5 miles N.E. of Laje Dos Moleques Light. Depth of water is 25 m. to 35 m. (82 ft to 115 ft) and the seabed is clay and sanded mud which enables ships/tankers to lie safely at their anchors. The Master gives the order to change over the Main Engine from sea to maneuvering condition. The echosounder is switched on. Safe speed is 12 knots. "Stand – by"is assigned. The OOW is looking through the prepared anchoring plan. He asks two cadets to take the Anchoring Plan and Anchor Watch Check List in order to control if everything is taken into account in the anchoring plan.

Now, cadets, give me the Check List and take the Anchoring Plan. Let's check if everything is considered.

PP19

Is speed reduction assigned there?

Cadet Max Cronin. – Yes, sir. The speed should be reduced at the distance of 5 cables from the anchorage.

OOW – OK. I tick first point in the Check List. And what about the direction / strength of wind and current?

Cadet Alex Kervel. – You fixed the direction of wind North – East ward, force 4. And you wrote here that the tide runs Notherly into the channel or Southerly with characteristics of permanent flowing as if it was a river following the orientation as given by the channel. The current attains considerable speed which might impede the maneuvering of the ship in the channel.

OOW – I see, so the next two points of the Check List are ticked.

Cadet Alex Kervel. – Did you take into account the need for adequate sea room particularly from seaward ?

OOW – Sure. There is sufficient sea room at this anchorage. Have a look at the anchoring plan.

Cadet Max Cronin. – Yes, here it is.

OOW – Now, cadets, I'm going to give some orders as to the "stand –by"for anchoring and getting everything ready. And you, please, check one more point in the Check List and Anchoring Plan.

Cadet Alex Kervel. – Which one?
Cadet Max Chronin. – Have a look at the Check List. Which points as to the Anchoring Plan haven't been checked ?

Now you continue their conversation. Work in pairs

In the meanwhile the OOW informs the engine room and the anchor party of the time of "stand-by" for anchoring and checks if the anchors, lights/shapes and sound signaling apparatus are ready for use. He also reports the anchor position of the ship to the port authorities by VHF.
Two other cadets are listening to his VHF report and try to reproduce it. They understand the necessity of the ability to communicate by VHF. So, they start:

Cadet Daniel Korneev. – I'll be the ship, and you – the Port Control.
Cadet Boris Molchanov. – OK. Begin, then. Don't forget about Message Markers.

Cadet Daniel Korneev. – Don't worry. ……..

You continue the conversation. There is information about the temporary anchorage above

The Bosun and the anchor party are preparing the anchors for letting go. As far as the Master gave the order to reduce the speed and it is reduced now, the anchor party lowers the starboard and port anchors clear of the hawse pipes by putting the windlass in gear, releasing the brake and walking out the cable. The brake is then screwed up and the windlass taken out of gear ready for letting go. The anchor party also prepares the anchor bell or light so that the anchor signal can be displayed as soon as the anchor is dropped.

As far as there is a rather strong tide running, the vessel stems the tide at reduced speed so as to make slow headway over the ground. So, the required position is reached and the engines are stopped and put astern. Then, as the vessel begins to make sternway the anchors are let go.

One of the cadets is watching the process of anchoring near the bridge. There is a bit noisy and he can't hear everything. Try to help him to understand what is going on, as you hear better than this cadet.

C7 C8 C9

As soon as the ship is anchored it is necessary to establish the anchor watch. While at anchor the OOW should check his actions by Checklist B 6 - Anchoring and anchor watch. You are the OOW. There is a navigating cadet keeping watch together with you. Instruct him as to his actions during the watch according to the checklist.

PP20

One of the most important points concerning ship's safety is to prevent dragging the anchors. The OOW should check that the ship is not dragging her anchor by taking cross bearings of fixed objects ashore or by observing transit marks near the beam. If it is suspected that the vessel is dragging the cable should be inspected to see whether it tightens and slackens alternately and whether vibration can be felt. In poor visibility the hand lead could be used to detect dragging by lowering it to the bottom and seeing whether the line leads ahead. Radar can also be used to check the vessel's position. In rough weather the engines should be kept on "standby" and used if necessary to ease the
strain of the cable.

You see that the ship is dragging her anchors and visibility deteriorates. Describe your actions under these circumstances. Reproduce the conversation with the OOW and OS .

We are going to leave the anchorage. So, the Chief Officer is instructing the navigating cadets on the process of weighing the anchor.

Ch.Off - While weighing up the anchor, the cable should be hove down and stowed as it comes in and the bell rung to denote the number of each shackle as it appears. The officer in charge should occasionally indicate to the bridge how the cable is leading. When cable is "up and down" indicating that the anchor is aweigh the bell is rung rapidly and the anchor signal removed. The brake is applied when the anchor is finally hove up into the hawse pipe, the windlass is then taken out of gear and the bow stopper secured. When the anchor is hove to the surface it may be found to be foul of its own cable or to have picked up some wire chain or other object from the sea bed. It may be possible to clear it by letting it go again or a wire should be passed round the obstruction and brought back on board again with suitable lead, then the cable walked back. A fiber rope must be used for clearing a submarine cable.
Cadet John Zybko - May I ask you a question, Sir?
Ch.Off -Sure.
Cadet John Zybko - Why is it necessary to clear a submarine cable with a fibre rope ?
Ch.Off. - Who of you can answer this question?
Cadet Kit Mikhailov -I can.
Cadet Eugene Sergeenko doesn't hear the explanation. Can you explain him, the reason for the usage of a fiber rope?

Your ship is approaching the Port. There is a lot of work to be done prior to arrival. Officers are preparing port documents, are giving orders to take necessary safety precautions.

Cadet Kit Mikhailov – Third Officer. (Preparing Ship's documents)

3.0 – Cadet Kit Mikhailov., take the Guide to Port Entry and check what documents are required for S.S port. Then, get them ready.
Kit Mikhailov. – Yes, Sir. I've already done this. Here you are.

3.0 – Let my see. So, 5 copies of Crew List, 2 copies of Store List, 2 copies of Personal Effects List, (3 copies of Passenger List), 3 copies of Cargo Manifest, 3 copies of Bills of Lading for each consignment of cargo, 2 copies of Maritime Declaration of Health and Outward Clearance from the last port of call.
But you have forgotten about List of vessel's particulars which is required for this port.

Kit Mikhailov - And what exactly do they want to inform them about ?

3.0 - Have a look in the Guide: call sign, NRT, Y/GRT, DWT, speed, engine b.h.p, draft, total crew, officers, time of arrival, loading ports and dates of sailing, quaintly of cargo for S, quantity of cargo in transit for other ports, etc.
Kit Mikhailov - Well, I think it will take me about 30 minutes to prepare this List. And what about a Notice of Readiness?
3.0 - We have a blank form of this document. I'll fill it in and the Master will sign it on arrival. As soon as you finish with the List, show it to me.

Kit Mikhailov - Yes, Sir.

C10

Your ship is going to enter the Traffic Separation Scheme lane. Traffic clearance is required before entering the lane from a Traffic Organization Service. You contact the TOS to get the clearance and to receive traffic, navigational and meteo information / warnings.

M/V A: N. Traffic Organization Service. (3 times) This is m/v A (3 times) ABPO (3 times) On VHF channel 16. Over.
NTOS: M/V A. This is N. Traffic Organization Service. Change to Channel 14. Over.
M/V A: N. Traffic Service. This is m/v A. Changing to channel 14. Over.
NTOS: M/v A. This is NTOS. How do you read ? Over.
M/V A: NTOS. This is m/v A. I Read you four. Question. Is it permitted to enter Traffic Lane? Over.
NTOS: M/v A. This is NTOS. Answer. Yes. You are permitted to enter Traffic Lane – traffic clearance granted. Information. You are permitted to Traffic Lane in position ……. at 14.00 UTC. Over.
M/V A: NTOS. This is m/v A. Received: I may enter Traffic Lane. Information Received. Positive. I will enter Traffic Lane in position …….. at 14.00 UTC. Over.
NTOS: M/v A. This is NTOS. Readback is correct. Navigational information. Warning. A vessel is aground, position: near SN-2 buoy. Visibility is reduced by fog. Advice I : Proceed with caution. Advice II: Keep clear of a vessel aground .Over.
M/V A: NTOS. Information – Received : a vessel aground, position: near SN-2 buoy. Visibility is reduced by fog. Advice I. Positive. I will proceed with caution. Advice II: Positive. I will keep clear of a vessel aground. Over.
NTOS: M/v A. This is NTOS. Readback is correct. Instruction: Report at next way point …. at 14.30 UTC. Over.
M/V A: NTOS. This is m/v A. Instruction received. I will report at next way point …… at 14.30 UTC. Over.
NTOS: M/v A. This is NTOS. Readback is correct. Stand by on channel one four. Out.

In shore-to-ship and ship-to-shore communication or radio communication in general the following Message Markers may be used, which in a responding message are repeated as follows:

PP21

Pilotage is compulsory in the approaches to S.S. port. And in the port according to port Regulations the request for Pilots for entering should be made through the Agent 24 hours in advance via Santos radio station PPS when the vessel's ETA is given. The ETA should be confirmed 3 hours in advance through Channels one three or one six (VHF) to the Pilot's Association of the Port of S.S.

M/V A. – Santos radio station PPS. (3 times). This is m/v A. (3 times). ABPO (3 times). On VHF channel one six. Over.
SRS - m/v A. This is SRS. Change to VHF channel one two. Over.
M/V A. – SRS. This is m/v A. Changing to VHF channel one two. Over.
SRS - m/v A. This is SRS. How do you read ? Over.
M/V A. – SRS. This is m/v A. Read five. Information: My ETA at North Bar Pilot Station is time : 16.30 local time. Over.
SRS - m/v A. This is SRS. Information received : Your ETA at North Bar Pilot Station is time : 16.30 local time. Request : Confirm your ETA to Pilot's Association of S.S. Port 3 hours in advance through channels one three or one six. Over.
M/V A. – SRS. This is m/v A. Readback is correct. Request received. I will confirm my ETA to Pilot's association 3 hours in advance. Over and out.

C11

PP22

Look at Annex A 5 Part A of ICS Bridge Procedures Guide. Study it attentively. The freeboard of your ship is 12 meters. Choose the appropriate pilot boarding arrangements.

Now you help the AB to get everything ready for a pilot's embarkation. Work with your partner. Use the following words and word combinations; a pilot ladder, 1 metre above water, man ropes, a safety line, keep ready for use, handhold stanchions, a bulwark ladder, a lifebuoy, a self-igniting light, proper illumination, a torch, a loop, equally spaced (about ladder steps).

In the meanwhile your ship is approaching the Pilot Boarding position for Sao Sebastio Port.

C12

C13

As a cadet you must get acquainted with Checklist B4 concerning pilotage.

PP23

C14

Together with the OOW complete this checklist. Control whether you prepared everything for pilotage.

While completing the Checklist you saw two unknown terms : a Pilot Card and a Wheelhouse Poster. Your OOW explains the meaning of these terms.

OOW. – As you have already read in the Bridge checklist B4 a completed Pilot card has to be handed over to the pilot and the pilot has to be referred to the wheelhouse Poster as

soon as he is on the bridge. So, let us look through Annexes A3 and A4 of BPG.

PP24

As you see, I haven't completed the Pilot card yet. Here it is. What are the main points included into it?
Cadet .....

OOW. So, now, you fill in Ship's particulars information first. You can take them in from this sample.

John Zybko And where can I get information about the engine ?

OOW. Firstly, you can take it from the same sample, as well as the other information about steering and equipment checked and ready for use.
Secondly, the detailed particulars about manoeuvring characteristics of our ship are given in the Wheelhouse Poster. Here it is on the wall of our wheelhouse.
PP25

John Zybko Yes, Sir. I see. By the way, are there any equipment operational defects now?
OOW. Not any. Everything is OK.
John Zybko I have already completed this checklist.
OOW. Let me see. Yes, everything is correct. Give it to the Master to sign. By the way, can you make a conclusion why these two documents are necessary for the Pilot?
John Zybko Yes, Sir.....

OOW. Good. And now as the pilot in on the bridge, what flags and shapes shall be displayed?
John Zybko .....

Chief Officer: "Before we commence the mooring operation, guys, I'd like to remind you about vitally important condition for carrying out all the works on board ship. I mean
PP26

That's why you'll be given some safety instructions to avoid accidents that are rather common during mooring operations.

PP27
C15
Match the instruction with the pictures.

Chief Officer: "As you see, there is nothing difficult in observing all these precautions. But still it isn't enough to make mooring as safe as possible. You should thoroughly check something else before commencing the mooring operation. What is it, do you think?"

Cadet Nick Alekseev: "Maybe, it's the condition of the mooring ropes?"

Chief Officer: "Exactly! Mooring ropes can often fail because of a weakness caused by rot or physical damage. Such effects as powdering and fusing of strands are an indication of excessive wear and weakness. After a long voyage ropes should be obligatory inspected before use and those which have suffered excessive chafing damage or excessive wear shouldn't be used.

Now look at the picture.
PP28
It depicts different mooring ropes available on board ship but doesn't give their names. Match the number on the picture with the name of a rope.
C16

Now match the pictures describing the mooring operation of our vessel with the commands given below."

C17

Chief Officer: "Guys, port authorities asked us to shift the berth as it is necessary for another vessel. This time we'll make fast by stern. I'd like you to see the mooring operation and compare it with the berthing method you saw yesterday. Besides, you should pay special attention to the procedure of clearing the berth alongside. Listen to the commands and refer them to the actions done in response."

Captain: "Chief Officer, call for the mooring party to stand by ropes. Is the engine ready?"
Chief Officer: "Yes, it has been tested."
Captain: "Forward station, single up forward to the head line and spring. Aft station single up aft to the stern line and spring.
Chief Officer: "Singled up fore and aft."
Captain: "Forward station, aft station. Cast off all the ropes."
Chief Officer: "All ropes cast off."
Captain: "The tugs are closing us. Forward station. Aft station. Pass the tow lines down to the tugs."
Chief Officer: "Tugs fast."
Captain: "Let go fore and aft."
Chief Officer: "All gone fore and aft. All clear aft."

PP29
"Do you see that large container carrier over there? It's going to moor alongside now. What commands do you think the captain is giving at the moment?"

C18
Write the mooring commands for each picture showing the stages of mooring procedure.

CURRICULUM VITAE:

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Profile:

Lecturer within the Department of Business Communication at the Faculty of Applied Economics (University of Antwerp, Belgium). The department specialises in English for business and economics.

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Research interests: Innovative electronic and web-based learning tools. Rresponsible for developing web-based material for use on the University's Blackboard learning system. Participating member of European Leonardo da Vinci project, MarEng (2005-2007), a web-based learning tool for maritime English.

Curriculum vitae: Barbara Katarzyńska, MPhil

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Barbara Katarzyńska has been teaching English at the Navigation Department of Gdynia Maritime University but also has taught an Intensive English Language Course at World Maritime University in Malmoe, Sweden and at IMO-IMA in Trieste, Italy.
Barbara Katarzyńska has written handbooks: "Notes on Ship's, Ports and Cargo" and "Ship's Correspondence" and prepared teaching materials for some of the sections in the MarEng Project within the EU Leonardo da Vinci programme. She has also taught on the Erasmus T.M. programme at Universidad de La Laguna in Santa Cruzde Tenerife. She has actively taken part in many IMLA and WOME and IMEC workshops and conferences.

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Thirty years as teacher, lecturer, curriculum designer, maritime English for academic purposes materials developer, researcher and consultant in maritime English teaching. Employed at WMU since 1984 and Coordinator of the English and Study Skills programmes since 2000. Official CAEL test administrator; presented numerous papers on maritime English at conferences and workshops. Involved in international R/D projects.

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Ten years as teacher, lecturer, curriculum designer, course facilitator, developer of teaching materials for EAP; involved in test development, administration and assessment. Employed at Carleton University in Ottawa, Canada since 1999 as teacher in the Intensive and Credit ESL programmes and at WMU since 2002 as lecturer in the English and Study Skills programme. Involved in international research and development projects.

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Born 1964, originally from New Zealand.

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- Fieldwork experience in Denmark and New Zealand in children/adult inclusion and exclusion processes, using both qualitative and quantitative methods.
- 2 years as a Consultant in the Maritime Industry - worked with personal profiles, human resources and organisation analysis.
- Began Ph.D. Fellowship at The University of Southern Denmark (July, 2006).
- Member of Research Centre SOPRACON, ('Social Practices and Cognition') at The University of Southern Denmark.

Research interests:
Social psychology, inclusion and exclusion processes, social categories; identity, ethnicity & gender, communication, discursive psychology, conversation analysis.

Ph.D. project, 'The Communicative Blue' - communication amongst multi-nationals in the maritime industry. Key words: *Rutine and Crisis Communication, Human error, Leadership and Group Decision-making and Professional Identity in Maritime Operations.*

CURRICULUM VITAE: ADELIJA ČULIĆ-VISKOTA

- teaches English at Faculty of Maritime Studies – Split, Croatia
- teaches English Phonetics and Phonology at Faculty of Philosophy (English Dept.)
- M.A. degree in linguistics with special reference to English
- preparing defence of doctoral thesis on evidentiality

Curriculum vitae: TONI BIELIĆ, Ph.D.

- in 2003 was granted doctorate in maritime technology from Maritime faculty in Rijeka, Croatia
- position: assistant professor – course: organization of ship´s crew
- head of Nautical dept. and former head of Seamen Training centre
- certified Workshop Leader for Bridge Resource Management course
- served as Chief Mate on board NYK container ships in 2006/2007

Curriculum vitae - Dr. Dina El-Dakhs

She is a lecturer at the Arab Academy for Science and Technology and Maritime Transport. She got her Ph.D. in Psycholinguistics from Alexandria University, Egypt. She has extensive teaching, teacher training, course coordination and material development experience in TESOL, ESP and EAP. Her interest areas are TESOL, ES/AP, Linguistics and Communication Skills.

Ms. Karima Zayed is a graduate teaching assistant at the Arab Academy for Science and Technology and Maritime Transport (AASTMT). She has worked as a TESOL and ESP instructor for young/adult learners and college students. She has been an assistant academic coordinator for the AASTMT Maritime English programme for two years.

Ms. Mervat Mahmoud is a graduate teaching assistant at the Arab Academy for Science and Technology and Maritime Transport (AASTMT). She has worked as a TESOL and ESP instructor for teenage/adult learners and college students. She has been an assistant academic coordinator for the AASTMT Maritime English programme for two years.

CURRICULUM VITAE: - DUŠAN FABE

Marine Engineer
M.A. in English and American Literature
PhD in Linguistics
Docent at the Faculty of Maritime Studies and Transport /University of Ljubljana – Slovenia/
Teacher of maritime English for over 20 years
Field of Interest: maritime terminology

Curriculum vitae: Mary Liu

- Currently Deputy Director Wuhan University of Technology-Skaugen Training Centre
- Got B.Sc., Physics in Wuhan University, China in 1982
- Working with Wuhan Transportation University (now the Wuhan University of Technology) since 1982
- Visiting Scholar in Aston University in Birmingham UK from 1987-1988.
- Member of Maritime English Teaching Guidance Committee, the Ministry of Communications, P. R. China1998 – 2003
- Member of Experts' Panel for the project of Establishment of China Search and Rescue Satellite Aided Tracking (COSPAS-SARSAT) ground station 1993 – 1997

Curriculum vitae: Peter Björkroth

MA in English language and literature, Pedagogics (teacher training). Presently doctoral student in organization theory and management studies. Interested in maritime human factor research.

10+ years of ME teaching: different STCW-95 competencies, ESP courses e.g. for Finnish VTS-operators, ice-breaker officers and engine officers. Involved in the MarEng CD-ROM project.

Uses net-based teaching regularly.

Curriculum Vitae: Sandra Tominac

- Born in Croatia in 1977
- Earned a Bachelor's degree in English and Croatian language in 2002
- *Currently working on PhD in linguistics*
- Areas of interest: discourse analysis, corpus linguistics, ESP (Maritime English)
- Maritime English teacher at the University of Rijeka, Faculty of Maritime studies since 2002
- In 2005, participated in the Regional Maritime English Instructors Training Course in Szczecin, Poland and presented a paper at the IMEC 17 in Marseille.

Curriculum Vitae: Siep Konijn

Started as a student at a Nautical College and ended up teaching there. Worked as a deck officer in the merchant navy for ten years. He combined teaching at secondary schools with evening classes at the Amsterdam university resulting in a teaching degree. Next he continued as a lecturer of English and a bit of navigation at the Amsterdam Nautical College and worked there for 22 years.
Frequently developed teaching material and taught English for the Dutch River Police, the Amsterdam Port Authority and IMO IMA in Trieste. Has been teaching at the Dutch VTS Training Foundation since 1985 and still enjoys doing so as a pensionado.

Curriculum Vitae: Yan Qiu Wang

Name: Yan Qiu Wang
Position: Associate Professor
Date of Birth: November 20, 1955
Marital Status: Married with a son
Qualifications:
Bachelor of Arts (Harbin Normal University)
Postgraduate diploma in Applied Linguistics and Science English (Dalian Maritime University)
Education
July, 1999 English Language teacher Development foir Business English, Center for Professional & Business English, Hongkong Polytechnic University
1986 — 1988 Postgraduate, majoring in science English and applied linguistics
1978 — 1982 English major, Foreign Languages Department, Harbin Normal University, Heilong Province, China

Professional and work experience:
2004 — 2005 Visiting scholar to Melbourne Royal Institute of Technology, Australia, teaching Chinese, doing research and coordinating inter-university (RMIT, Australia & DMU, China) student-staff exchange program and UMAP program.
1988 — 2004 English teacher, School of Foreign Languages, Dalian Maritime University. Duties include teaching English to non-English majors, phonetics, intense listening course for business foreign language training.
June to July, 2001 Teaching Chinese to a group of students from Texas State University, U.S.A., who studied Chinese and Chinese culture at DMU for one month and a half.
1983 — 1986 English teacher, Municipal Education College of Qiqihaer, Heilongjiang Province, China
Courses taught: English reading, listening comprehension and English speaking, intensified listening skills training, phonetics, spoken English for academic exchanges, writing in English
Interests: Cross-cultural communication in the maritime context
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Curriculum vitae: Ms. Jieying Xie

She studied nautical technology in Shanghai Maritime University from 2000 to 2004. From 2004 to 2006, she was majoring foreign linguistics and applied linguistics and got master degree. She is now the teacher of maritime English in Merchant Marine College of SMU.

Curriculum vitae: SUGIMOTO, Masahiro

Instructor of marine engineering and maritime English at the Oshima College of Maritime Technology in Japan. First engineering officer of the college training ship "Oshima-maru".
14 years sea experience as an engineering officer and instructor of marine engineering of the NIST.
1st Grade Maritime Officer (Engineering)
BSc in Maritime Science at the Kobe University of Merchant Marine
MSc in Maritime Affair (MET) at the World Maritime University.
Member of the IMLA and IMarEST

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Curriculum vitae: Chaojian SHI

Professor of nautical science, Dean of Merchant Marine College, Shanghai Maritime University. He was graduated from Shanghai Maritime University in 1982 and joined Advanced Nautical Studies Program at California Maritime Academy, California State University from 1986-1987. His research interest is focused on maritime simulation systems, ship intelligence and safety, as well as maritime education and training.

Curriculum vitae: Naoyuki Takagi

He graduated from the Tokyo University of Foreign Studies with an MA in English in 1989 and obtained his Ph.D. in psychology from the University of California at Irvine in 1993. He has published many papers in cross language speech perception since then and worked on several English-Japanese dictionaries. Well "marinated" since he started teaching at the TUMSAT, with an estimated total sea time of 3 months, he has produced an SMCP based Maritime English textbook for deck cadets and a web site for improving Maritime English pronunciation. He is in charge of the Maritime English Initiative as a full professor in the Faculty of Marine Engineering.

Curriculum vitae:Antolina Garcia Carrascal

BA from the Universidad del País Vasco. Research Grant from the Spanish Ministry of Education. MA from the Universidad de Oviedo. Lecturer in English Language. Taught a varied number of subjects, from English Phonetics to various Englishes for Specific Purposes and monographic courses in History of the English Language.
Member of AEDEAN-ESSE (Spanish Association for English and American Studies-European Society for the Study of English), SELIM (Spanish Society for Medieval Language and Literature) and AELFE (Association of European University professors specialised in languages for specific purposes). Since 1999, most of my lecturing and research duties and interests have been devoted to Maritime English.

Curriculum vitae:Veronica Zykova

She graduated from the Murmansk Teachers Training Institute in 1990.Has been working in the Murmansk State Technical University since then. An associate professor of the Chair of foreign languages.In 2002 received the degree of PhD in StPetersburg State University. Made four voyages on the sailing training ship Sedov. Participated in IMEC
in StPetersburg.

Curriculum vitae: Yolanda Noguera Díaz

Born in Cartagena, Spain in the mid 70´s. She is a bachelor in art by the university of Murcia, in Spain, Mphil in applied linguistics and nowadays she is doing her PhD in Naval English. She is a spanish civil servant teacher and works in a upper school and collaborates in the Submarine School, teaching english to future submarine officers.

Curriculum vitae: Naumova Nadya Tsankova

Senior lecturer at "N.Y.Vaptsarov" Naval Academy, Varna, Bulgaria since 3., November 1989. Teaching: General English Courses, ESP courses for Mechanical and Electrical Engineers, Chartered Brokers Course.
Research interests: Doing Research on V-ing forms in a Cognitive Linguistics perspective for a PhD thesis.
IMLA member since 1998

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VALERIE ANN SHORT MA

For over 27 years, Valerie has taught General, Technical and Specialist English to non-English speaking trainees; in 1978 Val was awarded a Bachelor of Arts degree from Victoria University of Wellington, and in 1990, a Master of Arts : Teaching English as a Foreign Language : University of Reading, United Kingdom.

In Singapore from 1980 until 1989, Valerie was employed at The British Council's English Language Centre, where she trained English teachers from Singapore's Ministry of Education. Later living in Launceston, Tasmania, Valerie introduced and taught the first training programs in Maritime English for overseas trainees at the Australian Maritime College.

From 1992, training programs were developed for English teachers required to teach Maritime English in the Asia Pacific; and in 1996 an MET Association was formed for the Asia Pacific region, which rapidly expanded and became Global MET. AustralAsian Maritime Education Services Ltd., was a founding Member of this important Association.

From 1994, the teacher training programs were provided in Vladivostok, Manila, Dalian, Shanghai, Qingdao and Hong Kong. From 2002 - 2004, Stages I, II & III training programs were provided in Vladivostok, Manila and Tokyo. This year Valerie designed and taught a new on board communication training program for Deck Officers for a large shipping Company in Hebei, China.

The content of the Maritime English teaching programs provide education and training for teachers required to teach to the criteria described in the IMO Code of Standards of Training, Certification and Watchkeeping : STCW (1978/1995).

Over the past 17 years, Valerie has pioneered these training programs in the Asia Pacific region to assist teachers of Maritime English, and now directly for seagoing personnel.
In 2000, Valerie was appointed as a Registered Consultant at the International Maritime Organisation : IMO.

Valerie A. Short MA
Director - Maritime English Training
Wellington New Zealand
September 2007.

CURRICULUM VITAE
FOR
TATIANA POLSKAYA

Tatiana Polskaya
English Language Trainer
BGI Novorossiysk
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1975: Formal university preparation
- graduated from Kuban state university, Krasnodar, USSR.
- Native language is Russian
- Degree in linguistics

Specialization:
- English language and English literature
- Second language: German

Post graduate courses in linguistics:
- Completed post graduate course at University of Leningrad for intensive teaching and translation of special technical subjects:

maritime, judicial, medical, technical literature and fiction
1997: Academy of finance & business, Tower Hill college, London, Management training.

LINGUISTIC RESPONSIBILITIES IN STAFF POSITIONS:

- English instructor for commanding staff of Novorossiysk shipping company "Novoship";
- Use of translation skills: German and Dutch companies plus the English company: "Nesbit Evans" (1989)

1989 Special linguistic representative in Russia and UK
- Represented city of Novorossiysk in Soviet-American sister cities conference in Tashkent
- Principal instantaneous translator for lecturers given by commanding staff of Soviet shipping companies at London City Business School, held at Barbican Centre, London.

1990-1999 Special technical and commercial translator
- Instantaneous translator for entire technical-commercial symposium arranged by Novoship for American companies Chevron, BP, Castrol, Sigma, Framo, Shell, Interpaint.

1991-1997 Director of intensive foreign language JV
- Director of intensive foreign languages courses at Joint Venture Company Novoimpex (Russian-UK-Germany) in Novorossiysk

EDUCATION WITHIN THE COMPANY FRAMES

June 1999 – Training Course for International Auditor, DET NORSE VERITAS, Acomarit
March 2000 – Framo Pumps Operations, Novoship
September 2002 – Marlins Seminar, St. Petersburg
Regular Participation in "Front Line" seminars

OTHER INVOLVEMENTS OUTSIDE THE COMPANY

- Free lance lecturer at Novorossiysk Branch of Moscow Humanitarian & Economical Institute, President of Foreign Languages Chair
- Research in Psycholinguistics Topic: "Dialogue Modelling (Speech Processing)"