Verbal Communication failures and Safety at Sea

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I am Russian, and you are the Turk
Why do we need this English?
(A joke)

ABSTRACT

The significance of English language, as a working language of the international shipping industry does not call any doubt. The safety and overall performance of the international fleet depends on the skill to apply it. The ability of a non-native speaker to have a good command of the Maritime English is very much influenced by the ability to think in it in the frameworks of the maritime profession. One of the relevant aspects to make the teaching and learning processes more effective is to power up the thought activity of a seafarer using English.
To develop this ability it is necessary to involve in teaching and assessment processes both the professional English teachers and professional seafarers.
The paper highlights and analysis some findings in assessment and examination of seafarers in Maritime English from the view point of non-native speaker.

1. Introduction

The process of globalization dictates higher requests to a level of knowledge of language and skill to apply it. The knowledge of vocabulary is not sufficient to work in multinational crew.
Globalization of the shipping industry and application of modern technologies on board vessels demand a high level of education, training and certification of seafarers. The modern seafarer is not that who is able only to push corresponding buttons of hi-tech navigation devices or knows terms in frameworks MSCP. He/she first of all the highly educated officer, capable to make effective decisions on board a vessel and effectively work in multinational crew in various complex and extreme situations. Historically developed that English became the means for the communication at sea that is why the overall performance of the international shipping industry, safety at sea and protection of an environment in many respects depend on a level of command of the language. The very important ability of a seafarer is a skill to apply Maritime English directly, not using the native language. This is not simple and here are a lot of contradictions, but it stimulates arranging the teaching process in Maritime Universities in English that is not always possible to carry out due to various national reasons. Sometimes it seems we live in time of the second attempt of the Mankind to build the Babel tower already having some experience of construction the first one.

2. Structure of the communication - the general information.

The communication at sea plays extremely important role for "*safer shipping and cleaner oceans*".
Out of the four basic communication skills, i.e. listening and speaking, reading and writing, listening and then speaking are the most complex and complicated ones. Plus, listening and speaking amount to more than 85 % of the total communication requirements a deck officer has to cope with in his or her services on board and in the harbor (Trenkner, 2002).

UK P&I Club found out that deck officer error contributes 43 %, crew error 21 %, shore error 21 %; pilot error, including VTS, 12 %, and engineer officer error contributes 3 % to casualties registered worldwide.
Canadian pilots stated that language barriers on foreign registered vessels always , often or sometimes prevent to as much as 79.3 % an effective exchange of information with the master and officer of the watch, (Trenkner,2002). A great part of this casualties occurred due to communication failures.

In psychology it is accepted to call the person transmitting the information as *a communicator*, and the person who accepts the information *as a recipient*. For example, the Master is the communicator, and the watch officer is the recipient; the pilot is the communicator , and the helmsman is the recipient. The communication at sea is information interaction which is maintained by seafarers during performance of their functional duties. The communication may be *internal* and *external* one.
On board the vessel (internal communication) there may be two types of professional communication: the so-called *descending communications* – the communications of the Master with the subordinate staff that usually prevails, but undoubtedly there is an *ascending communication* of subordinate stuff with officers and the Master. Besides this the external communication with other ships and shore stations is played big role . The

example of such communication between the Master, Chief Mate, Watch Officers and Ratings is submitted on fig. 1.

In shipping industry the so called *controlled communication* prevails. Controlled communication is the information interaction of seafarers which is fixed in the duty rules and mandatory procedures determined by national and international regulations. Controlled communication procedures may be appreciable, calculable and planned beforehand. SMCP and GMDSS procedures may be as an example .

But in emergency there may occur an *uncontrolled communication*, that may not be planned beforehand.

The formal criteria of completeness of the communicative act is the fact of an observable reply by the communicator of his/her message from the recipient , i.e. presence of an authentic feedback from the recipient about physical receiving of the message. For example, the helmsman should repeat the Master's command prior to realize it.

The basic steps of the communication process which determine efficiency of communicative influences on the person can be designated as follows:

1. Comprehension of idea of the message by the communicator.
2. Nonverbal behavior of the communicator (nonverbal coding of information: gestures, a pose, a mimicry ...).
3. Verbalization of messages by the communicator.
4. Perception of nonverbal behavior by the recipient which may be influenced by various types of hindering.
5. Perception of the verbal message that may be received in noise conditions as well.
6. Conceptualization of the idea of message.
7. Realization of action incorporated in the message.

Communication effectiveness :

The communication is considered as *effective to the process* when communicator has received the confirmation on acceptance of his message by the recipient.

The communication is considered as *uncompleted* if there is no feedback confirming the reception of the message by the recipient.

The communication is considered as *effective to the result* when during the dialogue communicator has reached the goal by means of communication.

In the most of cases people communicate by means of *dialogue*. Dialogue is a method or tool to solve facing to people problems by means of communication.

All wheel orders given should be repeated by the helmsman and the officer of the watch should ensure that they are carried out correctly and immediately (SMCP,2001).
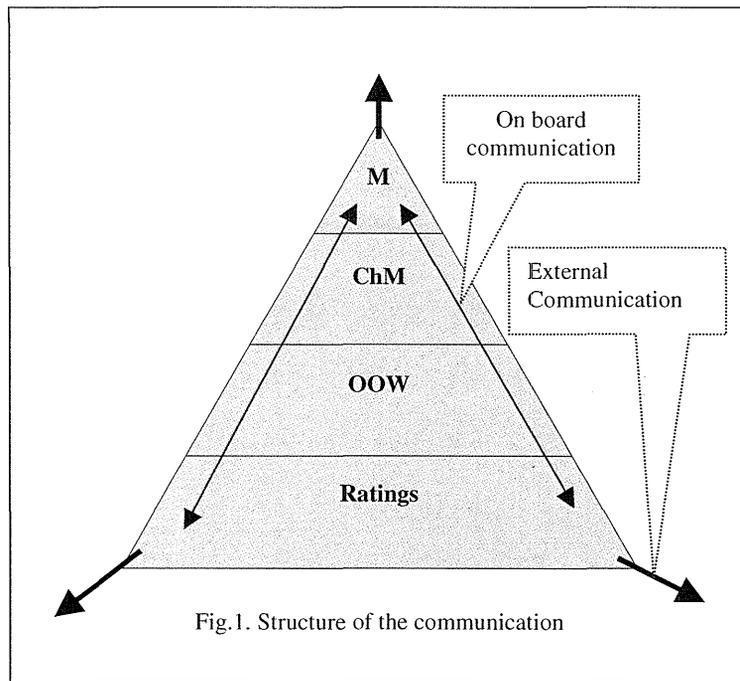

Fig.1. Structure of the communication

The most complicated task in communication is to formulate the idea of a message so that the interlocutor had not to strain after its acceptance, internal translation and understanding. The communicator then is not should to explain in addition what he or she meant. This statement directly concerns also to native speakers. In communication procedure all participating parties carry the responsibility for its effectiveness .

The different purposes and tasks of communication demand from interlocutors the changing of strategy in speech behavior and speech activity. But nevertheless our daily communication widely uses different types of clichés and stereotyped speech blocks which serve frequently in repeating speech situations. MSCP are also constructed by this principle. So we consciously apply restrictions of English language or use some standards .
Maritime English does not make use of all the means of the English language but only of those which are suited to meet the communicative requirements of a given maritime context-that is why Maritime English is regarded a restricted language as others ESPs (English for special purposes), too (P. Trenkner, 2002).

The understanding of words is represented by the most elementary operation of decoding of the message. The real situation influences on conceptualization of words in dialogue. The simplified model of understanding of speech is observed only in case of perception of text in a foreign language. What also the Maritime English for non-speakers is.
It is necessary to distinguish the true understanding of the message from memorizing it.
All the kinds of activity of a person include the element of forecasting ,or by another words *anticipation* , i.e. there is « a language probability » which allows to predict word combinations or a word in a given context that helps to react adequately and quickly in speech contact, but it occurs when the subject of conversation is known to interlocutors. Own speech as well is predicted in many cases subconsciously. Without forecasting of own speech with respect to its basic context no coherent and intelligent statement can be pronounced on the subject of communication.
OOW usually foreknows, what questions will be set to him by the VTS operator and what information is necessary for the pilot or for the external interlocutor, but there are also mishaps. *The following conversation is a wonderful example of the dangers of using VHF as a means of collision avoidance (MARS reports,2002):*
Ship A - " Vessel on my port bow, this is the vessel on your starboard bow, with a CPA of 0.15 miles (sic) come in please ".
Ship B - " Yes, what is your position "?
Ship A - " Second Mate ".
This was overheard on VHF Ch16 in the Malacca Straits. It is clear that the context of a communication was not identified by OOW of ship A.

3. Communication failures

There is not any doubt that the crew of a vessel should carry out precisely all the functional duties which in many respects depend not only on knowledge and skills in such disciplines ,for example ,as navigation or engineering , but on the ability to apply correctly and competently the English language which nowadays is set be considered as an additional professional discipline in MET universities of non English speaking countries. To operate the multinational crew, not having clear means of communications is impossible and a known question *"How does she answer the helm?"* may be paraphrased as to *How does the crew answer in English?.* Language is a rudder of a communication. Shiphandling is carried out with the help of a rudder, and the crew management is made by means of a language. The crew should be controlled in all situations, and therefore it is a little bit strange, that amendments to Convention STCW 78 do not contain enough requirements on English language for engineers and ratings. Effective communication with ratings is impossible, if they will not understand the instructions of officers.

There are a lot of reasons of communication failures leading to emergencies: it can be language incompetence or low qualification level with good English . For example, we observed the case when the OOW (for the first time in his life !?) has seen the ship's track on the screen of a radar and has reported to Master in fluent English that he sees a trace of a rocket flying directly to the vessel. There was an emotional explosion on the navigating bridge and consequence of which is not necessary to describe here. Is this a fact of communication failure ? . Obviously, yes , it is the communication failure due to low qualification level of the watch officer.
Another example gives a typical Maritime English failure in communication:

This report (MARS reports, 2002) concerns a series of VHF transmissions, which were monitored over a period of three days. A vessel was transmitting a message in poor English as follows:
" all ships, all ships, this is............. I have problem with my rudder. My speed is 14 knots. Asking all ships to keep clear of me ". A position followed.
At one point during these broadcasts, which had been greeted with some derision by various other listeners, catcalls and foul language, one vessel asked if the originator was having problems with his radar. The words sounded almost identical in the accents of the different nationalities and there were much repeats of:
*" it is my ruddah ", Is it your rada? "," Yes, it is my rodda, not my rudah " etc.*

Amusing though this was at the time, the question has to be asked why was a vessel, presumably a capital asset of some considerable value, possibly with a cargo of equal or more value, steaming at 14 knots with faulty steering gear? And why are the persons ultimately responsible for the operation and insurance of this asset allowing such poor quality officers to man the vessel?

In principle it is better to avoid an inclusion of similar pronounced words in mandatory communication procedures.

Language is the main tool of a dialogue and if the non recognition of such as words *radar* and *rudder* can lead to an accident then a wrong pronunciation and understanding of phrases *How are you?* and *Who are you?* may lead to a severance of diplomatic relations between the states.

A lot of years ago an amusing case has happened with me during the final state examination in English. Examiner requested to explain him the idea of a Great Circle Sailing. The first question was " What is a Great Circle? " To my shame I could not recollect of essence of a right answer because all my thoughts were in English but not in navigation. Supposing, that the teacher of English does not know the navigation, I have invented the answer, having formulated it correctly in English and abnormally from the view point of navigation.

In the result the teacher of English language has put me "excellent", but the professor of navigation, who was involved in the examination team, has paid attention to the fact that, I do not know the navigation and he has disagreed with the mark "excellent." So let us try to find the answer who was right in this situation: the teacher of English or professor of navigation? There is no doubt that the truth was on side of the professor of navigation (Loginovsky, 2002).
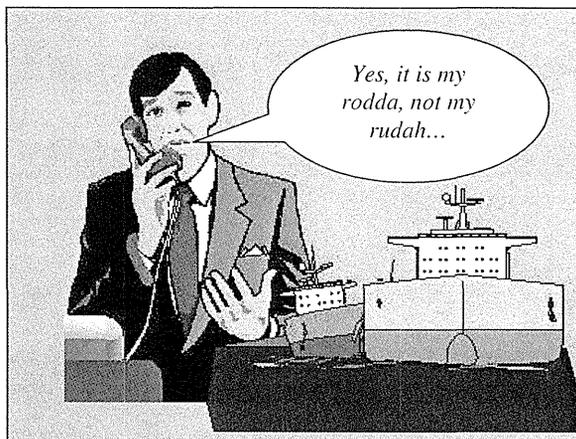
Here we observe the communication failure happened due to professional incompetence of the student and the teacher in navigation.

The closer social and professional experience, the more easy people understand each other.

Status-and-role dialogue is based on expectations of that the communicating person will observe the speech norms peculiar to his/her rank and to his/her position in a society and this is determined by the character of mutual relations with the interlocutor.

The multinational crew of a vessel undoubtedly reduces level of safety at sea and this is due to not only the lack of a common native language on board ,but also due to various social experience and various cultures of crew members. Here is an instructive example of the communication failure because of various social experience of partners speaking with each other, (I.N.Gorelov, K.F.Sedov, 1998).

The six-year old son eats an apple and thoughtfully asks his father:
>*-Daddy, why the apple I bite off, becomes brown?*
>*-The matter is, father answers, - that there are different chemical substances in an apple, including iron. And so, when iron enters into the chemical reaction with oxygen, which exists in air, it is oxidized . As a result of reaction the substance that painted an apple in brown color has been formed.*

For some time the six-year old son keeps silence. Then the child asks shyly:
>*-Daddy, and whom did you talk with?*

The example shows the communicative failure which has arisen as a result of a difference in social experiences of interlocutors.

Even if people communicate in the native language of loss of the information can reach up to 50 %, and in emergency the person can remember less than 20 % from the perceived message.

The reason of a communication failure may be due to the big difference of levels in command of English , that is why the standardization is necessary. For example if Russian and Turk seafarers can communicate effectively among themselves in Maritime English it does not mean at all, that the same level of understanding should be if they communicate with native speakers in the same Maritime English. For more understanding the most of

special subjects in MET institutions in non-English speaking countries should be delivered in English. For native speakers a principal cause of a communication failure may be « too good command of the English language » and also the professional incompetence, and for non speakers this is professional and language incompetence.

It is a very hard work for non native speaker to approach the native speaker language level. During teaching and learning process of the foreign language the native language in most cases acts as a handicap. In one of L. Leshe's theories (I.N.Gorelov, K.F.Sedov, 1998) it is necessary to build a technique of teaching of foreign language using the principle that from the very beginning up to the very end the second language as less as possible contacted with the system of the native language in a learner's mentality , therefore L. Leshe has acted against traditional "grammar and translation method". Under the same theory « single-shot learning » of the second language is doomed for a failure – constant practice is necessary for maintenance of it at the certain level. *Maritime English may not be reduced to a purely terminology based concept*, (P. Trenkner, 2002). It is obviously, if we speak about the globalization of shipping industry , the time has come to accept English as the *working language* in MET institutions and to give it the status in similar conception for working languages as required by the revised Regulation 14 of Chapter V of SOLASD 1974 . Especially, it concerns IAMU members.

4. Self- assessment of Seafarers in Maritime English

We try to overcome linguistic barriers, diligently learning English language as Seafarer should be able to communicate without interpreter especially in emergencies. There is no doubt, that during the communication procedure plenty of difficulties occur. We have carried out some research in the group of Russian Seafarers consisting from 100 person (Masters-4; Chief mates-22; Second mates – 21; Third mates-14; 5 year of education students from AMSMA - 39) and have asked them to answer the question: *What nationalities are the most difficult for you to understand their English ?*

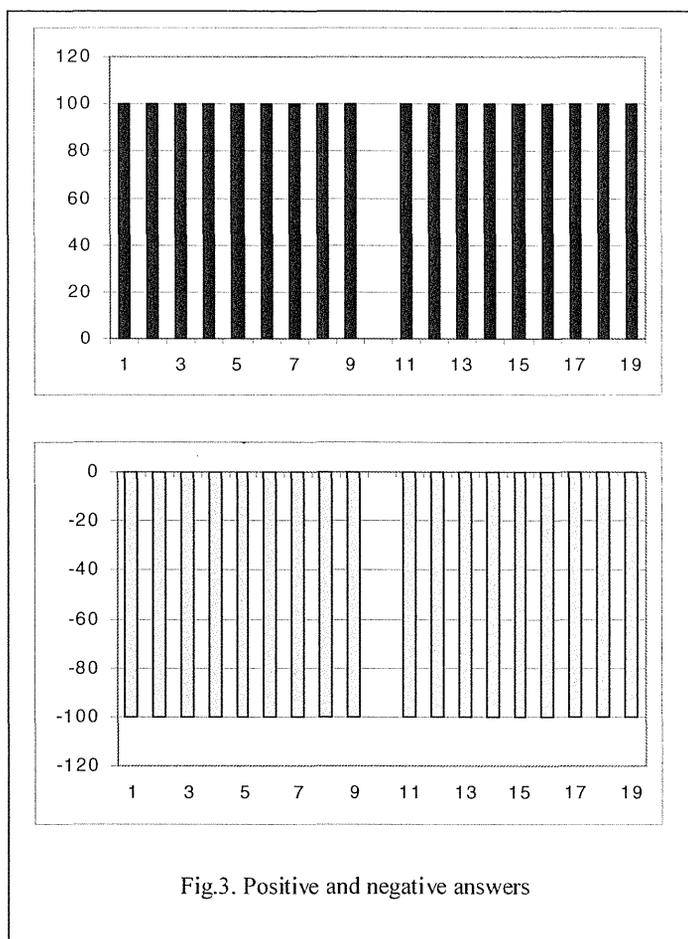| Nationality	%
Englishmen	**47**
Americans	**13**
Filipinos	9
Chinese	5
Arabs	5
Frenchmen	5
Turks	3
Spaniards	3
Greeks	2
Germans	2
Irish	2
Australians	2
Latinos	1
Hungarians	1
Koreans	1
Hindus	1
Russians	1

Fig.3. Positive and negative answers

The answers are presented in the table.
It is hardly right to make a conclusion that this set of 100 Russian Seafarers is representative, but from the first two lines with the big share of confidence it is possible to say that :
  ✓ Certainly ,the command of Maritime English of the biggest part of the presented group leaves much to be desire.

✓ English-speaking Seafarers bear not the less but the more responsibility for the effective communication with the non speakers.

	Question	+	-
1.	If you speak English, what language do you think in?	E	R
2.	When you listen, whether you translate the heard in your native language?	no	yes
3.	When you listen and write down, what language do you write down in?	E	R
4.	If you need to memorize the sense of something told you in English what language you use to remember?	E	R
5.	If in emergency you cannot make a correct phrase in English, whether it prevents you to communicate?	no	yes
6.	Do you watch the lips of the interlocutor during conversation?	no	yes
7.	Does the distance the between you and your interlocutor influence on the process of understanding of speech?	no	yes
8.	Do you strain your attention and hearing for understanding of speech?	no	yes
9.	Does your inability to tell correctly influence on a level of communication?	no	yes
10.	If the language level of your interlocutors is higher than yours one does it influence on your ability to communicate?	no	yes
11.	Are you getting tired during the long listening of the English speech?	no	yes
12.	Do you read fluently the professional text?	yes	no
13.	Can you estimate fluently the basic information in the professional text?	yes	no
14.	Can you use the navigational charts and publications in English?	yes	no
15.	Can you work in a multilingual crew?	yes	no
16.	Did you work in a multinational crew? How many years?	yes	no
17.	Is your crew multinational now?	yes	no
18.	Had you sometimes difficulties in communication with VTS - operator?	no	yes
19.	Had you sometimes difficulties in communication with pilot?	no	yes

The Questionnaire for a self-estimation of command of Maritime English for the same group of Seafarers has been developed and presented above . The answers marked by respondents as "+» show that they suppose having a high level of Maritime English , and marking by "-" as not good in Maritime English.

If to take all the answers as positive (the ideal English-speaking deck officer) the results of them are shown on the top graph of fig. 3. Negative answers (the "ideal" know-nothing deck officer) are shown on the lower graph on fig. 3. Number of question is shown on a horizontal axis, vertical axis is marked in percent units, (the question 10 is excluded). Fig.4 presents the average results of research.

The main results are as follows:
✓ 37 % of respondents suppose they think in English.
✓ 25 % of Seafarers do not translate the heard into Russian.
✓ 75 % of Seafarers make notes in English.
✓ The majority of the group suppose , that there are no problems in use of charts and nautical publications in English
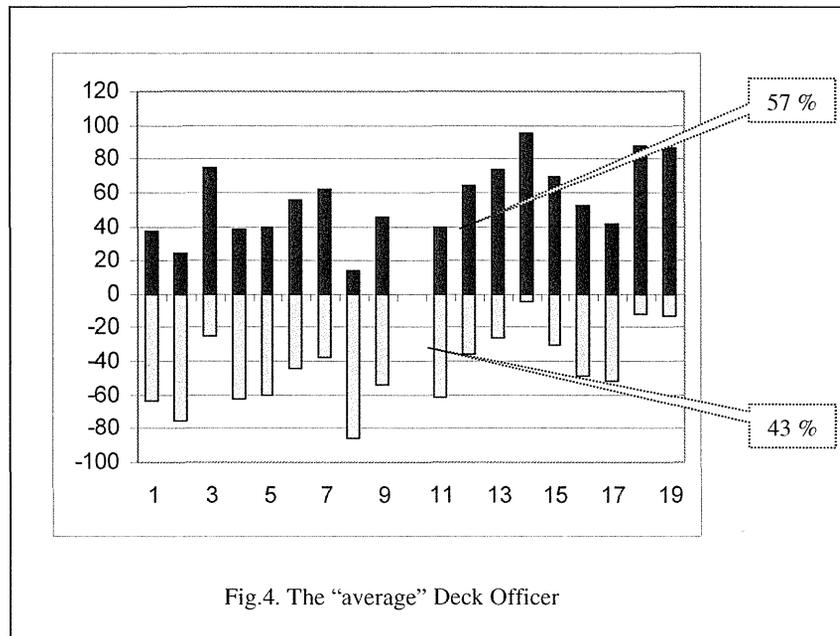✓ The majority did not face problems in

Fig.4. The "average" Deck Officer

communication with the pilots or VTS-operators.

✓ 56 % of Seafarers suppose they do not pay attention to an articulation of the interlocutor.
✓ 14 % of seamen do not strain their attention and hearing for understanding of the English speech.
✓ 62 % of Seafarers think that distance between them does not influence on a level of communication.
✓ 52 % of respondents worked in multinational crews.
✓ 70 % of Seafarers suppose they can work in multinational crews.
✓ 52 % of Seafarers worked in multinational crews are correlated with 57 % of positive answers in general.
✓ **43 %** can cause communicative failure. This figure 43 % correlates with the data from work of Trenkner, (P. Trenkner, 2002).

5. STCW 78/95 requirements

If we shall read the STCW 78/95 Code, then in the table A-II/1 concerning knowledge, understanding and professionalism in the English language we shall find the following, (STCW78/ 95):

Knowledge, understanding and proficiency:
Adequate knowledge of the English language to enable the officer to use charts and other nautical publications, to understand meteorological information and messages concerning the ship's safety and operation, to communicate with other ships and coast stations and to perform the officer's duties also with a multi-lingual crew, including the ability to use and understand the Standard Marine Navigational Vocabulary as replaced by the IMO Standard Marine Communication Phrases.

Methods for demonstrating competence: examination and assessment of evidence obtained from practical instruction.

We have tried to evaluate « Knowledge, understanding and proficiency » of every Seafarer from this group. Two Chief Mates who according to the questionnaire have estimated themselves have been chosen from researched group of Seafarers, as shown on fig. 5. From the graph it's clear that the Officer "B" evaluated himself higher than the officer "A".

After the self assessment , they have passed testing by the Seafarer-examiner using the principle of « decomposition of concepts », (Loginovsky, 2002). The essence of which is that Examinee is asked the initial question (Fig.6) After the answer, the targeted terms from this answer are selected. The goal of the examiner is to make the examinee to clarify the targeted terms. Then the procedure is repeated. This iterative algorithm is prolonged up to a definite amount of questions and targeted terms, which can be established in advance. The number of right answers determines the score. Thus, the student is examined in Maritime English, maritime terminology, depth of knowledge in particular subject, ability to discuss on special topic. And also the seafarer trains to answer the questions and finally to think in English.
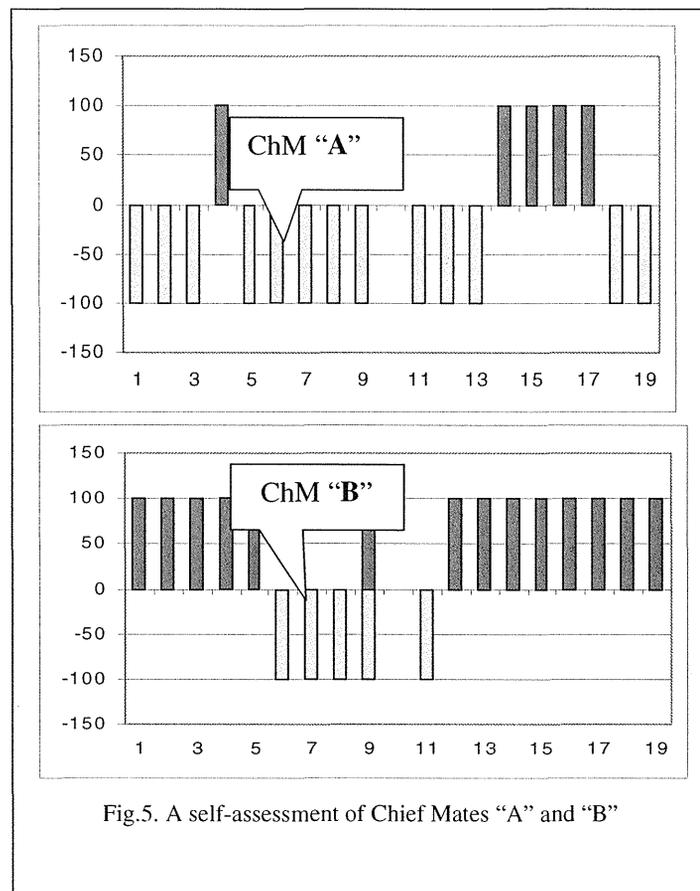

Fig.5. A self-assessment of Chief Mates "A" and "B"

Let's consider an example.

Question 1: What is a Dead Reckoning Position (DR)?

Answer 1: It is a position obtained using ONLY the **Courses** steered and the Distances run. Such distances are derived from the Log or from Engine Revolutions, (Nicholls's Concise Guide to Navigation ,1987).

The term **Course** is selected as a targeted term and the second question is about the **course** ... etc.


Fig.6 . Decomposition of concepts
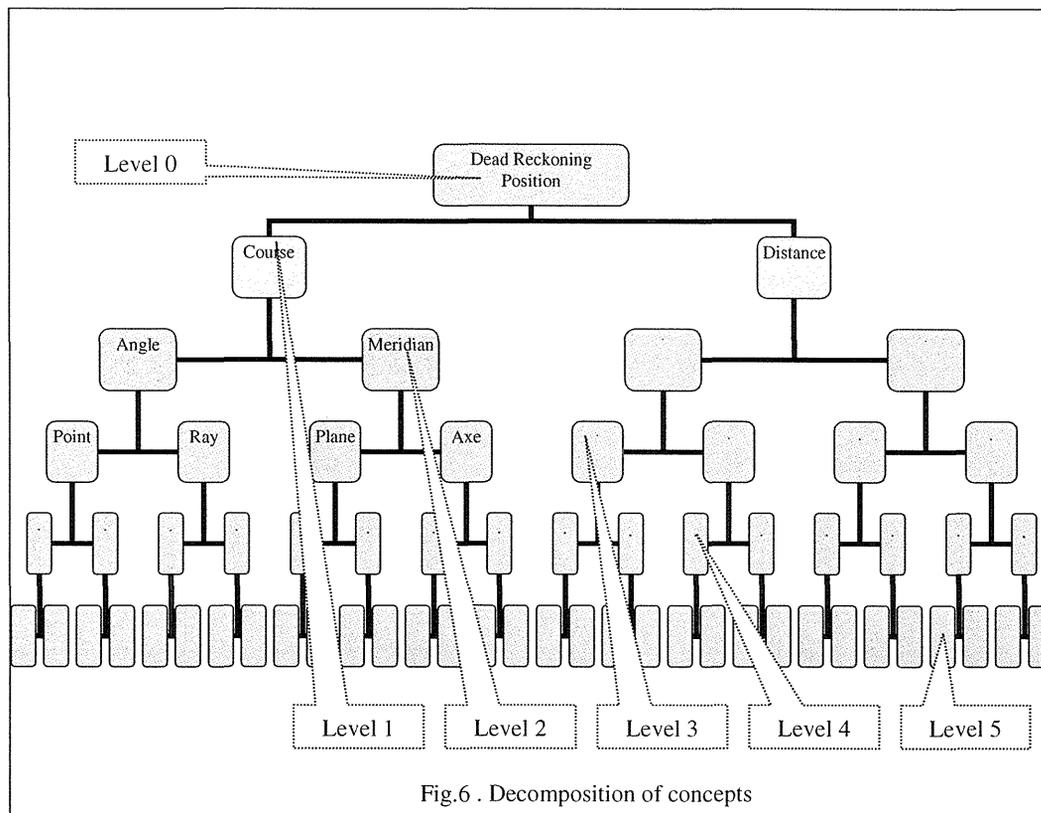
Assessment by the decomposition method allows to check up not only the knowledge of Maritime English, but also a level of erudition of a Seafarer. This test was passed by officer "B" with the score 5 and by officer "A" with the score 2.

The pyramidal model of testing may be used as an adaptive testing procedure where the thick line shows a route of tested Seafarer , whose results of performance of tasks are marked in the top table of figure 7. The positive and negative answers are marked by "+" and "-" accordingly. If the test contains 9 questions then the best result is 19, and the worst is 11.

6. Conclusion

Safety and overall performance of the international fleet in many respects depend on qualification of Seafarers and their skill to use the means of communication the Maritime English of which is the base. Efficiency of teaching, learning and testing of Maritime English is not possible without professionals Linguists and professional Seafarers. The professional Seafarers

0	A	B	C	D	E	F	G	H	I
+	-	+	+	+	+	+	-	+	+

Fig.7. Pyramidal testing model
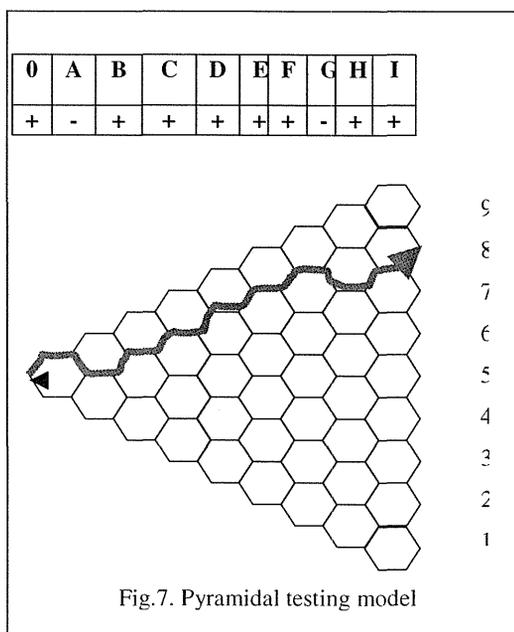
having sea going experience, education and corresponding academic degrees in non English-speaking countries should be actively included in teaching process that enables to educate and train the high qualified Seafarers. A lot of attention should be paid to the objective assessment and evaluation. It is obviously, if we speak about the globalization of shipping industry and multinational crews, the time has come to accept English as the *working language* in MET institutions and to give it the status in similar conception for working languages as required by the revised Regulation 14 of Chapter V of SOLAS 1974 . Especially, it concerns IAMU members.

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