MA WORK BASED LEARNING STUDIES

MODULE WBS 4861

Project Module

MARINE ACCIDENT INVESTIGATION

MENTORING & THE TRANSFER OF EXPERIENTIAL KNOWLEDGE IN TODAY’S MERCHANT FLEET

André L. Le Goubin

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SUMMARY

According to statistics, the number of marine accidents is rising, and recent increases in the cost of P & I insurance cover provides further evidence that the cost of these accidents is also soaring.

This research establishes that a contributory factor to the increase in accidents is that experiential knowledge (knowledge gained from professional, ‘on the job’ experiences and reflected upon) is not being passed from senior to junior officers onboard many merchant vessels, in the traditional way that it used to be, by mentoring. Through this project the maritime community has been engaged in a conversation about mentoring and the need to pass on professional experiential knowledge.

Following worldwide research throughout the community by questionnaire, and ethnographic research by the author, the research will show that a lack of experiential knowledge is considered to be a significant factor in the current increase in accident rate. It goes on to establish what is the causation of this lack of knowledge and then, based on suggestions from members of the maritime community it offers some practical suggestions to address the problem and re-establish the flow of experiential knowledge.

These suggestions are contained within in a paper titled Mentoring and the transfer of experiential knowledge in today’s merchant fleet and draft of a book outline titled ‘Pass it On!’ Both of these publications are products of the distillation of the research findings and are focused on breaking down barriers and re-establishing the flow of experiential knowledge through mentoring in the multi-national, multi-cultural, merchant fleet of today.
1. CHAPTER 1 – PROJECT INTRODUCTION

1.1. Introduction

‘I was born on the island of Sark in the Channel Islands, an island of just 3 miles by 1.5. Although the son of a baker, it was soon apparent that the sea was in my blood as, by the age of 4 I am told, I had decided I was going to sea; of course at that age I was going straight to be captain!’ (Extract from RAL 2007).

I never wavered from that desire and from the age of 12 I spent most of my spare time onboard a small ship as deck boy. I became a deck cadet on leaving school, sailing worldwide on various cargo ships, qualified as a navigating officer in 1983 and gradually rose through the ranks as a deck officer until attaining command of a passenger ferry at the age of 27. I had attained my boyhood dream, although the voyage was a lot longer than I had envisaged at the age of 4. From being captain, I progressed through being a marine pilot, to my present position as a marine consultant.

At the tender age of 12 I became a member of my community of practice, the merchant navy, and remain an active member of that community today. Through my career to date, I have studied for and taken many formal and written examinations, but in addition to this theoretical knowledge, I am always very conscious that much of my marine knowledge comes from experiences, both my own, and those of other mariners who have passed on their experiential knowledge to me, through mentoring. In my early years at sea mentoring was a natural way of transferring experiential knowledge and, as my career developed, I achieved positions where I could mentor and undertake knowledge transfer to others, whilst still learning experientially myself. Latterly, I am becoming increasingly aware that the art of mentoring has to a great extent been lost, thus breaking the chain of experiential knowledge transfer.

Much has changed within my community of practice since my membership began, for example:

- On many ships, crews have been reduced to the bare minimum capable of operating the vessel,
- Hours worked have increased significantly and hours of rest have been reduced, often to dangerous levels, and
• Many merchant ships are manned by staff of mixed nationalities and cultures, some of which struggle to communicate in a common language.

Although a significant amount of legislation has been introduced, particularly in the last 15 years, to combat the problems associated with some of the changes, accident rates are increasing. According to Det Norske Veritas (DNV) the Norwegian Classification Society “Over the past five years, there has been an increasing incidence of serious navigational accidents in several shipping segments. This is confirmed by a lot of leading insurance companies” (DNV 2008). I believe that a contributory factor to this increase in marine accidents is that experiential knowledge (professional knowledge gained from experiences and reflected upon) is not being transferred from senior to junior officers onboard modern merchant navy vessels by mentoring, in the manner that it used to be.

Marine accident investigation is a core business within my employment, one I am actively and frequently involved with, and which is of personal interest. The prevention of marine accidents by education and training is a core principle of the Nautical Institute, an international professional body of mariners, established in 1972; of which I am a long term member and with whom I am partnering in my research. By undertaking a research project in the field of marine accidents, in partnership with the Nautical Institute, I will have access to global resources to research a global problem, will fulfill a need of the Institute, will increase the intellectual capital of my employment within a core capability, and will establish myself globally within the marine accident investigation business, thereby enhancing my career prospects within my chosen field. In addition, by undertaking this research project, I hope to put something back into my ‘community’ that will be of benefit and has given me so much.

1.2. Project Aim

Throughout my degree studies the fundamental aim of my research has been to investigate whether marine accidents and incidents are occurring due to a lack of experiential knowledge transferred by mentoring, and to provide a practical guide to mentoring that will attempt to re-establish the flow. As I reach the final phase of my studies the aim of my project is still to investigate this case but also, in undertaking this
project, I aim to engage the maritime community in a conversation about mentoring and the need to pass on professional experiential knowledge.

In the context of this research I use the term conversation to mean any means of communication available, both written and verbal, to communicate the concept. I am conscious that many of my research candidates will not speak English as a primary language and will almost certainly be of differing nationalities and cultures. These differences are a reflection of the merchant navy of today and I embrace them wholeheartedly, as my research and the products of my research must; to have any value, be ethically valid and reflect the true nature of the situation. As J. Sieber puts it “For research to be ethical, it must be valid. Invalid research is disrespectful of subject, wastes their time and produces false information”. (Sieber J. 1996.)
2. CHAPTER 2 - TERMS OF REFERENCE

2.1. Introduction

A marine accident can be one of the most traumatic events in a mariner’s life experience; any research that leads to the avoidance of even one accident is worthwhile. I believe that the increase in accidents currently being experienced, is due in part to lack of mentoring therefore, if the flow of experiential knowledge can be re-established, through this traditional and historical method, it may be possible to reduce the number of incidents occurring.

I have worked within my community of practice, the merchant navy, since before leaving school and am intimately experienced in its operation and limitations. I hold a valid Class 1 Master Mariner Certificate and have been in command of a variety of ships. During my time at sea I have been in the position of both the mentored and mentor and have benefited greatly from learning through other peoples experience; therefore I understand the value of mentoring at sea. I still work within my community of practice, although now in a shore based position as a marine consultant and accident investigator and am acutely aware of the potential consequences that a lack of knowledge can have. I am in a position to investigate this and through my partnership with the Nautical Institute, to instigate change.

2.2. Definitions

Appendix A contains a list of definitions I have used throughout this report.

2.3. Aims & Objectives

My primary Aims of Research are –

- To investigate whether marine accidents and incidents are occurring because experiential knowledge is not being transferred onboard vessels in the traditional way, by mentoring, and
- To engage the maritime community in a conversation about mentoring.

With Objectives of Research to –

- Establish what is considered the most significant lack of knowledge that leads to accidents and incidents,
• Determine the causation of this lack of knowledge, and
• Re-establish the flow of professional knowledge by providing ethical, structured and practical suggestions to mentors.

2.4. Research Statement

The purpose of my research is to show that a contributory factor to the occurrence of marine accidents, is experiential knowledge (professional knowledge gained from experiences and reflected upon) not being transferred from senior to junior officers onboard today’s merchant navy vessels by mentoring; to identify the barriers that are preventing this transfer of knowledge, and then to produce ethical, structured and practical suggestions to mentors that will re-establish the flow of knowledge.

2.5. Research Questions

To achieve my aims and objects within my research statement I asked the following research questions:

1. Is a lack of experiential knowledge contributing to an increase in accidents and incidents?

2. What is the most significant lack of knowledge that leads to accidents and incidents?

3. What is the causation of this lack of knowledge?

The data required to answer the above questions is designed to lead the research to the following question

4. How can experiential knowledge be shared in today’s merchant fleet?

Justification for my rationale of using data from three research questions to address my fourth is given by Robson ‘Multiple methods can help in other ways. Rather than focusing on a single, specific research question, they may be used to address different but complimentary questions within a study.’ (Robson C. 2002)
2.6. Research Products

When I began my degree course I discussed my initial thoughts with the Nautical Institute and they suggested that I should produce something tangible as the result of my project, such as a guide to masters on mentoring.

As I reflected on this discussion I came to realize how important it was to me for the product of my research to be beneficial to my community of practice. Robson (2002) quotes Kirby & McKenna (1989) ‘Remember that who you are has a central place in the research process because you bring your own thoughts, aspirations and feelings, and your own ethnicity, race, class, gender, sexual orientation, occupation, family background, schooling, etc. to your research’. I would add to this statement that how you have got to where you are now is also important, as reflection on the experiences of the past, will also shape the future course will take.

A draft ‘Guide to Mentoring’ is still one of the products of my research, however the book is now focused on anyone within my community of practice with an interest in the transfer of experiential knowledge to prevent accidents, and in a position to instigate change, personal or corporate. A copy of the draft book is attached to this report at Appendix B.

As a result of my research I would like to see the transfer of experiential knowledge through mentoring, highlighted and incorporated throughout the maritime community as good maritime practice, and particularly introduced to young people as they begin their careers so that the concept is infused within their career from the start. To do this, I need to widely diffuse my research findings throughout my community of practice, rather than limiting myself to one product, in the form of a book. Focused always on my primary aim, to reduce maritime accidents, I intend to take every opportunity that arises to raise awareness of my research and my findings, in the hope that everyone who comes in contact with my research will be challenged by it and, whilst not everyone will agree with my findings, or of the need to transfer knowledge, the very act of engaging with it to disagree, will raise an awareness of the concept and an engagement with my conversation.
2.7. Literature Review

Appendix C contains a review of the literature I have read, how my sourcing of information has developed during the course of my research and how literature has shaped my thinking.

Each book I have read further shapes the course of my research as I reflect on ideas that may be adaptable to my community of practice and whether I could incorporate them into my research products. I am always conscious of the need to acknowledge the work of others as although I may not be specifically citing a concept through the course of my research I have come to understand how others writing shapes (often subconsciously) my thinking.

One must not forget the books I have read prior to the project and, in particular, the knowledge I have gained from them to develop my research methodology.
3. CHAPTER 3 - RESEARCH METHODOLOGY

3.1. Introduction

The problem I have identified is not something that is going to be fixed overnight, is a dynamic problem consistent with the changing structure of manning on ships, and is likely to be found to be a secondary problem, developing from a primary problems such as fatigue, recently the subject of a major study through Cardiff University. Smith A. et al, ‘Seafarer Fatigue – The Cardiff Research Programme.’ (2006). As much research has taken place into fatigue and other primary problems, I was confident that the data was available for me to make and substantiate this link. But I needed to take a holistic approach to data collection, designed to reflect the nature of the problem, by investigating both the cause and the consequence of the loss of mentoring, and then offering a solution to the problem that is ethically acceptable in the ‘real world’. Robson (2002 pp.4) describes this as ‘seeking to say something sensible about a complex, relatively poorly controlled and generally ‘messy’ situation’.

Through this course I have come to realize that it is very unlikely that one research method will fit my needs, although that is not surprising as this is ‘real world’ research, which will require ‘real world’ methodology to be successful. A full discussion of my choice of ‘Case Study’ as my research methodology is contained in Appendix D to this report. In summary, the single case within a complex situation, I would be studying is whether loss of mentoring as a traditional means of transferring experiential knowledge onboard merchant vessels was contributing to a rise in marine accidents and incidents.

3.2. Primary Research Method

My primary research method was to be a questionnaire distributed by e-mail. Initially I considered using semi-structured interviews as one of my primary means of collecting data but, on reflection, realized that whilst it should provide the qualitative data that I seek, it was too limiting as I wanted to try and get a ‘global snap shot’ of the current situation and again, to engage the maritime community in a conversation on mentoring. To do this effectively, I needed to ‘broadcast’ the questionnaire worldwide, in a personal and ethical manner, as I did not want it to be considered ‘spamming’. But I did want qualitative data and a methodology that allowed responders to express themselves in their own words, without my introducing a bias. With this in mind, I attach a copy of my questionnaire and covering letter in Appendix E.
Due to the qualitative nature of my questionnaire, I did not expect to get a large number of questionnaires back therefore it was my intention to acknowledge each response personally with more than just a thank you; rather I hoped to have time to comment on some aspect of each response, thus showing respect for the time taken to complete the questionnaire.

To distill the data received from my questionnaire, I intended to print each response and highlight pertinent points, then look for patterns. I recognized that this methodology may not be possible if I received a substantial numbers of returns therefore was prepared to resort to more statistical, quantitative analysis if necessary.

3.3. Other Research Methods

Although my questionnaire was my primary means of data collection to address my research problem, other means were required to fulfill the requirements of my research statement. These research methods comprised:

- **Selective Case Study** – To show through selective, public reports, that accidents, incidents or near misses, are occurring due to lack of knowledge and experience, normally transferred through mentoring. Many Government Authorities, Commercial Enterprises and Professional Associations publish statistical data relating to accidents, which I intended to use quantitatively to evidence the increase in accidents. These bodies also publish select cases, generally following an accident investigation, primarily to illustrate lessons learned and as a teaching aid. I would study various cases to see if lack of experience which may have been gained through mentoring, played a part in the causation of these accidents. I was conscious that this may require a certain amount of interpretation but believed that I had sufficient knowledge and experience to do this.

- **Participant Observation** - from my own observations whilst onboard vessels seeing where lack of mentoring had lead to accidents, incidents or the potential for them, conscious always of the ethics of using data such as this and of deception issues, as my primary reason for being on the ship is NOT to collect data for my research project.

- **Non-structured interview** – To determine what used to be done, what is taking place at the moment and what would work if implemented. This would include both current and
past ship’s masters and anyone else associated with the maritime industry past or present, who will engage in the conversation as, I believe, everyone has some thing to contribute.

The above two bullets indicate an ethnographic style of research that would also allow me to triangulate the data that I was receiving from my questionnaire. It was my intention to record my data in the form of a précis in my research diary. This style of research is enhanced by my position as a practitioner researcher.

- **Literature review** – This was a continuation of the literature review I described in Chapter 2 of this report and continued to determine what other organisations were doing to encourage and facilitate mentoring and the transfer of experiential knowledge. This review will not be limited to the maritime industry, as I believe much can be learned from other totally un-connected industries. Some of the information I distilled from the literature was triangulated aboard ships during my research period and much incorporated directly into my draft book.

3.4. **Confidentiality, Anonymity & Bias**

I am conscious of the harm I could cause in certain circumstances if I was to identify a respondent within my research findings, particually if the response evidenced a professional shortcoming. From previous modules and my research to date, I am also aware of how willing most people are to share their experiences with me and allow me to use ‘sanitized’ reports to evidence my work. With this in mind, Appendix F contains full details of how I have addressed ethical issues of confidentiality and anonymity through the course of my research. A copy of the ethics release from programme planning module 4011 is also included in this Appendix.

The project that I will be researching is a global one and is manifest on ships irrespective of flag state, nationality of crew or domicile of owners. Therefore, to conduct research that is ethically acceptable required a professional, non-political approach as can be achieved by my partnership with the Nautical Institute. But I am also aware of the bias I introduced, as members of the Nautical Institute are considered at the ‘top end’ of their profession. To try and compensate for this, I also used other means to distribute my research questions, such as personally when I was onboard vessels, but I believe that I
am justified in taking this ‘top end’ approach, as I considered that the best data, capable of addressing the problem, would be found there. How I achieved my data collection is detailed in the following chapter.
4. Chapter 4 - Project Activity

4.1. Introduction

In the following chapter I will detail the process of my research as described in the methodology of the previous chapter. I will also describe the leads that have developed during my research and the way I have developed them, and a number of opportunities that have arisen to further diffuse my research findings within my community of practice. My questionnaire as attached in Appendix E has throughout been my main source of data collection.

4.2. Questionnaire Development

As previously described I wanted to collect qualitative data rather than quantative although I understood that this would limit the amount of returns I could realistically expect, however if responders were going to engage with my conversation they would need to be able to freely express themselves, within certain defined parameters. This I believed would build in a certain amount of reflection into the responses rather than a conditioned ‘tick in the box’.

4.3. Questionnaire Distribution

When I considered the distribution of my questionnaire, I was very conscious that it was the seafarers perspective of the problem that I need to be investigating, rather than a theoretical conceptualization of the problem, as it is the same people that we are going to be asking to mentor and pass on their experiential knowledge. We are all to an extent bounded in our own rationality of this problem, and this is particuallty noticeable of those seafarers who have move to employment ashore bounded in the rationality of times past when seafarers were not experiencing the problems they are today.

With the above in mind I designed a questionnaire distribution programme focused primarily on sea going personnel or those who had moved ashore but were still active within the maritime community.

Full details of my questionnaire distribution programme are attached to this report in Appendix G.
4.4. **Leads & Letters**

In addition to my questionnaire distribution I sort every lead to progress my research. This included:

1. *Letter published in Fairplay* – To further engage the maritime community in my conversation about mentoring I sent a letter to the editor of *Fairplay* Magazine. This is a widely read maritime publication from the publishers of *Lloyds List*. My letter was published and although it only generated three responses, it further highlighted my research with the maritime community. A copy of the published letter is attached to this report at Appendix H.

2. *TransNav 2009* – During this period of research I received an invitation from the Symposium Secretary to take part in 8th International Navigational Symposium on "Marine Navigation and Safety of Sea Transportation" TRANS-NAV 2009, by submitting and, if accepted, presenting a paper. The symposium is organized jointly by the Faculty of Navigation, Gdynia Maritime University and The Nautical Institute and will take place from 17 to 19 June 2009 in Gdynia, Poland. Although I was beyond the abstract registration date the Secretary agreed to delay the deadline in order for me to submit a paper abstract.

With the agreement of my employer to use this as a company marketing opportunity I submitted an abstract, which was accepted, and subsequently wrote the paper titled *Mentoring and the transfer of experiential knowledge in today's merchant fleet*. The paper is based on my research findings and a copy is attached to this report at Appendix I.

This paper took up a substantial amount of my research time but I justified this, as a step in the process of preparing a draft book as agreed in my programme plan, as the paper will form the foundation of the book.

4.5. **Other Research Methods**

**Case Study Review:**

A number of accident reports were brought to my attention within my questionnaire responses and I have reviewed these looking for evidence of lack of experiential
knowledge as a contributory factor to the accident or incident. This was not easy as generally the concept is not acknowledged as a root cause and therefore requires interpretation on my part, which is not easily validated. A good example where lack of experience was acknowledged as a contributory cause of a near miss in the English Channel, was found in the UK MAIB Report *Maersk Dover/Apollonia/Maersk Vancouver* dated 17 October 2006 and found at [www.maib.gov.uk](http://www.maib.gov.uk) A summary of that report is attached at Appendix J along with a table indicating the reports I have reviewed.

I acknowledge the experiential knowledge I have gained in marine accidents and incidents from reviewing these reports, but the value of this activity has added little to my research. I could have spent a significant amount of time trawling through accident reports from all over the world but with limited time to research, I chose to limit my search having found sufficient to support my cause.

**Participant Observation & Non-Structured Interview:**

Each time I have boarded a ship during the course of my research I am armed with more and more knowledge to triangulate, by observation and conversation. I am also conscious of the privileged (sic) position I am in and that my primary reason for being onboard the vessel is NOT to conduct research. Notwithstanding that, I have taken every opportunity to further my research either as a participant observer or by engaging in a conversation as a practitioner researcher and noting each occurrence down in my reflective diary, informed throughout by ethnographic concerns. My role as a practitioner researcher is enhanced by my position onboard the ship as a professional and experienced mariner. As an example of this valuable style of research, extract 1 of my reflective diary in Appendix K evidences the value of being a participant observer, as I experienced a language barrier stalling a flow of experiential knowledge.

**Literature Review**

I have continued ‘to read around the subject’ during my research and I am able to triangulate this knowledge onboard the ships, as I discuss knowledge transfer, often at senior management level. I have discovered various shipping companies that have taken this subject seriously, one that employs ‘knowledge brokers’, as an example. This concept, in a different context, is discussed in ‘Lost Knowledge – Confronting the Treat
of an Aging Workforce’ DeLong D. (2004) and evidences the way, through synthesis, that a practical methodology of experiential knowledge transfer can be introduced successfully within the maritime community.
5. **PROJECT FINDINGS**

5.1. **Introduction**

In this chapter I will present and interpret my findings in the context of today’s merchant navy. Through this section you will note un-cited comments in italics, these are taken directly from my research data and, whilst due to agreed confidentiality, I can’t name the responder, I gratefully acknowledge their contribution by engaging in this conversation.

5.2. **Demographics**

I received 60 completed questionnaires and 15 other responses, including 6 papers written on related subjects. I am unable to express this as a percentage of the number of questionnaires sent out as, due to the method of transmission, I do not know how many were received, but can safely say that it is a low response rate.

The following lists the occupation of the responders:

- RANK
  - MASTER: 17
  - CHIEF ENGINEER: 2
  - CHIEF OFFICER: 1
  - PILOT: 4
  - MARINE CONSULTANT (M): 15
  - MARINE CONSULTANT (E): 4
  - EDUCATOR: 7
  - MARINE INVESTIGATOR: 2
  - MARINE MANAGER: 2
  - NAVAL OFFICER: 2
  - RISK MANAGER: 1
  - MARINE PROJECT DIRECTOR: 1
  - MOORING MASTER: 2

Of particular note in the above list is that of the 60 responses received, 26 came from serving mariners, nearly 50%. I was encouraged by this as I particullarly wanted a 'snap shot' view of the current situation at sea today and believe that this response evidences that I have achieved that. I only received one response from a mariner who had (recently) retired; therefore my responders are not bounded in the rationality of times past.

Of the above list 7 educators responded and all expressed a desire to continue the conversation in the future. One of the aims of my research was to bring the concept of mentoring and experiential knowledge transfer to the attention of young seafarers as
they begin their careers and this I will be able to achieve through contact with these educators.

The majority of the marine consultants that responded to my questionnaire were my colleagues from various company offices around the world. Only a few senior members of staff responded, the majority being in a similar position to myself, but all have held a senior position at sea and all, like myself, are routinely onboard ships on a regular basis. This further evidences the currency of my research.

5.3. Is it really a problem?

![Pie Chart](image)

Fig. 1 – Are accidents and incidents arising due to lack of experiential knowledge transfer?

Fig.1 shows the distribution of answers to the question ‘In your opinion, are accidents and incidents arising due to lack of experiential knowledge transfer?’ Un-surprisingly the answer was a resounding yes as I did not expect many (if any) responders to answer no and still take the time to complete my questionnaire, but this did happen with 5 responders answering no and each justifying their answer.

I was pleased to see that 19 of my responders replied that it was a contributory factor. In this question I provided a simple Yes / No answer, but many chose to elaborate on this. In my opinion, this response evidences that the responders understood and engaged with the questionnaire right from the start. It also further evidences, as I have
already discussed, that the problem may be a secondary problem stemming from primary problems.

5.4. Most Significant Lack of Knowledge

‘Up to 70% of skill is learnt from experience’ Trautman S. (2007). It is this maritime skill pool that I believe is not being passed on in the way it used to, by mentoring. With this in mind, and having determined, by my first question, that insufficient experiential knowledge transfer is considered to be contributing to accidents and incidents, I went on to find what is considered to be the most significant elements contributing to this lack of professional knowledge in today’s Merchant Navy.

I must be honest; when I began this research I expected to see the now common themes of, application of collision regulations, standard of certification training and reliance on electronics, to name a few, to be the most prominent response to the question I posed; ‘what, in your experience, is the most significant lack of knowledge, that leads to accidents and incidents?’ As you will see in Fig.2 below, these expected responses did occur, but not as a significant number, approximately 53% of my responders cited elements that I have collectively grouped as, lack of ‘feel’, seamanship, intuition, practical knowledge and experience.

![Fig.2 – The most significant lack of knowledge that leads to accidents & incidents](chart.png)
What are these 53% of responders actually referring to? This from a respondent, ‘Whilst much can be taught at college about ‘seafaring’ it has to be complemented by practical advice from senior personnel, however for the advice to be understood the recipient needs to have (for want of a better word) a ‘feel’ for seafaring.’

In the sense the verb ‘to feel’ is synonymous with ‘to experience,’ I believe that these responders are articulating the same lack of experiential knowledge that I am referring to. The following examples from my questionnaire responders further evidence this theory:

- ‘Ship’s officers have ceased to be trained to think and act independently, make decisions based on their own judgments and be accountable for them,
- Modern seafarers lack a ‘feel’ for the sea,
- Inability to act intuitively, and
- The inability of modern officers to use their own senses, such as sight and sound and their brains to make decisions.’

Experiential knowledge is not something tangible, nor is it a subject that can be taught in college, although the concept should be addressed and the candidates encouraged to participate in experiential knowledge transfer. It is, as one of my consultant colleagues so sagely puts it ‘those gems of wisdom that are passed on during an operation, and that consolidate theoretical knowledge.’
5.5. Causation of Lack of Knowledge

My next question asked ‘what is the causation of this lack of knowledge’? This question provided much more balanced results and Fig.3 below displays the eight top answers:

![Causation of lack of knowledge diagram]

In this discussion it is the first four responses I want to concentrate on, as they represent approximately 54% of the responses to this question and again, I believe they indicate inadequate experiential knowledge transfer. Taking each in turn, and with the data I have gained from all my methods of data collection, I will discuss how I believe each causation is affecting the transfer of experiential knowledge:

Demands on Masters / Senior Officers time-

‘Officers are struggling to keep their heads over the growing responsibilities and additional paperwork that has come about due to the additional requirements that have come about in the last decade.’

‘Machines have many qualities but common sense isn't one of them. And common sense is lacking in too many seafarers today. The Master has a vital supervisory role of support of the OOW and this role is being neglected by the demands of the “office” on the Master’s time.’
From my own experience I am in no doubt that the Senior Officers onboard today’s ships are far busier than they were in say the 1980’s when I was deep sea. I am at times both shocked and dejected to see the changes that have occurred to the merchant fleet, or more specifically to the mariners onboard today’s ships, as they struggle to comply with the everyday requirements of running a modern merchant vessel.

‘Lack of time onboard due to fatigue of Officers.’ Much has been written about the effects of fatigue including some very good papers - ‘Seafarer Fatigue – The Cardiff Research Programme.’ Smith A. et al (2006). There is little doubt that fatigue is a primary cause of accidents but consider for a moment the effect it is having on mentoring; how many of us due to work commitments have time as fathers for our own children? At times during a voyage seafarers are often so tired that they can barely stand up, let alone take time out to show a junior officer again how to do a relatively simple operation. But that opportunity for knowledge transfer has passed and may not be re-created prior to the incident! Extract 2 from my reflective diary in Appendix K contains a personal recollection of how tired a seafarer can get and the dangerous situation that resulted.

‘Masters, Officers are so busy with paperwork that they have no time to observe the crew during their work. If I spend the day on deck when am I going to complete my other jobs, when am I going to sleep and what about STCW?’

This is an interesting comment, although I know that this responder was referring more to hours of rest than when was he going to find the time to be a mentor. So what about STCW¹ and the transfer of experiential knowledge - are there any provisions for the inclusion of this concept within the convention? I cannot find any reference that specifically looks at the knowledge sharing that I am referring to - but that does not come as a surprise - however, much is said about training and the minimum standards required for certification and it may be possible to incorporate the concept within future amendments to the training, in the form of a structured training programme which I will mention further in this section of my report.

¹Standard of Training, Certification & Watchkeeping 1995 (STCW 95) is a convention adopted by The International Maritime Organisation (IMO); signatories to the convention agree that seafarers of their nations will comply with watchkeeping certification standards, incorporated within the convention.
‘Knowledge altruism is real and can be encouraged. It flourishes in organisations that hire nice people and treat them nicely. We constrain it though by increasing demands on the time and energy of employees and by cultural factors.’ Davenport T. & Prusak L. (1998 pp.34)

Multi national / cultural crews

This is always a difficult subject to approach and articulate but I believe that it does affect the transfer of experiential knowledge and therefore must be addressed in an ethical manner, supportive of the current regime.

‘Much can be traced back to the huge changes that took place in the industry in the early 1980’s. Initially the ship owners continued to employ senior officers from traditional maritime nations but employed cheaper junior officers and crew. This resulted in an almost complete break in the flow of knowledge to seafarers who they believed would take their jobs’. This responder goes on to comment ‘as things have progressed and the number of experienced officers and crew has diminished, there has been a tendency for crewing agencies to hire a crew of many different nationalities. On individual ships this has sometimes resulted in an almost complete breakdown in the inter-personnel communication.’

In some ways I am glad to say that the 1980’s are now well behind us and, in most cases, we have moved on from the attitude described above. Appendix L contains a brief commentary on the decline of the British merchant fleet in the 1980’s.

During the course of my work and my employment in general I spent a significant amount of my time onboard merchant vessels crewed by a staff of mixed nationalities and, with respect to the difficulties sometimes observed, believe that the problems actually lie far more with a language barrier than with a cultural barrier. As I have undertaken this ethnographic style of research I have also noted that the problems seem to be far more prevalent on vessels with two nationalities rather than those with many. This is, in my opinion, due to the necessity to communicate in a common language on a multi-national crewed ship, whereas with those of just two different nationalities, there is a tendency for each nationality to communicate in their mother tongue and to only
converse between the two in a common language when necessary, in essence, de-
voiding the vessel of any social communication between the nationalities.

Davenport T. & Prusak L. tell us that ‘Human beings learn best from stories’ (1998
pp.81). Consider how much experiential knowledge can be gained by just listening to
people talking about a problem, or telling a story to share knowledge, if they are talking
in a language you understand, and conversely, how much is lost if they are not. They go
on to state (pp.98) ‘Research shows time and again that a shared language is essential
to productive knowledge transfer. Without it individuals will neither understand nor trust
one another’.

Rapid promotion:

I have looked at the new foundation degree offered by the UK for training of candidates
for their first Officer Of the Watch (OOW) certificate and it looks very familiar. It is a
three year, five phase course, very similar to the one I embarked on in 1980 although I
achieved an HND and now the new officer will achieve an honors degree, in keeping
with many of the other maritime training establishments around the world. (RAL 2007).
Further, the UK Maritime Coastguard Agency (MCA) reminds us; ‘Master and Officers
need to know that the standards expected of the candidate (when competence is
reached) is that of a person about to take up the job for which the award is made.
Cadets are expected at the end of their training to be competent to start to undertake the
job of watchkeeping officer, but they will clearly be lacking in experience.’ MCA (2008).
So what is the problem that so many responders are referring to?

‘The manning agents get one or two good reports about someone’s performance, and
they are fast tracked for promotion – often beyond their capabilities. On the reverse side,
I have seen some junior officers demanding promotion after one or two contracts in a
particular rank – or threatening to leave – regardless of whether the senior officers
believe they are suitable.’

‘Lack of time in the long term meaning of the word. Promotions are happening very
quickly, people do not have time to experience their knowledge and are being moved
one rung up the career ladder.’ This is an interesting conceptualization of the learning
process where people are not in a rank long enough to ‘experience their knowledge’ or
perhaps to expand their knowledge base sufficiently with experiential learning to move on to the next rank.

‘Many officers today are promoted quickly and as a consequence, lack the foundation of a proper knowledge base’.

‘The lack of skilled seafarers has also resulted in a need to employ people who would previously have not been considered as being suitably experienced for a particular rank.’

In answer to this question the respondents who referred to rapid promotion spoke of promotion between ranks and not the length of time that it takes a seafarer to achieve his/her first watchkeeping qualification. Therefore I believe we can assume that initial training is still adequate and that there is further evidence that it is the experiential knowledge, traditionally gained between ranks, that is missing.

**Poor training / lack of basic knowledge**

‘Lack of time for informal training – Undermanned ships and over worked staff prevents mentors to take time off their busy schedule and take personal interest in training of juniors.’

From the previous quotes discussed earlier it does not appear to be the initial college training that respondents are referring to, but the training that they receive onboard ships. This, I believe, further evidences the need for all of us to have this conversation and to determine how we are going to share experiential knowledge again.

### 5.6. Sharing of Knowledge

‘Experience changes ideas about what should happen into knowledge of what does happen’ Davenport T. & Prusak L. (1998 pp.8). With thoughts such as those in mind I asked my final question ‘How can experiential knowledge be shared in the Merchant Navy of today?’ This was the culmination of the questionnaire as the three previous questions were designed to lead to this one and the data I have gathered, provided me with 33 specific suggestions that can be used to share knowledge in today’s merchant navy. A list of these suggestions is contained within Appendix M.
Unsurprisingly, it is mentoring that is the top answer and in this respect I acknowledge the bias I may have introduced with my questionnaire. However, having distilled the comments I am confident that if mentoring would not work at sea today my respondents would have told me so. Therefore, I believe that this response evidences the need to reintroduce the concept of mentoring.

I also note the number of single responses and I believe this evidences the uniqueness and value of this style of questionnaire. Twenty of thirty-three suggestions for sharing information are only mentioned once; yet consider one response as an example, the value of a suggestion ‘to put accident and incident reports in with the Notice to Mariners’\(^2\). If I can find an institution that will take up this idea the knowledge sharing derived from this one suggestion will be huge.

5.7. Distillation of Data into Research Products

Throughout my research I have always been very conscious that personally I had to produce something useful and practical at the end of it, ‘in undertaking this research project, it is my desire to put something back into that ‘community’ that will be of benefit’ Programme Planning Module 4011 (2007). A copy of the paper I have produced titled Mentoring and the transfer of experiential knowledge in today’s merchant fleet is attached to this report in Appendix I and a copy of the draft Guide is attached at Appendix B.

It is within these products that I have distilled my research findings to date, not just from this section, but also from my case study research as a whole and from my own experience, shaped by the knowledge I have gained from my degree programme. I would caution that none of these suggestions must be allowed to increase the seafarers’ workload. They must be incorporated within the current daily operations as cultural and procedural changes or developments, introduced ethically and quietly at every organisational level.

It is my intention to further diffuse my research through every level of my community of practice and to continue this conversation well beyond my degree studies. With the

\(^2\) Notices to Mariners are produced weekly and contain chart corrections and other important navigational information. Every merchant vessel is required to receive these and update their publications accordingly.
support of the Nautical Institute I would like to see the concept of mentoring and the transfer of experiential knowledge addressed as a training principle, with a requirement for officers to undertake (practical) set tasks successfully prior to promotion, as part of a structure training programme incorporated into the STCW legislation. At the other end of the scale, I would like to see the concept introduced to senior ratings, who have so much to offer their juniors. This may be in the form of a poster campaign sponsored by the P & I Clubs and I am currently discussing the options for this with various clubs, on an informal basis.
6. CONCLUSIONS & RECOMMENDATIONS

6.1 The data I have collected through the methodology I employed, has sufficiently evidenced that lack of experiential knowledge, traditionally passed by mentoring, is a contributory cause to the occurrence of accidents and incidents. It is not a primary causation of accidents but a secondary cause, arising out of primary causes and therefore unlikely to appear as a root causation of accidents, within today’s accident investigation regime. By raising the profile of this concept within the maritime community and, more specifically to those engaged in accident investigation, it may now be more readily acknowledged as a contributory, and therefore recordable factor.

6.2 The most significant lack of knowledge that leads to accidents and incidents in today’s merchant navy is determined to lie within non-tangible elements; I collectively grouped as, lack of ‘feel’, seamanship, intuition, practical knowledge and experience. Responses received during my research evidence that these collective elements are describing lack experiential knowledge; the subject of this research.

6.3 The causations of this lack of knowledge are several and often inter related, generally resulting from primary known factors such as fatigue. By determining what is considered to be the most significant factors affecting today’s merchant fleet I am now in a position to provide practical suggestions to seafarers and any one concerned with shipping on how to establish mentoring as good maritime practice.

I have developed leads with educators that will allow young people just starting their sea going careers to be educated in how to get the best from their mentors, for I believe that my conception of the ‘transfer of experiential knowledge’ is an essential component to other forms of professional knowledge derived from subject-based knowledge. It is ‘those gems of wisdom that are passed on during an operation, and that consolidate theoretical knowledge.’

6.4 The research has been conducted in an ethical manner without causing harm to any of the responders and has provided the confidentiality and anonymity required for responders to feel comfortably able to share their experiences. This has developed a distribution template for the practical suggestions I have presented. If mentoring and the
transfer of experiential knowledge is conducted in the same ethical manner as this research was conducted, mentors and their candidates should feel the same confidence in their implementation, particularly if the candidate is in a senior position.

6.5 From the responses that I have received both through my questionnaire and other research methods I can conclude that the maritime community is now sufficiently engaged with my research to continue the conversation beyond the scope of my MA studies. Leads have developed which will enable me to further address the maritime community about mentoring and, will enable me to become further established with in my community of practice and in my field of accident investigation.

The research has also raised the profile of the Nautical Institute as a professional institution, sympathetic to the value of and necessity for mentoring and the transfer of experiential knowledge, within the maritime community. Through this continuing partnership I have developed a vehicle capable of fully infusing my research recommendations at all institutional levels.

6.6 Is it too late? As my research suggests it certainly is a challenge, especially when it is the most senior officers that lack the experiential knowledge. But on the plus side I have also determined that it is a problem that can be solved and where anyone can instigate change, whatever their position. It does not have to be much, but it may just be that ‘gem of wisdom’ that makes the difference in somebody’s life and prevent a maritime disaster. Some experiences are good and some are bad, but the knowledge that comes from those experiences can only ever be good. I personally believe that, as masters of our various trades, we have a traditional duty to pass on our knowledge through mentoring (or whatever you want to call it) and to put something back into our community of practice that has given us so much. I conclude that by undertaking this research with the support of my partners I have achieved this. For, whilst this is but ‘a drop in the ocean - oceans are made of drops.

6.1. Word Count

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REFLECTIVE ESSAY

As an introduction to my final reflective essay it is interesting to reflect on where I was three years ago as I began my MA studies and where I am now on their completion. My aim when I began this course was to gain an academic qualification that formally acknowledged the value of my maritime studies and, to put something back into my community of practice, of which I have been a member since the age of 12.

Three years on as I complete my studies and subject to marking and acceptance, the tangible products of my research are:

- A master of arts degree,

- A draft of an outline book titled ‘Pass it On!’ focusing on mentoring and the transfer of experiential knowledge in today’s merchant Navy. This includes a potential book deal for publication with the Nautical Institute, and

- A paper titled ‘Mentoring and the transfer of experiential knowledge in today’s merchant fleet’ prepared for publication and presentation at a major navigation and safety symposium in Poland in June 2009.

But I have achieved a lot more than these tangible products. By undertaking this research I have engaged the world wide maritime community in a conversation on mentoring. By raising this concept through my questionnaire and whilst onboard ships, I have caused a significant number of mariners and others, in a position to undertake experiential knowledge transfer, to reflect on their position and what they can achieve and I hope, to instigate change. As David DeLong (2004) puts it ‘the behaviors of those who have critical knowledge must be aligned with the organisational needs.’ I have shown the need for mentoring and, if we agree that learning is a life long experience, we should be challenged not only to continue learning but also to pass that learning on.
At the end of the course it is also time to reflect on what each member of my tri-partite partnership has gained from the research:

**Myself:** Within the time and space constraints here I can only reflect holistically on what I have personally, outwith authoring the tangible products described above, gained from this course.

There is no doubt in my mind that the most significant asset of knowledge I have gained is the ability to critically reflect. ‘*REFLECTION — The action of the mind by which it is conscious of its own operations*’. Chambers 20th Century Dictionary, New Ed. (1983). In RAL (with help) I determined that reflection was akin to sitting on top of a hill and looking down on your career to date. This skill now permeates every aspect of my life, both personal and professional. Any type of decision making now requires a certain amount of reflection but this does not make me any less decisive, it just help me make better decisions. Further, as I reflect on decisions I have made from all aspects I can become comfortable with what I have chosen to do, if it was the wrong course of action then I have the *experiential knowledge* to take a better course of action in the future.

The consideration of ethics within everything I do is another significant asset I have gained. I have always been principled and considered this an important personal quality, transferable by example. But ethics is far more than this and is closely associated with reflection, for one must reflect on ones proposed actions to determine if they are ethical. As an example consider the recent research I have undertaken, and the potential to do harm with research such as this. By identifying a respondent who is critical of an employer or a respondent who has ‘confessed’ to a professional shortcoming I could have ruined a career. With this in mind I have had to very carefully consider how I would distill the information I received both through my questionnaire and ethnographically whilst onboard ship, conscious always that I was onboard in a professional capacity and not to undertake research (one of the ethical considerations of being an insider researcher). The project report fully identifies how I went about distilling the information. Through the methods I adopted, I believe I maintained confidentiality throughout, anonymity where requested and perhaps most important, I am confident that I conducted this research ethically and without causing harm.
It is hard to delineate what I have learned over the duration of the course. Notwithstanding the above, I have gained a vast amount of knowledge particularly about knowledge itself. What knowledge is and how it is transferred has been a foundation of my research and much of this knowledge has come from the literature I have studied. When I began this course I expressed concern that I may not be able to find the information I sort. On reflection, this was because I was not looking properly. Module 4025 taught me to look for information efficiently, particularly in identifying sources of methods of knowledge transfer, and I have now read a substantial amount of subject matter not only shaping the course of my research but in parallel, synthesizing how the methodology can be used in today’s merchant navy.

As further evidence of my learning I like to use the example of bounded rationality. I can be quite honest and say that this is a concept I knew nothing about prior to starting my degree. Extract 3 of my reflective diary in Appendix K evidences how I believe bounded rationality affects the decision making of a navigation officer and how experiential knowledge transfer through mentoring can expand the bounds of the officers rational, leading to better decision making and perhaps the avoidance of a maritime accident.

Throughout this course I have remained focused on the level 4 standards and requirements as described in the subject handbook. I believe I am now working at those required standards both within and outwith the course. Further, as I diffuse the results of my research through my community of practice, I am conscious that, to properly establish a practical, efficient and ethical system of mentoring onboard vessels, I may have to move beyond these levels and I am both encouraged and challenged by this.

**The Nautical Institute:** When I planned this project in 4011 I proposed that:

‘The NI will have a draft guide to mentoring and a project that looks at another aspect of the human element within marine accidents, hopefully linking the two. Through the NI we will be able to pass on skills, knowledge, training and advice that may potentially avoid a casualty. This is in keeping with their current strategic plan. The guide may help raise the profile of the Nautical Institute amongst other professional bodies. With members within virtually all maritime organisations and at every level of the establishment, I hope that the subject of mentoring may become a discussion point
amongst them, and that consideration may be given to incorporate the concept within current training programmes.’

I believe that I have fully completed my expressed obligations to the Nautical Institute in undertaking this research. I have enjoyed full support throughout my studies including critical evaluation of my progress and have recently been granted unconditional use of the Nautical Institute logo, at my discretion, as I disseminate my research findings and subsequent publications.

When I began my research I was ‘seeking to say something sensible about a complex, relatively poorly controlled and generally ‘messy’ situation’ Robson (2002 pp.4). I have become far more involved with the Nautical Institute as now I have some thing sensible to say, evidenced by a recent contribution I made to a council meeting where I was able to suggest that the Nautical Institute create a training guide for officers, to link their cadetship training to the NI command diploma scheme and to use the proceeds of this to fund membership at IMO, rather than raise subscriptions. As an aside, I copied this suggestion to our local branch members and this produced a very heated exchange. Once again, I was engaging mariners in a relevant conversation on the practical methodology of training in today’s merchant navy.

**University:** When I planned my programme (4011) it was hard for me to see how the University would benefit, other than the fees I have paid, from my research. I did identify a number of ways including:

‘The University would gain credit within the publication raising their profile within the maritime industry, and further potential students. They would also gain an interesting accumulation of (marine) legal as well as coaching / training knowledge and an awareness and understanding of the current maritime situation.

The standards, requirements and ethical considerations of the University will have been met. The University would gain a potential Mentor for future students undertaking work based learning studies of a similar nature to mine, and a source of professional knowledge about the maritime industry.’

As with the Nautical Institute, I believe I have met the agreed objectives. The University has gained recognition from my studies and this will increase as I further diffuse my
findings. A number of mariners who like myself seek accreditation for their professional qualifications have expressed an interest in the program and I have (and will continue to) encourage this. I am willing to act as a mentor to those who come after me and may require help as they undertake their studies.

The Nautical Institute has suggested that we create a database of research subjects, at Masters and Doctorate level, that would be of benefit to the maritime community. I would like to link the University with this, perhaps through a Memorandum Of Understanding (MOU) or similar agreement and will progress this in the near future.

**Employer:** I have valued the programme as a whole and in particular, the flexibility that has enabled some one like myself to successfully undertake a master's degree, unsupported by my employer. However, it is still very important for me to reflect on the effect this has had on my employment for, although I have not received any financial contribution to this program, I am conscious of the contribution my place of work has had to my ultimate success in completing the programme.

This was particuallly noticeable in RAL and the credit I received from my portfolio. Further, the ethnographic research I have undertaken and the opportunity to triangulate knowledge whilst onboard vessels in the course of my employment, would not have been possible if I had not been employed in the same manner. Extract 1 of my learning diary in Appendix K evidences how useful being onboard a multi-national vessel could be in triangulation of knowledge as I experienced first hand a language barrier to knowledge transfer.

Throughout the programme I have continued to increase my professional knowledge within the field of marine accident investigation; this knowledge is being passed throughout the organisation and has increased our knowledge capitol. In time, as my research is diffused through the maritime community, I hope to become better know in my field and thus enhance my chosen career.

Ethics within the workplace, both from the knowledge I have gained and from my position as an inside researcher, is now incorporated within my own work and disseminated through the workplace, by example.
Although acting in partnership with the Nautical Institute in this programme I have also been recognised as working for my company, when contacting other establishments during the course of my research. Each contact has promoted our professional capabilities and enhanced our marketing strategy. I have been able to establish the company as an affiliate in my paper and subject to acceptance, they will be acknowledged as supporting my research and as a concerned party in the prevention of marine accidents.

Extract 4 of my learning diary in Appendix K further evidences the value my studies have had on my employment.

As I reflect holistically on my programme I am conscious of how I could have done things better with the experiential knowledge I now have. I regret negotiating an initial limit of just 6,000 words for my project report, as this is just not enough to do it justice, although it was agreed to increase this limit latterly. This required me to put much of the report in Appendix, which I believe disrupts the flow of the report. On reflection, I would have been better keeping to the 12,000 word limit and limit the use of Appendix to primarily the products of my research.

Prior to beginning this reflective essay I read through my diary again and am conscious of the amount of (book) material that is contained within it. Each time I had a good idea I jotted it down in my diary for later transposing into the book. Extract 5 of my reflective diary in Appendix K evidences one of these good ideas with the citation that brought it about. On reflection, I would have been better to put these ideas straight into the draft book and better evidence the amount of material I have developed. However, I look forward to doing this next and perhaps using the book development to further academically advance.

In conclusion, as I reflect as a mariner on my MA studies as a whole, I am conscious of how similar it is to any voyage I have undertaken in the past. When I set off I was aware of the final destination but not what I would encounter along the way. There have been the highs and the lows and now, at the end of the voyage I feel the same excitement, even down to seeing my family again after such a long time!
But, as perhaps only a seafarer would understand, I also feel a disappointment as it is over and I am going back to the ordinary life I left behind. But that in itself is challenging, as like any mariner stepping ashore you cannot go back to where you were. Things have moved on and so have you. I do not feel trepidation as I step back into the real world as I am better able to deal with life’s challenges that I have ever been and I am already excited by the prospect of the next voyage, after a period of leave.

By undertaking this research I will not only achieve a personal goal of gaining a post graduate qualification but I have gone some way to repay the debt I owe to my community of practice and to the Mentors who have helped me along the way.

For me, learning is a life long occupation and as masters of our trade I believe we have a traditional duty to pass this learning on. With the continuing support of all involved I intend to do this armed with both the academic and experiential knowledge I have gained over the last three years. As I move on I gratefully acknowledge the help (without designated reward) that I have received, as together, I believe we can make a difference.
REFERENCES & BIBLIOGRAPHY

The following publications have been referred to in the preparation of this report:


APPENDIX "A"

DEFINITIONS
APPENDIX A - DEFINITIONS

Throughout this report I have used the following definitions:

**Candidate** — Anyone receiving experiential knowledge by mentoring.

**Experiential Knowledge** — I have defined this ‘as knowledge gained from professional ‘on the job’ experiences and reflected upon.’ This knowledge can come from a wide variety of sources or experiences but, in my opinion, it often has the most impact when it comes from an accident, incident or near miss; however it does need to be reflected upon before it can become experiential learning.

**Mentor** - The Oxford English Dictionary (1983) describes a Mentor as ‘an experienced and trusted adviser’ and sources the origin of the word as ‘from the name of Mentor, the adviser of the young Telemachus in Homer’s Odyssey.’ In the context of my research I have simply defined it ‘as the possessor and distributor of experiential knowledge.’

**Mentoring** - ‘Mentoring is a form of knowledge transfer based in part on altruism’ Davenport T. & Prusak L. (1998). I like this definition as, for me, it sums up the unselfish act of knowledge transfer that I myself benefited from in my early days at sea. For the purpose of my research, I have followed this theme and defined mentoring as ‘the act of sharing knowledge without a designated reward’, which definition in itself has caused a certain amount of debate, but I believe it suffices.
APPENDIX "B"

DRAFT OUTLINE OF BOOK ‘PASS IT ON!’
APPENDIX "C"

LITERATURE REVIEW
APPENDIX C - LITERATURE REVIEW

Through the course of my literature review I have found little evidence of any similar research to mine. Mentoring is infrequently mentioned through the nautical publications I read on a regular basis. *Fairplay Daily News*, an electronic condensed version of *Lloyds List* and *Seaways*, the monthly journal of the Nautical Institute, have both carried short articles on the subject of mentoring over the last few years. Whilst these infrequent articles did little to shape the course of my research, I found them encouraging as it evidenced that ‘I was not alone’ in my belief in the importance of mentoring within my community of practice.

When I began my literature research I was very focused on mentoring and, whilst there are many books written on the subject, I was not gaining the knowledge I was looking for, namely the transfer of experiential knowledge through mentoring, particularly within my community of practice. I reflected on this problem and concluded that perhaps the use of the word mentoring was causing the difficulty, as one could easily substitute the word with coaching or teaching, although this would not fit my definition of *without designated reward*. This led me to start looking for literature related to knowledge transfer and experience.

As an example on 15th January 2008 I put ‘transfer of experiential knowledge’ into the Google search engine and came up with the book title ‘Lost Knowledge – Confronting the Threat of an Aging Workforce’. David W. de Long. (2004). I obtained this book and realized that this was the style of literature I was looking for as, *inter alia*, it contained sections on:

- The use of storytelling as a primary vehicle to transfer knowledge,
- Expert knowledge locators, and
- Barriers to interpersonal knowledge transfer.

Whilst the subject matter was not specifically focused on my community of practice it is a relatively simple task to distill the information and by synthesis, adapt it to the maritime community. As my research developed and I gained knowledge from my literature review I became aware that a number of shipping companies had already addressed the concept of experiential knowledge transfer and had taken action. One such company employs knowledge brokers. O’Dell C. *et al* (1998) in their book *If only we knew what we knew* describe one of the barriers to knowledge transfer as ‘Hidden knowledge – People don’t know what they know or that someone else wants it.’ By employing knowledge brokers successfully this company has gone a long way to breaking down this barrier.

Appendix K contains extract 6 from my reflective diary for 20th July 2008 and evidences how I identified how to start the flow of experiential knowledge, as a need based concept base onboard ship, this based on ideas by Steve Trautman’s book *Teach What you Know* (2007), an extremely useful publication.

There has proved to be a substantial amount of useful literature available once I understood what I was looking for. By synthesis many of the concepts I have read can
be adapted for use to transfer knowledge in today’s merchant navy and ultimately at the
end of my research I too will be contributing to the literature capital.

One must not forget the books read for prior modules particularly those on research as
these too have shaped my thinking during the course of my research project. Appendix
D contains a discussion on why I have chosen Case Study as my research
methodology. This discussion and justification is primarily based on information gained
from familiar books, particularly Robson (2002). I enjoyed returning to these books, as I
knew they contained the information I was looking for.
APPENDIX "D"

DISCUSSION OF CASE STUDY AS A RESEARCH APPROACH
Choosing my research methodology was perhaps the most difficult part of my project and caused me the most concern. Not because I could not decide how to conduct my research but more to find a category that my, what initially appeared to be unique approach, would fit in.

I wanted the research methodology to develop as the research progressed and that the data I would collect would be in the form of words rather that numbers, that, according to Fox et al (2007 pp.116), indicated a flexible design rather than fixed.

‘Quantative researchers collect facts and study the relationship of one set of facts to another…. Researchers adopting a qualitative perspective are more concerned to understand individuals’ perceptions of the world.’ Bell J. (2005 pp.7).

I have opted for a qualitative perspective as described by Bell and, in my research I will primarily use qualitative data, however I will use quantitative data to support and add impact to my findings. Rational for this comes in part from Fox et al who state, “The key goal is to use the strength of one method to enhance the impact of the other. So information gained from one part of the study (either quantitative or qualitative) is used to strengthen the other aspects of the research. This is important to practitioner researchers who are often working on complex, multifaceted issues.” (Fox M. et al. 2007 pp.22).

Having determined that I required a flexible design collecting qualitative data I considered the methods I would use to collect my data. These included:

- Questionnaires
- Selective case study of accidents and incident reports
- Participant Observation
- Non-structured interview, and
- Literature review.

To encompass all the above research methods I would need a ‘multi method’ Robson (2002 pp.92) strategy. My research does not lend itself easily to action research, as I do not see any change being implemented by enforcement such as by legislation. Change will come from identifying the problem and providing a cost effective and ethical approach to its solution. This is one of my reasons for partnering with the Nautical Institute as they are in a global position to highlight the problem without political or commercial interference.

Reflecting on the problem I am addressing and the solution I have proposed I believe that a ‘soft’ approach is far more likely to produce the required results than a ‘hard’ approach such as with Action Research; I want people to engage with my research and to enter into the conversation. With this in mind I looked closely at Soft Systems Methodology which as Checkland and Scholes describes ‘The basic shape of the approach is to formulate some models which it is hoped will be relevant to the real-world situation, and use them by setting them against perceptions of the real world in a process of comparison. That comparison could then initiate debate leading to a decision to take purposeful action to improve the part of real life, which is under scrutiny.’ Checkland & Scholes (1998).
On reflection, this approach is too complex for what I am trying to achieve by producing just one model, but the basic principle is correct.

Use of a questionnaire as my primary research tool naturally led me to consider survey as a research approach however Judith Bell (2005 pp. 13-14) reminds us inter alia that:

‘Great care has to be taken to ensure that the sample population is truly representative, All respondents will be asked the same questions in, as far as possible, the same circumstances, and Surveys can provide answers to the questions What? Where? When? and How?, but it is not so easy to find out Why?’

It is my aim to conduct much of my research through the Nautical Institute. However, I am conscious that only a very small proportion of the maritime community are members of the Nautical Institute and of the (financial) commitment required to belong. This may introduce a bias to my research, as the sample population is not representative of the global maritime community however my approach will be justified in researching best practice and diffusing the research findings throughout the maritime community.

I do intend to ask the same questions of my respondents however in a widely differing circumstances as possible as I wish to gain a ‘snap shot’ evaluation of the perceived global problem. This research would, in my opinion, be useless if I did not provide practical and ethical solutions to the problem I am researching. Therefore the ‘How?’ question will be extremely important in my research.

In rejecting survey as a research approach I note that Robson (2002 pp.87-89) does not list it as one of three approaches partically relevant to real world solutions, instead listing ‘case studies, ethnographic studies and grounded theory studies.’

In real world research such as this, and with the facilities available to me for research, it seems very appropriate to combine approaches, thus providing a more holistic approach to the problem. With the above in mind I have concluded that a Case Study approach would be the most appropriate to my research project. As Bell describes it “All organizations and individuals have their common and unique features. Case study researchers aim to identify such features, to identify or attempt to identify the various interactive processes at work, to show how they affect the implementation of systems and influence the way an organization functions”. (Bell J. 2005 pp.10).

Robson (2002 pp. 545) in his glossary describes case study as ‘A research strategy focusing on the study of single cases. The case can be an individual person, an institution, a situation etc. As used in this text, case study design studies the case in its context, typically using multiple methods of data collection. Qualitative data are almost always collected; quantative data collection can also be used. In the context of my research we know that the incidence of marine accidents and incidents is increasing. We also know from previous research some of the primary factors that are causing this increase. Within this context the single case I will be studying is whether loss of mentoring as a traditional means of transferring experiential knowledge onboard merchant vessels is contributing to this rise in marine accidents and incidents.
APPENDIX "E"

QUESTIONNAIRE & COVER LETTER
APPENDIX E – COVER LETTER & QUESTIONNAIRE

Cover Letter:

The following is a pro forma covering letter I sent with each of my questionnaires. When possible, this letter was personalized to the receiver.

Dear Colleague,

In partnership with the Nautical Institute and Middlesex University in London, I am currently undertaking a Work Based Learning, Master of Arts (MA) degree, in Marine Accident Investigation.

I began this course in 2006 and am now at the research stage, undertaking a research project, which I have developed with my partners, to complete my course. The purpose of my research is to show that a contributory factor to the occurrence of marine accidents, is experiential knowledge (knowledge gained from experiences) not being transferred from Senior to Junior Officers onboard modern Merchant Navy vessels by mentoring; to identify the barriers that are preventing this transfer of knowledge, and then to produce a practical ‘Guide to Mentoring’ that will re-establish the flow of knowledge.

For the purpose of this research, I have defined mentoring as ‘the act of sharing knowledge without a designated reward.’ Within your career to date, I am sure that you have been in the position of both Mentor and Mentee and can, as I can, name a number of people that helped you on your way. I hope that you will spare a few minutes to assist me with my research.

Specifically, I would like to know what, in your experience, is the most significant lack of knowledge in ship personnel, that leads to accidents and incidents, and what you think the causation for this lack of knowledge is. To evidence your thoughts, I would welcome specific examples of accidents, but these must be in the general public domain for me to use and, much more important to me, is your experience.

I would also welcome your ideas on how knowledge can be shared in the multi-national, multi-cultural Merchant Navy of today.

As an example, in my experience many new Masters have a significant lack of knowledge of ship handling, particularly when anchoring. This is usually caused by, when Chief Officer, always being forward for stations and often considered by the Master, the only person capable of letting the anchor go. This can be easily addressed by training the other Officers to go forward and having the C/O on the bridge for stations, understudying the Master and gaining the experiential knowledge before taking command.

I believe that learning is a life long experience and we should be challenged not only to continue learning but also to pass that learning on. With your help, I hope my research will go some small way to achieving this.
Thank you for your time and please find attached to this e-mail a Word document questionnaire for you to complete.

Kind regards,

André

Captain André L. Le Goubin MNI
Thank you for taking the time to answer the following questions. I have left the questionnaire as a simple Word document so that you can type your answers directly after my questions. As a reminder, ‘the purpose of my research is to show that a contributory factor to the occurrence of marine accidents, is experiential knowledge (knowledge gained from experiences) not being transferred from Senior to Junior Officers onboard modern Merchant Navy vessels by mentoring; to identify the barriers that are preventing this transfer of knowledge, and then to produce a practical ‘Guide to Mentoring’ that will re-establish the flow of knowledge.’

1. Current position / rank –

2. Length of time in this position / rank

3. In your opinion, are accidents and incidents arising due to lack of experiential knowledge transfer? – Yes / No -

4. If yes what, in your experience, is the most significant lack of knowledge, that leads to accidents and incidents? –

5. What is the causation of this lack of knowledge? –

6. How can experiential knowledge be shared in the Merchant Navy of today? –

7. Any further comments? –
Thank you. All contributions will be kept confidential however, if you would like further information, or to contribute further in this research, please provide the following further information:

Name:

E-mail:

Once again, many thanks for your time. Experiences can be good or bad, but the knowledge that comes from that experience can only be good. Having taken the time to complete the above questions you have passed on a little of your experience to me and together, I hope we can make a difference.

André.

algresearch@hotmail.com
APPENDIX "F"

DISCUSSION OF CONFIDENTIALITY & ANONYMITY. ETHICS RELEASE FORM
When I considered the construction of my questionnaire I was aware, from previous modules, of how willing many respondents would be to share information and I suspected that some of this would be of a confidential nature. I was also aware of the potential harm I could do if I were to identify a respondent, particularly if the subject matter were describing a professional shortcoming leading to an accident or incident.

To assure the respondent of the confidential nature of my research I provided the following section at the end of each questionnaire:

‘Thank you. All contributions will be kept confidential however, if you would like further information, or to contribute further in this research, please provide the following further information:

Name:
E-mail:’

The above statement assured the responder of confidentiality but also provides a means of anonymity and it allowed me to follow up on comments if required, assuming the consent was given. In most cases consent was given and I did follow up on some responses and gather further information and data. Those that did not provide follow up information received personal thank you e-mails and no further correspondence. A number of responders have asked to continue the conversation beyond the research period, and some for a copy of my findings when the research is complete, these I will provide a copy of my paper when it is published.

I did not produce a consent form to accompany the questionnaire, as I believe the act of completing the questionnaire voluntarily without designated reward consented the responder to my using the data they provided.

To create a further barrier and provide further confidentiality, I created a new e-mail address, algresearch@hotmail.com so that the questionnaires could be sent back to me directly, regardless of the source they were received from. On reflection, a gmail account may have been better as it would appear that certain company accounts are set to automatically block Hotmail.

Prior to starting my research I requested and was given permission to use my company e-mail system for research purposes. This I did for the questionnaires to my colleagues, as they would expect to receive it from this source and my company e-mail address immediately gave the request authenticity, to those who do not know me personally. All other contacts were initially made using my Hotmail account, as I did not wish to introduce any suspicion that the purpose of my research was for any other reason than that stated. I do not know if this was the right decision as, when the Hotmail account was blocked, I used company e-mail and the response returns appeared to be the same.

At the start of my research, I was concerned as to how I could distill and diffuse the research results through the maritime community whilst still retaining the required...
confidentiality and anonymity. This I achieved by creating four Word documents corresponding to my four research questions. I then took each question response, cut it from the questionnaire and pasted it into the appropriate Word document. At the end of this activity, I had pasted over 13,000 words of data into the four documents and, in most cases, even I could not tell who had said what, therefore I consider this methodology appropriate and satisfactory.

At the end of my research and having already begun to distribute my findings in the form of the paper attached to this report at Appendix I, I am confident that no one has been harmed by my research and that I have retained the confidentiality and anonymity required and as promised at the start.
National Centre for Work Based Learning Partnerships  
Middlesex University  

WBS 2811 and WBS 4811 ‘Programme Planning’  

Learning Agreement Cover Sheet

<table>
<thead>
<tr>
<th>Module:</th>
<th>WBS 2811</th>
<th>WBS 4811</th>
<th>(delete as appropriate)</th>
</tr>
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<tbody>
<tr>
<td>Name:</td>
<td>André L. Legoubin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Address</td>
<td>60 Sarah Lane, Hayling Island, PO11 OEF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student number:</td>
<td>MOD0080060</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tel/fax/email:</td>
<td>+44 234 567 8900</td>
<td><a href="mailto:legoubin@hotmail.com">legoubin@hotmail.com</a></td>
<td></td>
</tr>
<tr>
<td>Post currently held:</td>
<td>ASSOCIATE MASTER MARINE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organisation: (if applicable)</td>
<td>THE NAUTICAL INSTITUTE</td>
<td></td>
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</tr>
</tbody>
</table>

Please provide information by means of attached sheets under each of these headings:

1. Award sought  
2. Period of Learning Agreement  
3. Composition of proposed programme of study  
4. Major learning outcomes of the proposed programme

| Student signature: | André L. Legoubin | Date: 20/05/07 |
| Third party Signature: | [Signature] | Date: 01/06/07 |
| Name: (please print) | D.J. Patraiko |
| Role: | Director of Projects - Nautical Inst. |
| University signature: | J.R. Smith | Date: 20/06/07 |
Part 2: Ethics Release Form signatories sheet

Student's Name: Andre L Le Goubin

Qualification sought: Master of Arts

Title of Your Project: The Role of the Master as a Mentor in Marine Accident Prevention

Name of Programme Adviser: Dr. M. Djerdem

I confirm that the information provided on the Ethics Release Form is correct:

Signature of Student: Andre L Le Goubin

Given the information provided, I support the approval of this proposal on ethical grounds:

Signature of Programme Advisor: 

Note that the University signature on the Learning Agreement cover sheet (Section 6.1) covers agreement to the completed Ethics Release Form(s)

Any further comments:

Please attach to your work for WBS2/4811 a completed Ethics Release Form (Part 1 and Part 2) for each research based project module you undertake.
Part 1: Questionnaire

Please answer all of the following questions:

1. Has the project proposal and ethical considerations in draft been completed and submitted to your first supervisor
   [ ] Yes [ ] No

2. Will the project involve an intervention or change to an existing situation that may affect people and/or an evaluation of outcomes of an intervention?
   [ ] Yes [ ] N/A [ ] No

   If yes, have participants been given information about the aims, procedure and possible risks involved, in easily understood language? (Attach a copy of any information sheet you may have provided, or intend to provide)
   [ ] Yes [ ] No

3. Will any person’s position, treatment or care be in any way prejudiced if they choose not to participate in the project?
   [ ] Yes [ ] No

4. Can participants freely withdraw from the project at any stage without risk or prejudice?
   [ ] Yes [ ] No

5. Will the project involve working with or studying minors (i.e. persons under 16 years of age)?
   [ ] Yes [ ] No

   If yes, will signed parental consent or in loco parentis be obtained?
   [ ] Yes [ ] No

6. Are there any questions or procedures likely to be considered in any way offensive or inappropriate?
   [ ] Yes [ ] No

7. Have all necessary steps been taken to protect the privacy of participants and the need for anonymity?
   [ ] Yes [ ] No

   Is there provision for the safe-keeping of written data and video/audio recordings of participants?
   [ ] Yes [ ] No

8. If applicable, is there provision for de-briefing participants after the intervention or project?
   [ ] Yes [ ] No

9. If any specialised instruments, for example psychometric instruments are to be employed, will their use be controlled and supervised by a qualified practitioner e.g. a psychologist?
   [ ] Yes [ ] N/A [ ] No

10. Will you need to put your proposal through an ethics committee related to your professional work?
    [ ] Yes [ ] No

   If you have placed an X in any of the bold boxes, please provide further information:

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APPENDIX "G"

QUESTIONNAIRE DISTRIBUTION PROGRAMME
APPENDIX G – QUESTIONNAIRE DISTRIBUTION PROGRAMME

My questionnaire distribution programme was as follows:

1. **Pilot the questionnaire to close colleagues and project director (who has acted as my advisor) at the Nautical Institute. Review their comments and adjust the questionnaire accordingly** – This produced an interesting discussion on the use of the word ‘ethical’ in the context that I was going to produce an ‘ethical Guide to Mentoring’. It was felt that the use of the word ‘ethical’ would require a certain amount of ‘buy in’ and therefore may reduce the number of responses. I reflected on this and decided to change the word to ‘practical’ justifying this change on the knowledge I have gained from this degree course, that everything I do and say must be ethical, therefore it becomes an implied term within my work and does not need to be stated. The piloted questionnaire took my responders (who were English speakers) approximately 20 minutes to complete, which I knew would reduce the numbers of responses however I balanced this with the encouraging data that it provided and the conversations that we engaged in following the pilot period.

2. **Sent out the questionnaire to all the mariners within my company worldwide, approximately 50 persons, all in shore positions but having previously attained the rank of master or chief engineer and to members of the Nautical Institute ‘Sea Going Correspondence Group (SGCG) also approximately 50 Mariners, all members of the Nautical Institute, all in sea going positions in various ranks, and on a wide variety of vessels** – After two weeks I considered I was at the end of this initial phase and I had 19 questionnaires returned, although it should be noted that after a polite reminder I received a number more from my colleagues. Not all my responders sent my questionnaire back, some chose to write back with their own ideas on their experiences of the transfer of experiential knowledge, which I equally welcomed as they were clearly engaged in the conversation.

3. **Review and reflect on the responses to date and determine whether the questionnaire is providing the data I require** - If the numbers were a little disappointing, the content more than made up for it. Almost every questionnaire contained substantial content that I could use and I did not receive any adverse comments regarding the clarity of the questionnaire. Whilst I recognize this may have been indicative that only those who understood what I was looking for responded, I did not receive any evidence of this, so pressed on with the questionnaire distribution without making any changes.

4. **The Nautical Institute has over 40 branches in 110 countries (information from the US Gulf Branch at www.niusgulf.com accessed 14th December 2008) so I personally sent out the questionnaire to each of the Branch Secretaries for distribution to their members and (hopefully) onward to non-members within shipping companies and various establishments worldwide** - It is not possible to quantify the number of persons that received the questionnaire through this means but the Nautical Institute has over 7,000 members worldwide and I
believe I reached a significant number of them. A number of responses to the e-mail were received as undeliverable and some of the secretaries did not pass my request on, evidenced by the lack of any response from the branch. Notwithstanding that, the response was sufficient for my research with questionnaires being received back from countries as far apart as Europe, Australia and Asia as well as the UK and the Americas.

One reflection I may have been better to conduct this part of my research through the Nautical Institute as I did with the initial distribution of the questionnaire to the SGCG, rather than sending it personally, as I believe in some instances I fell foul of e-mail spam blockers. On average over the period of one month I received 2-3 responses per day, which allowed me to respond personally to each responder and in many cases continue the discussion beyond the initial response.

I did not consider it acceptable to send out a reminder to the branch secretaries as I did to my work colleagues so relied on a short article published in the November issue of Seaways to serve as a reminder. This did encourage a few more responses. A copy of this article is attached to this report in Appendix H.

As previously discussed it was my intention to print each questionnaire and highlight pertinent points. This became somewhat overwhelming, as although the numbers of responses were not great, the content was substantial. To overcome this I created four Word documents, one for each of the question responses and one for further comments, and cut and pasted the responses into the respective documents. The benefit of this approach was two-fold. Firstly, identifiable patterns began to emerge from the data and secondly, it provided complete anonymity to the responders as, by the end of my research, even I could not identify who said what from these documents. It should be noted that within these three documents I collected over 13,000 words of data.

5. *Distribute the questionnaire when onboard vessels through the course of my work if ethically and professionally acceptable* – This method of distribution fitted in with my ethnographic style of research whilst onboard ships. In conjunction with casually discussing mentoring and the transfer of experiential knowledge I was able to introduce my questionnaire and elicit a response.
APPENDIX "H"

LETTER PUBLISHED IN ‘FAIRPLAY’ & ARTICLE IN ‘SEAWAYS’
A mercenary solution
SIR, As a director of a maritime security company, I would of course say yes to employing armed security. While I appreciate the reasons for the reluctance of the shipping, not least the commercial cost and legal implications, Commodore Davidson was absolutely right to state that the shipping community must deal with piracy instead of forever lobbying for an international effort.

The private military company has long been accepted in Iraq and it is high time that the shipping industry embraces this concept.

For a relatively small cost, a team of properly trained and armed consultants will provide confidence and protection to the industry.

Of course there are arguments against but self-defence is an inherent principle of international law and that must always be remembered.

Yours etc,
Phillip Cable, by email

That sinking feeling
SIR, Should a captain go down with his ship? The captain of the Titanic (pictured above) was probably the most famous, but he was not the first and there have been many more since.

The reason a captain goes down with his ship is simple: A ship cannot be considered as "abandoned" while it remains under command. The salvors of a stricken ship would receive far less in salvage if the captain were still onboard. A captain feels he has a duty, therefore, to remain onboard until all hope is gone.

Many ashore would now consider that suicide, since any captain who survives the sinking of his ship will almost certainly face serious criminal charges. This has created a serious moral dilemma for captains belonging to religions that consider suicide a mortal sin.

The relentless criminalisation of the seafarer has far wider implications than just the loss of freedom. As a practising Roman Catholic and a ship’s captain, I feel my very mortal soul is in danger should I choose to go down with my ship.

Yours etc.
Captain Peter J Newton, by email

Learning from experience
SIR, I refer to recent articles carried in Fairplay concerning mentoring.

In partnership with the Nautical Institute and Middlesex University in London, I am currently undertaking a Master of Arts degree in Marine Accident Investigation.

I began in 2006 and am now undertaking a research project, which I have developed with my partners, to complete my course. The purpose of my research is to show that a contributory factor to the occurrence of marine accidents is that experiential knowledge – knowledge gained from experience – is not being transmitted from senior to junior officers on modern merchant navy vessels by mentoring. I am also seeking to identify the barriers that are preventing this transfer of knowledge and to produce a practical guide to mentoring that will re-establish the flow of knowledge.

For the purpose of this research, I have defined mentoring as: ‘the act of sharing knowledge without a designated reward’.

Within your readers’ careers to date, I am sure they have been in the position of both mentor and mentored and can, as I can, name a number of people that helped them on their way. I hope that they will spare a few minutes to assist me with my research.

Specifically, I would like to know what, in their experience, is the most significant lack of knowledge in ship personnel that leads to accidents and incidents, and what they think is the cause of this lack of knowledge. I would welcome specific examples of accidents, but these must be in the public domain for me to use.

For ease of reply, I have developed a Word document questionnaire available from alresearch@hotmail.com and all correspondence will be treated in confidence.

Yours etc,
Captain André L Le Goubin MNI
Associate Master Mariner
email: andrelegoubin@locamericas.com

Fired up? If you have any comments on the contents of Fairplay, Daily News or Solutions, or if you simply want to air your views on the maritime industry, contact the editor on letters@fairplay.co.uk
Nautelex

David Patraiko FNI
Director of Projects

Tackling piracy
In a bid to coordinate industry action against the increasingly dangerous threats posed by piracy attacks, last month IMO Secretary-General Ettimides Mitropoulos met the heads of shipping’s ‘Round Table’ (BIMCO, ICS/ISF, INTERCARGO and INTERTANKO) and of the International Transport Workers’ Federation (ITF). The meeting aimed at exploring common approaches, additional to measures already taken, to address the increasingly serious incidence of piracy attacks on shipping off the coast of Somalia and, in particular, in the Gulf of Aden – a strategic corridor leading to the Red Sea and to the Suez Canal, which represents a key conduit for almost 12 per cent of the world’s crude oil, not to mention other energy, container and general bulk traffic.

In the face of the recent alarming deterioration of the situation – both in the number of attacks, hijackings and hostage takings off Somalia, and the ferocity with which they are carried out – and in the light of some 13 vessels and over 200 seafarers reportedly now in the hands of pirates, the meeting identified a number of key issues felt needed to be addressed in order to alleviate the situation and strengthen further the safeguarding of shipping, including fishing vessels and pleasure craft, in the region.

It called for sustained coordination between all naval forces operating in the area currently and in the future; for clear rules of engagement that would enable military assets to intervene effectively to protect shipping; and for an extension, for an adequate duration, of the mandate given in United Nations (UN) Security Council resolution 1816 (2008) enabling states cooperating with the Transitional Federal Government of Somalia to enter the country’s territorial waters and use all necessary means in order to repress acts of piracy and armed robbery at sea, consistent with relevant international law. That mandate is due to expire on 1 December 2008.

The meeting agreed on a number of specific measures to be taken by the IMO Secretary-General and participating organisations, individually and collectively, to mobilise support and action from all sides in a position to assist.

The meeting further agreed that the need for such measures was becoming increasingly urgent because of the immediate human concerns for the safety and wellbeing of seafarers and passengers who are currently being held hostage or may be caught up in future attacks; the continuing impact of the situation on the viability of transporting much-needed humanitarian assistance to Somalia; and its potential and significant detrimental effect on the world’s commerce.

It was considered that, without adequate and coordinated protection for shipping, the current situation off Somalia might cause ship operators to avoid transiting through the Gulf of Aden, using the Cape of Good Hope instead, which would lead to increased shipping costs and, in turn, possible negative consequences for global trade – and, in the final analysis, the consumer – at a time when all nations are making efforts to address the current global financial crisis.

In this respect, the meeting was encouraged by the UN Security Council’s adoption, on 7 October 2008, of Resolution 1838 (2008), which calls upon states interested in the security of maritime activities to deploy naval vessels and military aircraft to actively fight piracy off the coast of Somalia, and expresses the Council’s intention to renew the mandate granted in Resolution 1816.

Situational awareness
In many ways the term ‘situational awareness’ is a form of mental bookkeeping, according to Dr Carlos Comparatore and Captain William Abernathy in a recent issue of the Crew Endurance Management newsletter published by the US Coast Guard.

Situational awareness refers to the capacity to maintain a constant vigil over important information, understand the relationship between the pieces of information monitored, and project this understanding into the near future to make critical decisions.

Crew members, whether working on the navigation watch, on deck, in engineering, or in the galley, must constantly maintain situational awareness to ensure safe operations. A healthy dose of such awareness is essential to make informed decisions, act in a timely manner, and ultimately ensure operational safety.

Maintaining 24-hour vessel operations, while successfully meeting navigational challenges such as inclement weather, vessel traffic, bridges, locks and recreational vessels, requires that all the cognitive processes support situational awareness in good working order.

Considering recent statistics, the authors propose that in rapidly changing operational scenarios, failures to maintain situational awareness can lead to inadequate decision-making and ultimately operator performance errors. In the newsletter, they offer evidence derived from research and accident investigations, establishing the association between degraded human endurance, loss of situational awareness, and accidents. They hope that the information may help practitioners and interested readers to manage misinformation, while protecting crew members’ health and performance. More information on the crew endurance management programme and the newsletter can be downloaded from www.uscg.mil/cg/cgs/cgs5211/cems.ssp

Mentoring
The Nautical Institute is being supported by Captain André Le Goubin MNI in identifying issues of knowledge gained from experiences and the role mentoring may have in improving safety. A successful outcome from this research may lead to the NI publishing guidance to improve mentoring.

‘The issue of “learning from experiences” is a keen topic for many Seaways readers,’ writes Captain Le Goubin, ‘so I would encourage you to share your thoughts on this subject.’ Captain Le Goubin is an experienced master and pilot who is currently working as a consultant accident investigator.

Questionnaires relating to this research can be requested from algreg@ymail.com.

Feedback before December 08 is encouraged.
APPENDIX "I"

PAPER ‘MENTORING & THE TRANSFER OF EXPERIENTIAL KNOWLEDGE IN TODAY’S MERCHANT FLEET’
Mentoring and the transfer of experiential knowledge in today’s merchant fleet.

Captain A. L. Le Goubin MNI
London Offshore Consultants, Houston, Texas, USA.
The Nautical Institute, London, UK.

ABSTRACT: According to statistics, the number of marine accidents is rising, and recent increases in the cost of P & I insurance cover provides further evidence that the cost of these accidents is also soaring. This paper establishes that a contributory factor to the increase in accidents is that experiential knowledge (knowledge gained from professional, ‘on the job’ experiences and reflected upon) is not being passed from senior to junior officers onboard many merchant vessels, in the traditional way that it used to be, by mentoring. Following worldwide research throughout the maritime community by questionnaire, and ethnographic research by the author, the paper will show what is considered to be the most significant lack of knowledge and causation of this lack of knowledge. It will offer some practical suggestions that may break down these barriers and re-establish the flow of experiential knowledge in the multi-national, multi-cultural merchant fleet of today.

1 INTRODUCTION

This paper is primarily based on research recently conducted in partnership with the Nautical Institute and Middlesex University in London. The purpose of my research is to show that a contributory factor to the occurrence of marine accidents, is experiential knowledge (knowledge gained from professional ‘on the job’ experiences and reflected upon) not being transferred from senior to junior officers onboard modern merchant navy vessels by mentoring; to identify the barriers that are preventing this transfer of knowledge, and then to provide practical suggestions that will help re-establish the flow of knowledge.

In addition, it is my aim to engage the maritime community in a conversation about mentoring and the transfer of experiential knowledge, for although one may not agree with what I am saying, the very act of disagreeing is engaging and is raising the conceptual profile.

During this paper I will briefly discuss:
• What is considered the most significant lack of knowledge at sea today
• The causation of this lack of knowledge, and
• What can be done to re-establish the flow of knowledge.

Throughout this paper you will note un-cited quotations. These are taken directly from my research questionnaires and, whilst due to agreed confidentiality I can’t name the responder, I gratefully acknowledge their contribution by engaging in this conversation.

2 DEFINITIONS

In this paper I have used the following definitions:

(a) Candidate—Anyone receiving experiential knowledge by mentoring.

(b) Experiential Knowledge—I have defined this as knowledge gained from professional ‘on the job’ experiences and reflected upon. This knowledge can come from a wide variety of sources or experiences but, in my opinion, it often has the most impact when it comes from an accident, incident or near miss; however it does need to be reflected upon before it can become experiential learning. I will say more on this further into my presentation.

(c) Mentor—The Oxford English Dictionary describes a Mentor as ‘an experienced and trusted adviser’ and sources the origin of the word as ‘from the name of Mentor, the adviser of the young Telemachus in Homer’s Odyssey’. In the context of my research I simply define it as the possessor and distributor of experiential knowledge.
Mentoring—‘Mentoring is a form of knowledge transfer based in part on altruism’ Davenport T. & Prusak L. (1998). I like this definition as, for me, it sums up the unselfish act of knowledge transfer that I myself benefited from in my early days at sea. For the purpose of my research, I have followed this theme and defined mentoring as ‘the act of sharing knowledge without a designated reward’, which definition in itself has caused a certain amount of debate, but I believe it suffices.

Reflection – ‘A thoughtful (in the sense of deliberative) consideration of your experiences, which leads you to decide what the experience means to you.’ Institute of Work Based Learning. (2008).

3 MOST SIGNIFICANT LACK OF KNOWLEDGE

‘Up to 70% of skill is learnt from experience’ Trautman S. (2007). It is this maritime skill pool that I believe is not being passed on in the way it used to, by mentoring. With this in mind, and having determined, by questionnaire that insufficient experiential knowledge transfer is considered to be contributing to accidents and incidents, I went on to find what is considered to be the most significant elements contributing to this lack of professional knowledge in today’s Merchant Navy.

I must be honest; when I began this research I expected to see the now common themes of; application of collision regulations, standard of certification training and reliance on electronics, to name a few, to be the most prominent response to the question I posed; ‘what, in your experience, is the most significant lack of knowledge, that leads to accidents and incidents?’ These expected responses did occur, but not as a significant number, approximately 53% of my responders cited elements that I have collectively grouped as, lack of ‘feel’, seamanship, intuition, practical knowledge and experience.

But what are these responses actually referring to? ‘Whilst much can be taught at college about ‘seafaring’ it has to be complemented by practical advice from senior person nel, however for the advice to be understood the recipient needs to have (for want of a better word) a ‘feel’ for seafaring.’

In the sense the verb ‘to feel’ is synonymous with ‘to experience,’ I believe that these responders are articulating the same lack of experiential knowledge that I am referring to in this paper. Let me give you a few more examples:

- ‘Ship’s officers have ceased to be trained to think and act independently, make decisions based on their own judgments and be accountable for them
- Modern seafarers lack a ‘feel’ for the sea
- Inability to act intuitively, and
- The inability of modern officers to use their own senses, such as sight and sound and their brains to make decisions.’

It is not something tangible, nor is it a subject that can be taught in college, although the concept should be addressed and the candidates encouraged to participate in experiential knowledge transfer. It is, as one of my consultant colleagues so sagely puts it ‘those gems of wisdom that are passed on during an operation, and that consolidate theoretical knowledge.’

4 CAUSATION OF THE LACK OF KNOWLEDGE

My next question then is ‘what is the causation of this lack of knowledge?’ This question provided much more balanced results and I list the eight top answers:

1. Demands on Masters/Senior Officers time
2. Rapid promotion
3. Multi national / cultural crews
4. Poor training / lack of basic knowledge
5. Attitude / lack of interest
6. Employing anyone who has a ticket
7. Inexperience, and
8. No formal system of training for Senior Officers.

It is the first four responses I want to concentrate on, as they represent approximately 54% of the responses to this question and again, I believe they indicate inadequate experiential knowledge transfer. Taking each in turn, I will discuss how I believe each causation is affecting the transfer of experiential knowledge:

(1) Demands on Masters / Senior Officers time-

‘Officers are struggling to keep their heads over the growing responsibilities and additional paperwork that has come about due to the additional requirements that have come about in the last decade.’

‘Machines have many qualities but common sense isn’t one of them. And common sense is lacking in too many seafarers today. The Master has a vital supervisory role of support of the OOW and this role is being neglected by the demands of the “office” on the Master’s time.’

I think we can all agree that the Senior Officers on-board today’s ships are far busier than they were in say the ‘80’s when I was deep sea. I am at times both shocked and dejected to see the changes that have occurred to the merchant fleet, or more specifically to the mariners onboard today’s ships, as they struggle to comply with the everyday requirements of running a modern merchant vessel.

‘Lack of time onboard due to fatigue of Officers.’ Much has been written about the effects of fatigue including some very good papers - ‘Seafarer Fatigue – The Cardiff Research Programme.’ Smith A. et al (2006).
There is little doubt that fatigue is a primary cause of accidents but consider for a moment the effect it is having on mentoring; how many of us due to work commitments have time as fathers for our own children? At times during a voyage we are often so tired that we can barely stand up, let alone take time out to show the third mate again how to do a relatively simple operation. Do it yourself, do it properly, there is always tomorrow to show her again. But that opportunity for knowledge transfer has passed and may not be re-created prior to the incident!

‘Masters, Officers are so busy with paperwork that they have no time to observe the crew during their work. If I spend the day on deck when am I going to complete my other jobs, when am I going to sleep and what about STCW?’

This is an interesting comment, although I know that this responder was referring more to hours of rest than when was he going to find the time to be a mentor. So what about STCW and the transfer of experiential knowledge - are there any provisions for the inclusion of this concept? I cannot find any reference that specifically looks at the knowledge sharing that I am referring to - but that does not come as a surprise - however, much is said about training and the minimum standards required for certification. Keep this in mind, as I will mention more about a structured training scheme further into this paper.

(2) Rapid promotion:

I have looked at the new foundation degree offered by the UK for training of candidates for their first OOW Certificate and it looks very familiar. It is a three year, five phase course, very similar to the one I embarked on in 1980 although I achieved an HND and now the new officer will achieve an honors degree, in keeping with many of the other maritime training establishments around the world. Further, the UK Maritime Coastguard Agency (MCA) reminds us; ‘Master and Officers need to know that the standards expected of the candidate (when competence is reached) is that of a person about to take up the job for which the award is made. Cadets are expected at the end of their training to be competent to start to undertake the job of watchkeeping officer, but they will clearly be lacking in experience.’ MCA (2008). Nothing has changed here! So what is the problem that so many at sea today are referring to? Let us look at a few of the comments I received:

‘The manning agents get one or two good reports about someone’s performance, and they are fast tracked for promotion – often beyond their capabilities. On the reverse side, I have seen some junior officers demanding promotion after one or two contracts in a particular rank – or threatening to leave – regardless of whether the senior officers believe they are suitable.’

‘Lack of time in the long term meaning of the word. Promotions are happening very quickly, people do not have time to experience their knowledge and are being moved one rung up the career ladder.’ This is an interesting conceptualization of the learning process where people are not in a rank long enough to ‘experience their knowledge’ or perhaps to expand their knowledge base sufficiently with experiential learning to move on to the next rank.

‘Many officers today are promoted quickly and as a consequence, lack the foundation of a proper knowledge base’.

‘The lack of skilled seafarers has also resulted in a need to employ people who would previously have not been considered as being suitably experienced for a particular rank.’

In answer to this question the respondents who referred to rapid promotion spoke of promotion between ranks and not the length of time that it takes a seafarer to achieve his/her first watchkeeping qualification. Therefore I believe we can assume that initial training is still adequate and that there is further evidence that it is the experiential knowledge traditionally gained between ranks that is missing.

(3) Multi national / cultural crews

This is always a difficult subject to approach and articulate but I believe that it does affect the transfer of experiential knowledge and therefore must be addressed in an ethical manner, supportive of the current regime.

‘Much can be traced back to the huge changes that took place in the industry in the early 1980’s. Initially the ship owners continued to employ senior officers from traditional maritime nations but employed cheaper junior officers and crew. This resulted in an almost complete break in the flow of knowledge to seafarers who they believed would take their jobs’. This responder goes on to comment ‘as things have progressed and the number of experienced officers and crew has diminished, there has been a tendency for crewing agencies to hire a crew of many different nationalities. On individual ships this has sometimes resulted in an almost complete breakdown in the inter-personnel communication.’

In some ways I am glad to say that the 80’s are now well behind us and, in most cases, we have moved on from the attitude described above. I spend a significant amount of my time onboard merchant vessels crewed by a staff of mixed nationalities and, with respect to the difficulties sometimes observed, believe that the problems actually lie far more with a language barrier than with a cultural barrier. As I have undertaken this ethnographic style of research I have also noted that the problems seem to be far more prevalent on vessels with two nationalities rather than those with many. This is, in my opinion, due to the necessity to communicate in a common language on a multi-national crewed ship, whereas with those of just two different nationalities, there is a tendency for each nationality to communicate in their mother tongue and to only converse between the two in a common language when necessary, in essence, de-voiding the vessel of any social communication between the nationalities.

Consider for a moment how much experiential knowledge can be gained by just listening to people talking about a problem, if they are talking in a language you un-
duced ethically and quietly at every organisational level. It is also important to undertake a review of all procedures and incorporate them within the current daily operations as cultural evolution.

From the previous quotes discussed earlier it does not appear to be the initial college training that respondents are referring to, but the training that they receive onboard ships. This, I believe, further evidences the need for all of us to have this conversation and to determine how we are going to share experiential knowledge again.

5 SHARING OF EXPERIENTIAL KNOWLEDGE

So what can we do? How can experiential knowledge be shared in today’s merchant fleets? The first thing is to acknowledge that there is a problem and then to ask who is affected? Amongst others, I believe this list would include seafarers, ship owners, managers and charterers, ports and coastal states, flag administrations, underwriters and environmentalists, although not necessarily in that order of precedence. If we are all affected by the problem we should all be involved in searching for a solution.

Time and brevity permit me to only give a few examples of the way we can re-start the flow of information. I would caution that none of these suggestions must be allowed to increase the seafarers’ workload. They must be incorporated within the current daily operations as cultural and procedural changes or developments, introduced ethically and quietly at every organisational level.

5.1 The 10 minute challenge-

This is something I would like everyone to undertake who believe they may be affected by the problem. Sit quietly for just 10 minutes and reflect on what your greatest concerns are regarding lack of knowledge. For myself as a shipmaster, it would start with if any one is looking out of the bridge window, or is there total reliance on technology to keep a look out. Having determined your greatest concern(s), do something about it. In my example, I would talk to my OOW’s anecdotally, with examples of clear weather collisions that have happened recently on modern ships and hence why it was important to keep a visual lookout.

I often wonder how many masters who have concerns regarding compliance with their standing orders have taken the time to actually explain to their junior officers the relevance of these instructions and the potential consequences of non-compliance, for both parties. Or is a signature of understanding sufficient because there is no time for more, or perhaps a fear that it could invoke a response? 10 minutes is all it would take.

5.2 On the job opportunity-

‘To gain the maximum amount of synergy from on-the-job experience, cognitive apprenticeships or a transformational learning event requires teacher/facilitator support. Mentoring, guiding, debriefing or teaching is required to maximize the learning opportunities’. Gray I.S. (2007). To achieve this gain I believe we need an adaptive, structured approach to mentoring. Most established shipping companies had a formal system in place ten or twenty years ago and in my early career it was expected that I would understudy the next rank above. This structured system should permeate through all onboard activities and should be utilized through all stages including:

(i) Preparation–This could be as large as a Job Safety Analysis (JSA), perhaps a ‘toolbox’ talk or quite simply just the master, mate or chief engineer taking a couple of minutes to explain what is expected to happen.

(ii) Execution–While the job or task is underway the mentor should try and point out important / interesting moments and facts and explain them to candidates or better still, let them undertake the task under supervision.

(iii) De-briefing - After the job or task has been completed, time should be allowed for questions, comments or opinion.

One can imagine the difference this might make to a keen young officer on the bridge who is used to staying in the chart room plotting positions by GPS, when approaching a port or anchorage and is allowed to con the vessel under supervision through the above tasked stages. Even now, I still remember the pride I felt when as third mate; I was allowed, under the master’s supervision, to keep the con of a large roro/container vessel as we transited a busy Dover Strait.

I believe that everyone should be routinely training his or her successor. Even on small tasks not requiring formal preparation, every opportunity should be taken to pass on experiential knowledge. If this ethos is followed it should soon become embedded within the culture of the vessel with a resultant improvement in operational standards.

5.3 External learning facility-

With access to the internet now available to ships it is possible for companies to build a website that gives the mariner real time information on a variety of subjects perhaps relating to vessels within the company, ports visited, cargos carried etc. This is a good way of sharing in-
formation within the company and of transferring experiential knowledge remotely. Some companies have taken this further and employ knowledge brokers to facilitate this, but it does not need to be that elaborate. I know of one company that used to have a radio conference call with all their vessels each morning; what a great way of transferring experiential knowledge informally.

This concept could also be developed at institution level with access to online mentors. I know from my research that there are many professional, experienced people willing to share their knowledge if we can just facilitate the transfer.

‘Onboard a more structured approach may be necessary – juniors setting down their questions, comments and areas of bewilderment at the actions taken, in an electronic format which could then either be passed on to the senior officers on board or to specific mentors elsewhere. The second option provides some anonymity for the questioner but the first option could/should elicit a response from the senior officer involved in the situation in question.’ I have recently seen a similar concept in place for safety issues. When a potentially unsafe act or occurrence takes place it is dealt with immediately and place for safety issues. When a potentially unsafe act or occurrence takes place it is dealt with immediately and then a card is filled in detailing the instance. This card is reviewed at the next daily management meeting and any required action taken. The card becomes part of a closed loop system ensuring feedback. Perhaps this style of approach could be used to gain experiential knowledge from an action, when ‘the heat of the moment’ has passed.

5.4 Distribution of accident investigations-

I think that it is safe to say that we all like to read a good accident report. I know that when ‘Seaways’ arrives each month the MARS reports are usually where I start reading and, as I said right at the beginning of this paper (experiential) knowledge can come from a wide variety of sources or experiences but, in my opinion, it often has the most impact when it comes from an accident, incident or near miss; however it does need to be reflected upon before it can become experiential learning.’ Many countries produce excellent reports but how many of them actually get to ships where they can be read and reflected upon by the seafarers? One suggestion, which came from one of my consultant colleagues, is to include a newsletter with lessons learned from incidents and accidents in the weekly Notice to Mariners that is sent to every vessel. Not only would the seafarers be able to read this but also it would provide an excellent source of discussion between mentors and candidates. Just recently, IMO has adopted the code to make marine accident investigations by Flag/Coastal States mandatory and these reports will be made available to the industry, so this is an ideal opportunity to ensure that they reach as wide a readership as possible.

In this context, thought must also be given to producing these reports in different languages as I believe so much value is lost if they are only in English. What use is an accident report highlighting the dangers of (say) operating a winch if the winch operator only speaks Chinese? Here, I believe P & I Clubs could play a significant role and mutually benefit, by helping to ensure that the experiential knowledge is transferred to their member’s staff in a language they can understand.

5.5 Structured training scheme-

From my research to date I can find little indication that officers gaining their first certificate of competency are any less trained or experienced than they used to be, in fact in some fields such as the use of electronics they are very often experts! It is the next step that is causing concern as the officer progresses through the ranks. For those seafarers aspiring to, or recently having taken up command, The Nautical Institute Command Diploma Scheme provides an open learning scheme based on the publication ‘The Nautical Institute on Command’ with the diploma awarded to those who successfully complete inter alia all the relevant tasks in a log book. But what about those officers who are between their first and last certificate, what is there for them to ensure they are gaining sufficient knowledge?

There are schemes available for this and I am aware of at least two companies that incorporate them into their training and career development programmes but, in my experience, this is not common. I recommend that we develop and adopt a universal, formalized system of continuous professional development through the ranks - possibly by extending the “Cadet Record Book” system – this is a task book system - all the way up to chief officer / 2nd engineer where it should meet up with the NI scheme. The successful completion of the training programme would then become pre-requisite to the promotion of the officer.

5.6 Increase in staff-

We have already determined that fatigue is a serious issue onboard of merchant vessels and an undisputed cause of accidents and incidents. I am also a realist and realize that most ship owners will not increase the staffing levels onboard ships unless forced to by legislation. I would urge the responsible administrations to re-visit the issue of safe manning certificates in the context of not only operating the ship safely but also ensuring that the operators’ workload is manageable, leaving sufficient time for other activities such as mentoring. Consider for a moment the number of ships in your region that have just two watch keeping officers, what chance is there for one to understudy the other when they are working 6 on and (theoretically) 6 off?

In this context I am pleased to report that some ship owners have considered this and provided an extra officer onboard their vessels to assist with the workload. On one tanker I was aboard recently the master had a young, newly qualified third mate to act as his secretary. This officer was also able to relieve another officer as necessary
on the bridge or on deck. The system worked admirably and what wonderful experiential knowledge that young officer was gaining in preparation for when he became Master.

Another suggestion comes from Rik F. van Hemmen in his paper 'The Need for Additional Human Factors Considerations in Ship Operations' where he suggests that an additional officer be carried as an environmental officer. This additional seafarer would be a chief officer or second engineer nearing promotion and he/she would deal with all the environmental requirements of the vessel whilst understudying the master or chief engineer. I believe that this position would also lend itself well to the concept of mentoring and the transfer of experiential knowledge.

6 CONCLUSIONS

'The fundamentals of seafaring (for deck officers in particular) have not changed over time. To put it simply – to get from A to B without hitting anything, running aground or sinking! For various reasons it appears that many do not understand the basics now at sea and that this lack of understanding is not caused only by a lack of training.'

There is no doubt in my mind that the loss of the transfer of experiential knowledge by mentoring is a problem within today’s merchant fleet. My research provides evidence, but I have also seen it with my own eyes, particularly over the last ten years, as a pilot and now as a marine consultant. It is not a ‘headline’ problem like fatigue and to the best of my knowledge has yet to be cited during a root cause analysis. But it exists and it needs to be addressed.

Is it too late? It certainly is a challenge, especially when it is the most senior officers that lack the experiential knowledge. But on the plus side it is a problem that can be solved, where anyone can instigate change, whatever their position. I respectfully challenge everyone to engage in this conversation, to reflect on the vast amount of knowledge that you have and to take a few minutes out of your busy schedules to pass a piece of it on. It does not have to be much, but it may just be that ‘gem of wisdom’ that makes the difference in somebody’s life.

Consider also the experiences that you have had in your life to date, some are good and some are bad, but the knowledge that comes from those experiences can only ever be good. I personally believe that, as masters of our various trades, we have a traditional duty to pass on our knowledge through mentoring (or whatever you want to call it) and to put something back into our community of practice that has given us so much.

For, whilst this is but ‘a drop in the ocean - oceans are made of drops.’

7 REFERENCES & BIBLIOGRAPHY


APPENDIX "J"

UK MAIB REPORT ‘MAERSK DOVER/APOLLONIA/MAERSK VANCOUVER’
The following MAIB report is used to evidence how near misses can occur due to lack of experiential knowledge on the part of a watch keeping officer and time constraints on the master.

This is followed by a table detailing the accident and incident reports I have reviewed and whether I consider them useful to further evidence my research.

Finally, this Appendix contains an incident report published in Seaways and use to evidence the tragic consequences that can occur due in part to lack of mentoring.
SYNOPSIS

All times are UTC.

At 0735 on 17 October 2006, the officer of the watch (OOW) onboard the ro-ro passenger ferry *Maersk Dover*, which was en route from Dover to Dunkerque, received a VHF radio call from a deep sea pilot onboard the tanker *Apollonia*, telling him that *Maersk Dover* was passing too close. At that time, the two vessels were 1.9nm apart and, until then, *Maersk Dover*’s OOW was unaware of *Apollonia*’s presence, 40º on his starboard bow. The situation was exacerbated by the presence of a third vessel, *Maersk Vancouver*, which was overtaking *Apollonia* on her port side. *Maersk Dover* was making 21 knots.

A close-quarters situation developed. *Maersk Dover* took last minute avoiding action, passing 5 cables ahead of *Maersk Vancouver* and 1 cable astern of *Apollonia*.

At 0714, the master of *Maersk Dover* had handed over the con to the oncoming OOW, the 2/O. They had both identified a suitable gap between two groups of vessels prior to crossing the south-west traffic lane and, using the port ARPA display, the 2/O had acquired relevant contacts transiting that lane. Visibility was 4-5nm. A QM was employed continuously on the bridge, and at sea he was nominated as the dedicated lookout. However, on this occasion he had been allowed to continue cleaning the bridge, a task he had commenced earlier that morning while the vessel was alongside at Dover.

At 0726, a SAT C alarm sounded at the rear of the bridge. The 2/O investigated and, believing that the commercial message was important, telephoned the master to brief him on its content. He sat on the footrest of the port bridge chair to make the call and, as a consequence, his view through the wheelhouse window was considerably restricted. He finished talking to the master 5 minutes later, and then proceeded to fix the vessel’s position before making a VHF radio call to Dunkerque Port.

The VHF radio call from *Apollonia*’s pilot alerted the 2/O to the presence of the two vessels close on his starboard bow, by which time there had been no proper lookout maintained on the bridge of *Maersk Dover* for nearly 9 minutes.

The 2/O initially made a succession of small alterations of course to starboard using the automatic pilot, but then requested the QM to begin hand steering to manoeuvre between the two vessels. The QM was not given a helm order, or a course to steer, and instead was given broad directions on what he should do. During the manoeuvre, the 2/O noticed that neither vessel was showing on the port radar display.

Only when the 2/O overheard a VHF radio call between *Apollonia*’s pilot and Dover coastguard, did he inform *Maersk Dover*’s master of the incident. The master went to the bridge and, on examining the port radar display, found the automatic tuning facility was not operating correctly. By twice reverting to manual tuning, the radar picture was eventually recovered.

This was the second close-quarters situation that *Maersk Dover* had been involved in since it started cross-Channel operations in August 2006. Some of the contributory factors were common to both incidents.
Standard practice was for the master to hand over the watch to the OOW before the vessel altered course to cross the traffic separation scheme; he would then leave the bridge. Handing over at this position, particularly at night, gave the OOW little time to become fully acquainted with the traffic and navigational situation. Had the master remained on the bridge for longer, he could have provided support and advice to the OOW, and would have been better placed to monitor his performance. He might then have queried the OOW’s level of experience and expertise, and doubled-up on the watch until he had achieved the necessary competence.

Although there was a QM on the bridge, available for lookout duties, poor bridge management had allowed him to become involved in other, inappropriate tasks. The situation was exacerbated when the OOW became unnecessarily distracted by the SAT C message and the conversation that followed with the master. When the OOW sat on the footrest of the bridge chair, there was no-one keeping either a radar or a visual lookout on the bridge.

Common to both incidents was the speed with which the close-quarters situation developed. The speeds of the vessels involved were in excess of 20 knots, leaving little time to take avoiding action. The OOW’s ability to detect, evaluate, and then take effective action was seriously compromised by his lack of attention to, and distractions from, his watchkeeping duties.

Maersk Marine Services has been recommended, for its cross-Channel ferry operations, to:

- Introduce procedures to ensure that before OOWs keep their first unsupervised watch: they have been assessed by the master to confirm they are fully competent to keep a safe navigation watch; and have been fully trained and locally assessed on type specific bridge equipment.

- Identify sources of distraction for bridge watchkeepers, and introduce measures to minimise these. Such measures should include procedures for handling routine commercial message traffic away from the bridge.

- Review the tasks and workload of masters, to allow them to spend as much time on the bridge as circumstances require.

- In light of the increasing speed of ferries and of transiting traffic in the Dover Strait, and in view of the enhanced arrangements utilised by high speed ferries, risk assess the route to determine the optimum arrangements for the maintenance of safe navigation.
<table>
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<tr>
<th>Name of Vessel</th>
<th>Type of Incident</th>
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<th>Source</th>
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<td>Allision</td>
<td>7 NOV 2007</td>
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<td>17 OCT 2006</td>
<td><a href="http://www.maib.gov.uk">www.maib.gov.uk</a></td>
<td>10 NOV 2008</td>
<td>VR. Master could have avoided this by mentoring</td>
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<td>PICTON CASTLE</td>
<td>Death - lost overboard</td>
<td>8 DEC 2006</td>
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<td>Strike &amp; Sinking</td>
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<td>Death of Crew</td>
<td>18 JAN 2008</td>
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<td>18 FEB 2008</td>
<td><a href="http://www.maib.gov.uk">www.maib.gov.uk</a></td>
<td>10 NOV 2008</td>
<td>VVR. Master only one capable of steering</td>
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<td>Allision</td>
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While coasting at the end of a trans-Pacific passage, a training module was planned for two deck cadets after lunch on the bridge. Only one cadet showed up and attempts to find the other proved futile. The crew was mustered and a search began. Some crew members reported that the missing cadet had been seen before lunch, heading out of the accommodation.

When an initial search failed to locate him, the ship was turned around and a track line search commenced. Urgency messages were transmitted on VHF channel 16, and was repeated in intervals of 15 minutes. The coastal authorities were also informed via Inmarsat.

The weather then steadily turned worse, with heavy squally showers affecting visibility and raising a sea of around three metres. By nightfall, several vessels joined in the SAR operations. Finally, at around noon on the following day, one of the participating ships sighted the cadet, still apparently alive. With two other vessels standing by, she lowered a lifeboat to recover the cadet. Unfortunately, the lifeboat was unable to make much progress in the still heavy sea conditions. Observing this, one of the assisting ships manoeuvred to a better position upwind of the cadet and launched the leeside lifeboat. The cadet was duly recovered and after initial first aid on board the rescuing ship, his condition was stabilised. The operation was terminated and all ships resumed their respective voyages. After arrival in port, the cadet was transferred back to his ship where investigations and interviews were held.

Root cause / contributory factors
The cadet apparently felt alienated and victimised, as a majority of the other crew members were of a different nationality;
Due to severe home-sickness, and perhaps a lack of proper counselling on board, the cadet decided to commit suicide by jumping overboard.

Lessons learnt
Inter-personal relationships between crew members should be closely and unobtrusively monitored by senior officers.
Cases of bullying, alienation and depression should be quickly detected and the victim's grievances should be resolved fairly.
With assistance from the company and radio medical services, appropriate medication may be administered and a crew member suffering from depression kept off work and under continuous supervision, if appropriate.
Cadets and new entrants to the seafaring profession must be given particular attention.
Special care should be taken by companies and manning agents to ensure that every recruit is physically and mentally fit.

Editor's note: Seafarers may not be trained in psychology but many, with maturity, develop a 'feel' for detecting and knack for dealing with personal problems among their colleagues. Given the enclosed working environment on board ship, senior officers and ratings should interact openly with younger colleagues, and with trainees in particular, and play the role of friend, trainer and mentor. The master and senior officers should certainly show everyone that they are approachable, have a sympathetic ear and can come up with practical and acceptable solutions. Whenever conditions permit, a party or similar social get-together can provide a welcome break from set and stressful routines on board.
APPENDIX "K"

EXTRACTS FROM LEARNING DIARY
APPENDIX K - REFLECTIVE DIARY – EXTRACTS

Extract 1 – ‘Onboard VESSEL working with Dutch Salvors on a multi-national vessel where the common language is English. Interesting ethnographically to note the difference in the level of transfer when they are speaking English or Dutch. Fantastic triangulation of knowledge. I have propose this theory of the need to use a common language but I am now experiencing the difficulty myself as I struggle to understand the methodology they are utilizing, when they speak Dutch.

Extract 2 – ‘Onboard VESSEL and chatting with the master about the effects of fatigue. Master advised that he was on 6 on / 6 off with the mate, and they were the only two navigational watch keepers onboard this short sea trade RoRo/Passenger vessel. Each tour of duty was 9 moths long. One night, just prior to a course alteration to avoid a navigation hazard, the master made a cup of tea and was stood, leaning against the bulkhead to drink it. He was so tired that he fell asleep standing up but luckily split the hot tea down his front, which woke him up in time to make the course alteration.

Extract 3 – ‘Bounded Rationality, this may just be the crux of the problem. Because junior officers are not receiving the experiential knowledge their ability to deal with an unfamiliar situation is limited to what they know. Therefore, their choice of behavior is equally limited in their response. This requires further research and inclusion in the book.

Extract 4 – ‘Reflecting on the effect the study has had on my work:

1. XX taking my experience matrix to London for potential use in offices worldwide. This was a product of RAL.

2. Overheard XX telling XX to speak to me regarding latest thoughts on reporting, as I was up to date on the latest requirements due to my degree work. He has noticed a change since I started; therefore I am effecting change.

3. Discussing the ‘product’ with XX as part of the new QA procedure being introduced. Reflected on what we provide and the company statement in the QA procedure that the report is our only and most important product. I disagree with this – we are selling time and our product of this sale is the betterment of the situation. This should tie closely to our marketing, i.e. how we can better a situation by being there e.g. experience, communication and worldwide technical advice. Prior to my degree studies I did not think in this manner and could not contribute in the way I am contributing now.
4. In the new QA manual the QA system, which I helped formalize has been incorporated. Also, since I began this degree, I have instigated the concept of peer review and this has been incorporated into the QA manual. This is an example of how I have diffused my knowledge by example into an important system and effected change uncontentiously.

Extract 5 – ‘Experience changes ideas about what should happen into knowledge of what does happen’ WK pp.8.

For the book consider section on briefing and de-briefing. Toolbox talks and lessons learned. Cite COMPANY pre-departure briefing on the bridge and other for cargo operations. Why shouldn’t you have one prior to discharging a bulk carrier? At these meetings ‘gems of wisdom’ can be passed on – must be in a common language (good practice) and can be used to reinforce lessons previously learned.

Extract 6 – ‘Although there are exceptions, probably the most stressful time for a master is with a new watch keeper, so start by spending 10 minutes developing a list of the most important skills necessary to make you feel comfortable. Explain that you understand that she is a qualified watch keeper and fully competent to keep watches but there are things that make you sleep better at night.

Explain the importance of each skill in your own personal context – why it is important to you and get the candidate to agree to comply. Ensure that they understand it, especially if of a different language.

The mate could do this for a cargo watch or the chief engineer in the engine room. Develop the concept during a senior officers meeting.

All the above has come from the book ‘Teach What You Know’. This has been a major development in my project as I have identified one way of starting the flow of experiential knowledge as a need based concept.
APPENDIX "L"

DISCUSSION OF DECLINE OF MERCHANT FLEET IN 1980’S
APPENDIX L – DECLINE OF THE MERCHANT FLEET

The 1980’s were a period of steep decline for the British Merchant Navy. As an example I joined Cunard Shipping Services Ltd., the cargo division of the Cunard Group, in 1980 with the opportunity to sail on any one of 39 vessels. I resigned in 1989 with just 6 vessels remaining within the fleet.

The following is an extract from a UK Government White Paper that clearly depicts, and provides some explanation for, this decline:

Chart 3: Officers and Ratings serving on board vessels entered with the Chamber of Shipping from 1980 to 1997

Based on 1997 data, it is estimated that Chamber of Shipping Members employ around 40% of UK Officers at sea and 73% of UK Ratings.

Source: Chamber of Shipping Fleet and Manpower inquiry data reproduced in Department of Transport Merchant Fleet Statistics, various years

* Chamber of Shipping Forecasts

Reasons for Decline

Changes in trade patterns

33. The reasons for the decline in the UK merchant navy are complex. The growth of the developing and newly industrialised economies has reduced western industrialised nations’ share of world shipping, as it has their share of
other industries. Changing patterns of world seaborne trade have shifted the geographical focus of growth towards different trading routes, in particular those to, from and within the Far East.

**Globalisation**

34. The globalisation of the world economy has reinforced the inherent and unique internationalism and fluidity of the shipping industry, while over the same period the industry has become vastly more productive, with very much larger, faster ships and new techniques such as containerisation. Simultaneously, these technical advances have dramatically reduced the numbers of seafarers needed on a ship. They have also led to periods of over-capacity in one sector or another, and in some cases they have reduced the threshold for entry into the industry. As a result, the UK shipping industry has faced growing low-cost competition abroad - especially from fleets of the newly industrialised countries of the Far East and increasingly from ships crewed with both officers and ratings from South East Asia and from the former Soviet bloc.

35. These developments continue to affect shipping in many countries. But the decline in the UK merchant navy has been steeper than in many others, and has accelerated over the last couple of years while the decline in the fleets of a number of other traditional maritime nations has reversed. There is one clear and continuing factor: shipowners have found it too expensive to continue to operate with British seafarers, on the UK register and under the UK tax regime. Against a background of increasing globalisation, key contributors to this situation are: the impact of unequal competition; labour and regulatory costs; and flag competition.

**Unequal competition**

36. UK shipping has had to contend with unequal competition from two different sources: sub-standard and subsidised shipping. Sub-standard ships, often operating under 'flags of convenience', with low paid and generally poorly trained crews benefit from the cost advantage of lax safety regulation. Other shipping
lines, based in developed countries (including members of the European Community) and operating under their national flags, are crewed by well-trained and relatively highly paid seafarers with good safety standards but benefit from government subsidies and tax concessions provided to compensate them for the extra costs of that.


The above extract gives just 3 reasons for the decline of the merchant fleet, but each has had a significant effect on the manning of the ships and ultimately on the transfer of experiential knowledge to which I am referring in this project.
APPENDIX "M"

SUGGESTIONS FOR SHARING EXPERIENTIAL KNOWLEDGE
APPENDIX M – SUGGESTIONS FOR SHARING KNOWLEDGE

The following are suggestions for sharing experiential knowledge in today’s merchant navy:

1. Raise standards and conditions  
2. Improve quality of college trainers  
3. Increase staff  
4. Mentoring – one to one training  
5. Instill a desire to be known as a professional mariner  
6. Keep officers and crew together  
7. Electronic sharing of knowledge  
8. Better structured progression through the ranks  
9. Use of simulators  
10. Making time to share  
11. Management (organisational level) involvement  
12. Hands on training  
13. Promulgation of accident investigation reports  
14. Social and formal interaction between the professions  
15. Root source training  
16. Senior officer compliance – setting an example  
17. Recognition of requirements of regulations  
18. Training record incorporated into the ISM  
19. Train candidates to receive information  
20. Training period prior to promotion  
21. Pre-vessel training  
22. Training ships  
23. Teaching respect  
24. Use of pilots as trainers in ship handling  
25. Covering rank above  
26. Acceptance there is a problem  
27. Shift attitude to STCW  
28. What if training  
29. Stop multi-national crews  
30. Address maintenance experience  
31. Briefings / toolbox talks / interactive training  
32. Open communications  
33. Greater co-operation to share learning events