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OVERVIEW AND INTRODUCTION

Dr Helen Sampson

The Seafarers International Research Centre was established in 1995 as a centre focussing upon occupational health and safety issues in the shipping industry. Since then it has grown in terms of its breadth and scope. The years 2000-2003 saw the development of a series of regional labour market research projects alongside the growth of an international Global Labour Market survey, which proved a useful tool to many seeking to analyse crewing in the twenty-first century. The last two years have seen a move back towards its roots, however, with the establishment of the Lloyd's Register Research Unit (LRRU), within SIRC, and the development and completion of projects which relate more directly to issues of seafarer, health, safety, and welfare.

The 2005 symposium reflects this shift in direction whilst still maintaining a broad coverage of a range of issues and research projects. In the opening sessions papers upon regulation and seafarer abandonment will be delivered. These will be followed by a paper on China and several related, more directly, to traditional concerns of occupational health and safety research.

In 2003-4, SIRC undertook a project focussed upon seafarer certification. The study built upon previous research within the Centre conducted on behalf of the IMO and documenting the ease with which fraudulent certification can be obtained. Nik Winchester's paper is interesting in revealing the extent to which seafarer certification, presented to MET institutions and employers, is subject to minimal scrutiny allowing for the possibility that fraudulently obtained certificates can be used to secure employment and enrolment onto CoC courses. Once a CoC is issued, assumptions are made across the sector relating to the existence of the requisite certification underpinning it. In fact, these assumptions may be incorrect. There is the possibility, given current practice, that seafarers have not presented valid certificates to college staff and that these have been mistakenly accepted in the absence of thorough verification. Perhaps more seriously, the study revealed gaps in

the verification practice of some Maritime Administrations when issuing endorsements.

These issues of effective regulation and enforcement are of critical relevance to seafarer health and safety. Untrained, and incompetent, officers put the lives of fellow crew members at risk, and pose a severe safety risk to their subordinates who rely upon them to determine safe working practices and to undertake realistic risk assessments prior to the allocation of work. SIRC research indicates that unqualified people do, still, slip through the regulatory net and this view is supported by anecdotal evidence emanating from employers and seafarers who have directly encountered such individuals.

Erol Kahveci's paper on seafarer abandonment deals with issues that are equally serious in terms of seafarer health and safety. His research on abandonment began in the early days of SIRC and has been updated by him on a regular basis. The story of the abandonment of the *Obo Basak* in Dunkirk in 1997 is still to reach its conclusion. In telling it today, however, it becomes clear that the issue of greatest concern is not the issue of financial compensation (important as this is) but the impact of abandonment on seafarers' health and welfare. The case of the *Obo Basak* documents the conditions under which the seafarers are forced to subsist, for many months, with minimal support. In OECD countries today, it would be considered quite unacceptable for workers ashore to be expected to live and work without access to secure supplies of fresh water, fruit, vegetables, heat, and light. Yet the case of the *Obo Basak* illustrates how this continues to occur in shipping with the full knowledge and complicity of a minority of employers.

The case reminds us of the importance of this issue and the need to push through measures to assist seafarers in distress, following vessel abandonment, as rapidly as possible. Additionally, the account highlights the vital role of charities, and volunteer workers, in assisting abandoned seafarers by providing them with food, fuel, and water, and the need to offer these bodies as much practical and financial support as possible.

On the second day of the Symposium we begin with a paper by Bin Wu outlining the complex employment arrangements of Chinese seafarers working for foreign companies and the affect of these upon their terms and conditions. China is an area that has attracted recent attention across the industry. In opening up the labour market the Chinese authorities have not fully relinquished control over employment matters and foreign companies may be frustrated by their inability to directly hire and train seafarers to their own specification. Similarly those wishing to safeguard and protect Chinese seafarers' employment terms and conditions, as well as their health and safety, may be frustrated in their ambition at the present time.

The case of China is an important one. Competition on the grounds of cheaper employment costs (lower wages but also poorer terms and conditions) could result in a further decline in living and working standards for all seafarers across the global labour market. We have seen that the conditions established for European officers are not generally replicated in the employment of nationals from other parts of the, developing, world (Filipino Captains, for example, may be expected to serve for six months on board compared with much shorter tours of duty for North Europeans). This situation currently poses a threat to the health and welfare of seafarers who remain subject to the same stresses, pressures, and emotional needs, regardless of their ethnic origin. Greater competition from China, on the basis of lower employment cost, is likely to further erode these standards and thus poses a potential health and welfare risk to all serving seafarers.

Following Bin's paper, David Walters offers further food for thought by delivering an account of some of the lessons learned in the development and implementation of improved health and safety standards in shore-based industries. Whilst shipping has its own specific context, and challenges, it also shares many similarities with other sectors in relation to occupational health and safety. The paper outlines some of these similarities and hints at the potential ways in which the experience of shore-based industries might be taken into account in developing effective health and safety management systems aboard ships. This paper is illustrative of the shift within SIRC towards issues directly relating to health and safety and this theme is further developed in the research that has been conducted in 2004-5 by the LRRU. Neil Ellis' paper outlines the findings of preliminary work (within the LRRU) that we have

carried out in developing a questionnaire for use with shore-staff, and sea-staff, in a variety of shipping trades in order to document understandings of risk across the industry. The questionnaire is currently being distributed and findings will be reported in 2006 (and possibly at the 2007 Symposium). However, in developing the questionnaire we conducted a series of focus groups and interviews with seafarers, and shore-staff, and felt that these yielded data of interest in their own right. Neil therefore offers an account of the risks identified by our participants and tentatively suggests what these might imply about safety culture. At this stage in the project it is, however, too early to arrive at conclusions about the strength of organisational safety cultures in the industry.

Running alongside this project, the LRRU has begun a study (again in its early stages) designed to consider training provision associated with the introduction of new technology on board merchant cargo vessels. A seven day intensive period of fieldwork in Dover revealed interesting data on the ways in which AIS is being used. We have built this project around AIS and Nick Bailey offers us an insight into the potential abuse, and misuse, of this new compulsory bit of 'kit' as well as the potential safety risks associated with its introduction. Subsequent data collection phases for the project will focus upon the extent to which training has been provided to seafarers, in the use of AIS, and the effectiveness of any supplied training. These data will be fully reported in due course, and once again may feature in the SIRC 2007 Symposium.

The papers presented here report on a variety of quite different projects that have been, or are being, undertaken at the Centre. Our invited audiences at these symposia are always diverse, and we are keen to disseminate our findings to representatives of a broad spectrum of interests from across the sector. I hope that you will all find the papers of interest. More than that: I hope you will participate freely in friendly discussion of the range of issues highlighted by our research. Arguably, they carry significance for all members of the maritime community whatever their core 'business' and perspective.

GLOBAL REGULATION OF SEAFARER CERTIFICATION[1]

Dr Nik Winchester

INTRODUCTION

The problem of fraudulent certification continues to provoke deep concern within the maritime community. Should they exist, the presence of seafarers plying their trade around the world without the necessary skills and qualifications needed to perform their duties would, self-evidently, be detrimental to the functioning of the maritime industry. Indeed, the maritime industry depends upon the professional qualities of these individuals for the safe and effective operation of vessels in the practice of world seaborne trade.

The development both of the system of open registers and a truly global labour market has meant that crews from a variety of nationalities, possessing a variety of certificates, regularly alight on vessels under a plethora of flags (Lane et al 2002). As they ply their trade across the world, their certificates become passports that enable their entrance into the global labour market. As they pursue qualifications in order to enhance their earning capacity, seafarers enrol themselves with a variety of training institutions, similarly spread across the world. On being engaged by companies and / or crewing agents, their qualifications legitimate their right to secure employment. Thus, seafarers' qualifications underpin their employment, and the sheaf of certificates that derive from both their training and their employment facilitate their continuing efforts to work.

[1] The author of this paper would like to acknowledge the contributions of Bernardo Obando-Rojas, as co-researcher on this project, and Tim Shelly and Neil Ellis, for assistance in the research.

CONTEXT

As training and certification has become fully internationalised, so too has the emphasis on the regulation of the system of certification shifted from the national to the global level. Attempts to address standards of certification have taken the form of regulation; of particular significance are the IMO's Convention on Standards of Training Certification and Watchkeeping, updated from the original STCW-78 convention (STCW-95), and the relevant provisions in the International Safety Management (ISM) Code within chapter IX of the Convention on Safety of Life at Sea (SOLAS). These provisions have concentrated on defining standards and outlining the rights and responsibilities of stakeholders in the maritime industry. Underpinning these conventions is the shift from the idea of the state as the sole site of regulatory authority, to the idea of the development of roles and duties outside of national administrations. In formal terms this has entailed the move from a system of 'national' or 'international' regulation to a mode of global governance (Held, 1993; Väyrynen, 1999).

In the formation of an effective regime of global governance for seafarer certification, they are two key elements. Firstly, the establishment of adequate internal procedures for the validation of certificates by institutions at which they are presented. Secondly, the relations between organisations issuing, and being presented with, certificates. If only the former element is present global governance is restricted to an increase in the number of institutions involved in regulatory practice. However, once these institutions relate to each other in meaningful ways, a change in quality occurs and a network of inter-linked regulatory bodies should emerge which, theoretically, increases the effectiveness of the practice of regulatory authority. Hence, in order to comprehend and gain insight into the practice of the regulation of seafarer certification it is necessary to consider both of these aspects of the regulatory process.

Rather than assessing the effectiveness of any single piece of legislation. In the following discussion, the aim will be to analyse the practice of regulation in terms of the relevant institutions and the relations between them. In so doing, it will identify strengths and weaknesses in the practice of regulation in the area of certification and discuss issues in the practical implementation of a regime of global governance.

CERTIFICATES

Seafarers typically possess a number of certificates obtained in the course of their work or training, these include:

- Certificate of Competency (CoC)
- Flag State Endorsement (FSE)
- Discharge book
- Sea service testimonials
- Ancillary certificates
- Medical certificate

The following sections describes these documents in further detail.

Certificate of Competency (CoC)

A Certificate of Competency (CoC) is the key document attesting to a seafarer's qualification. The document states the rank for which the seafarer is qualified and any restrictions on their sphere of operation, for example area of operation or type of vessel. Additionally it may contain information on specialist training, e.g. ability to serve on tankers. These certificates are issued by maritime administrations after a seafarer passes a prescribed examination and presents the relevant supporting documentation to enter the qualification process. The issuing authority of a CoC is dependant on where the seafarer undergoes their training, and not on the nationality of the seafarer.

In submitting an application for a CoC, a seafarer has to submit the appropriate main certificate underlying the application. For example, in applying for a Chief Mate's certificate, a seafarer will have to submit their Officer of the Watch certificate. The main underlying certificate is issued by a maritime administration which will be dependant upon where the seafarer studied and took the examination. These certificates may also be presented at different training establishments for enrolment onto long courses leading to a CoC.

Flag State Endorsement (FSE)

Flag State Endorsements[2] (FSEs) are issued by overseas administrations on the basis of recognition of a CoC. Under the requirements of the STCW-95 Convention, seafarers who serve on flags other than the one issuing their CoC are required to apply for an endorsement of recognition (FSE) issued by the relevant flag state.

As an example of the process, in the UK holders of CoC issued by foreign administrations who want to apply for a UK FSE are required to submit their CoC in support of their application. The MCA will only accept CoC issued by countries whose certificates have been recognised as equivalent by the UK administration. Foreign certificates are recognised by the administration after an evaluation is carried out with respect to training and certification provision.

Sea Service

A central element in the application process for most CoC is the demonstration of an adequate level of sea service to match the requirement for the certificate being sought by the applicant. The regulations concerning CoC state minimum service requirements that need to be acquired in order for a certificate to be issued; these vary by rank. Proof of sea service appears in two types of documents: Sea Service Testimonials and Discharge Books.

Discharge Book. This document outlines a full record of the time served by an individual seafarer. For each period of employment on board a vessel, the dates of service and details of the vessel are recorded. The latter is frequently noted by use of a stamp which contains basic information such as the vessel name, flag of vessel, Gross Tonnage and/or Net Tonnage. There is no standard form for the stamp, nor are there regulations concerning the information contained on a stamp; this information may also be filled in by hand, in ink. The details of service also contain the signature of the master of the vessel, acting as an accreditation of the service.

[2] Those issued by the UK are termed Certificates of Equivalent Competency.

Sea Service Testimonials. These documents constitute a further validation of the sea service outlined within the discharge book. They also contain a basic assessment of a seafarer's conduct, limited to either a simple phrase or a short paragraph. The information contained rarely deviates from the terms 'Good' or 'Very Good' concerning conduct, ability and sobriety; with the latter introducing the phrase 'Strictly Sober'. This fact indicates that the assessment component of a sea service testimonial is more a matter of custom and practice than an actual indication of the qualities of a seafarer. Testimonials are contained on a single sheet of paper. They may contain the letterhead of the company, a standard phraseology within its body incorporating dates served, assessment information, the signature of the master and frequently the stamp of the vessel. There is no standard format for testimonials and there are no security features of any kind. Some testimonials arrive with significant design elements from the company concerned or a standardised format deriving from a governmental body, whilst others are basic documents produced using word processors.

ANCILLARY CERTIFICATES

Seafarers possess ancillary certificates relating to qualifications such as proficiency in survival craft and rescue boats, advanced fire fighting, oil tanker familiarisation, medical first aid, or training in the Global Maritime Distress and Safety System (GMDSS). The certificate provided depends on the certificate being applied for. These certificates are issued by Maritime Education and Training (MET) establishments and come in a variety of styles deriving from a variety of institutions around the world. Ancillary certificates are issued on behalf of the maritime administration concerned by colleges which they have approved. The certificates have no common format and tend to have very basic security features and, on occasion, none at all.

Medical Certificate

In order to gain employment a seafarer has to possess a valid medical certificate that attests to an acceptable level of health deemed necessary for them to perform their

job; additionally every application for a CoC must include a valid medical fitness certificate. There is no global standard for medical certificates. Certificates are issued by various medical practitioners located across the globe. It is, however, common for maritime administrations to draw up a list of accepted medical certificates, in terms of both issuing countries and approved medical practitioners.

ANALYSIS

When a seafarer interacts with an institution for the purposes of gaining a certificate or employment, the institution is afforded the opportunity to inspect the qualities and qualifications of the individual concerned. In essence the institution is given the chance to exercise regulatory control at the point of intersection between the institution and the seafarer. There are two types of action which the institution can perform. Firstly it can make an assessment of the certificates presented and decide, based upon some criteria, to accept these certificates as valid. These can be termed 'internal' procedures as they take place solely within the institution as a discrete unit. Secondly, the body can adopt practices by which certificates are checked with another institution, commonly that which issued the certificate, for the purposes of verification. These can be characterised as 'external' procedures as they involve interaction with a separate external institution. To assess the practices of regulation within the system of seafarer certification, it is necessary to trace the exercise of regulatory authority along these two lines.

The attempt to define the operation and nature of the internal procedures and external relations within the complex and many layered networks of institutions within the maritime sector would require exhaustive research, beyond the scope of this paper. With this in mind, the paper is restricted to analysing the practices of a limited range of institutions that perform different functions. In so doing, it highlights indicative trends concerning the practice of regulation of seafarer certification and reaches preliminary conclusions in terms of its functioning.

The data in this paper is drawn from a larger project investigating regulatory practices involved in seafarer certification. The paper reports on a selection of institutions who receive and /or issue certificates. These institutions were selected to represent a range

of bodies involved in seafarer certification and include 3 Employers, 3 Maritime Education and Training Establishments and 5 Maritime Administrations involved in issuing FSEs. The research into the procedures is based on a mixture of methods. Staff in institutions based in the UK were interviewed face-to-face by the research team using a semi-structured interview guide. At two overseas organisations visited by the research team similar interviews were conducted; other overseas respondents were contacted by email and were sent electronic questionnaires. In addition, documentary data was collected concerning procedures relating to certification.

The following sections outline each of these institution's procedures in turn; each section concludes with a summary of the regulatory practices of the particular type of institution.

EMPLOYERS

Employer 1

Employer 1 possesses a small fleet of vessels, employing approximately 100 seafarers. For non-national seafarers[3], pre-employment checks of certificates and other documents are carried out by the crewing agencies within the country of origin of the seafarer. The employer does not directly verify any of the certificates with the issuing authorities or check references for agency employed personnel. All the verification procedures are left to crewing agencies in the seafarer's country of origin.

Certificate verification procedures are set out in the company's Safety Management Manual. When a non-national officer is employed, the guidelines state that the personnel manager of the recruiting agency will contact the issuing authority and request a traceable form of verification in order to establish the authenticity of the certificate prior to employment. For national seafarers, the guidelines prescribe that if the personnel manager decides that a prospective seafarer's certificate of competency

[3] The term 'non-national seafarers' refers to those seafarers whose certificates do not derive from the same country as the location of the institution, the term 'national seafarer' refers to where the state of issue of the certificate is equivalent to the location of the institution. Often there is a link between the nationality of a seafarer and the place from which their certificates is issued, but this is by no means always the case.

is suspect they shall consult with the issuing authority. The personnel manager of Employer 1 states that *'the company takes reasonable steps to verify certificates, by the contract we have with the manning agencies, in which we hope such checks will have been done for us. We also use visual verifications, and where possible check with the issuing institution.'* (Personnel Manager, Employer 1, 2004).

Employer 2

Employer 2 is a large company and acts as both a ship-owner and ship-manager of chartered tonnage. The company employs approximately 1700 seafarers from a variety of countries. Most officers are trained through its own cadet scheme. Junior officers who have not passed through the cadet scheme are mainly recruited from the Philippines through the company's own crewing agency in Manila. Other officers, mainly from Eastern Europe, are recruited on behalf of the employer by other vetted crewing agencies.

Employer 2 does not check ancillary certificates as they claim that these are arranged directly between the colleges and the employer and will be checked when the seafarer presents this documentation to obtain a CoC. The employer does require all colleges to send copies of seafarer's certificates on completion of a course.

For seafarers recruited at officer level through the employer's crewing agency, the agency carries out the verification of CoC with the issuing authority. In the case of seafarers holding Filipino certificates, these are checked online using the web-based checking facility of the Filipino maritime administration. For those seafarers not recruited through the employer's agency, it is assumed that the certificates have been verified by the relevant crewing agency. Ancillary certificates are not checked with issuing organisations, i.e. colleges or other training providers; in this case only a visual check of the certificate is carried out by the crewing agency. To safeguard against any fraud involving CoC or ancillary certificates, the employer will only recruit seafarers who have completed their training in vetted MET establishments. In other countries, the verification of certificates is left to local recruiting agents.

Employer 2 carries out a monthly check on the certification of their seagoing personnel. A randomly selected seafarer serving on the fleet is asked to provide a copy of all their certificates to the master. Copies of these are sent back to the head office. The personnel manager will check them visually to ensure that the seafarer carries all required certificates. No check is done with the issuing authorities. This check is more to do with ensuring that seafarers always carry the necessary certification rather than checking their authenticity.

In the case of seafarers recruited through an agency, the personnel manager of the company stated that *'the responsibility for detecting fraudulent certificates is down to the agency that recruits the seafarer, as we employed them to check this'*. He also adds that *'…any employment of seafarers not on our books is done through agents who we trust check certificates'* (Personnel Manager, Employer 2, 2004).

Employer 3

Employer 3's core business is the recruitment and placement of seafarers, both officers and ratings. The company does not own or manage vessels. The company maintains a pool of seafarers, i.e. personnel registered with the agency who may be employed through them or looking for employment. It places approximately 1,000 seafarers per year.

All candidates who register with Employer 3, have to submit an application form. Copies of certificates and relevant documents must be provided with this application. As part of a detailed pre-employment check the company attempts to verify all certificate copies received with the applications, which involves in-house cross referencing of sea time and certificate number. The certificates, however, are not checked with the issuing authorities, overseas administrations or colleges. Only visual checks are carried out by the screening staff. The company relies on their experience and judgement when checking these certificates. If there is any suspicion about the validity of a certificate they will contact their national maritime administration. References from ship owners are always checked, and the company will not employ anyone without references. As companies are not legally required to give references,

the company relies on its extensive network of contacts in other shipping companies to obtain them.

There are no prescribed or specific verification procedures set down by the organisation. The only checklists in use are to verify that the seafarer has all the certificates required for the rank being applied for. According to the company, the main obstacle in verifying certificates is the amount of time involved in checking them with the issuing bodies. It is claimed that it would be uneconomical for the company to check all certificates.

Table 1. Summary of Practices (Employers)

	Employer 1	Employer 2	Employer3
Type of Company	Ship-owner	Ship-owner Ship-manager	Crewing agency
Number of seafarers employed	100	1700	1,000 placements per year
Type of documents held by seafarers	CoC FSE	CoC FSE	CoC FSE
Verifies CoC with issuing administrations	Only national seafarers if certificate deemed suspicious, others by crewing agencies in seafarer's country of origin	Only for seafarers recruited through employer's agency. Other seafarers have been trained through their cadet scheme	No, unless there is cause for suspicion. No contact with overseas administrations
Verifies ancillary certificates with issuing colleges	No, only visual check	No, only visual check	No, only visual check
Relies on recruitment agencies to verify certificates of agency personnel	Yes	Yes	N/A

MARITIME EDUCATION AND TRAINING ESTABLISHMENTS (MET)

MET 1

MET 1 is part of a larger college in which over 1,000 students are involved in maritime training. MET 1 offers long courses for deck and engineering personnel from cadet to senior officer certification. The student body is approximately 60% national and 40% overseas. Short courses at MET 1 cover the full range of ancillary statutory courses for officers and ratings such as medical courses, sea survival and tanker cargo endorsement courses.

On enrolment, each candidate is expected to have all original certificates with them. Failure to produce these may result in the candidate being denied enrolment or a delay in a issue of the certificate at the end of the course. Proof of identity is also required. The college checks all certificates with a visual inspection. They do not contact any issuing administration (national or overseas), any employer, or any other college, to check the authenticity of the documents presented to them. The head of faculty stated that they do not have the resources or the knowledge to do this kind verification and that it is outside the remit of the college. For long course certificates, MET 1 relies entirely on the national administration to check all certificates and sea time when the candidate presents them to the governmental body for entrance into an examination.

A number of short courses require prior certification, e.g. the advanced fire fighting course requires candidates to have completed a basic fire fighting course. In order to gain the proficiency in sea-craft certificate a certain level of sea time is needed; a pre-requisite for medical first aid and medical care is the basic medical first aid course and one year of sea-time. In these cases, upon enrolment course tutors ask to see original certificates and will check documents visually. If there are any suspected problems tutors check certificates with their national administration, i.e. the administration in the same nation as the MET. The college verifies sea-time for some of the short courses and for enrolment on the long courses. This is checked by looking at entries in discharge books. Sea service testimonials are not required by the college.

MET 2

MET 2 is part of a larger college and offers marine courses for deck and engine personnel from cadet to senior officer certification. It also offers short courses for the marine, offshore and leisure sectors. There are over 1,000 annual enrolments for long courses. Approximately 50% of students for higher certificates are overseas nationals.

For enrolment onto long courses leading to a CoC, the only documents candidates are asked to produce are proofs of identity such as a passport or discharge book. On enrolment, all candidates are given all the necessary information on the certificates they need to provide and the requirements they need to meet in order to be eligible to apply to the national maritime administration for entry into the relevant examination.

MET 2 does not check any CoC (irrespective of its country of issue), discharge books or any other documents. The college operates on the premise that all candidates are *bona fide* individuals and so all verification is left to their national maritime administration. The Head of Faculty points out that *'I think the verification of certificates is to do mainly with the [national maritime administration] as the awarding body.'* (Head of Faculty, MET 2, 2004). It is the responsibility of the candidate to ensure that they meet all the criteria to be eligible to obtain a CoC once they finish the course.

For enrolment onto some short courses, candidates will have to present proof of identity and, if required, certificates from previous courses. In these cases, course lecturers check certificates visually and sign enrolment sheets confirming that original certificates have been checked. If for any reason lecturers have doubts about the authenticity of any certificate they will make a copy of the certificate and make a query to the relevant issuing authority or the issuing college. For short course certificates issued by overseas colleges, perhaps unknown to the lecturer, the certificate will be assumed to be genuine.

MET 3

MET 3 has an annual intake of 500 students for long courses leading to a CoC and 9,000 for short courses. About 70% of students enrolled on the long courses for chief mate and masters are overseas nationals; approximately 10% of all cadets are overseas nationals.

Applicants for long courses must present all their supporting documentation to course tutors upon enrolment. Candidates are also informed of the national requirements for entrance into examinations; it is the responsibility of candidates to apply to the national administration. For statutory short courses approved by the national administration, applicants are asked to present supporting certificates to their tutor to confirm their eligibility; these are visually checked by tutors. For non-statutory short courses applicants do not have to show any certification. MET 3 has internal procedures for the verification of certificates. However, there are no specific guidelines other than a checklist that is used at the time of enrolment.

The visual inspection of certificates relies entirely on the experience of tutors, who are aware of certificate requirements and the format of certificates. Tutors do not check any certificates against external sources, i.e. issuing administrations or colleges. Only if there is doubt about the validity of documents will these be checked with the national administration. CoC issued by overseas administrations and other certificates will only be verified if they look suspicious to tutors. In such cases verification of these documents is carried out through the national administration, which will in turn contact the issuing authorities or colleges.

Table 2. Summary of Practices (METs)

	MET 1	MET 2	MET 3
Verification of certificates on enrolment (long courses)			
Visually checked	Yes	Yes	Yes
Checked with national administration	No	No	No
Checked with other issuing admin or colleges	No	No	No
Verification of certificates on enrolment (short courses requiring prior certification)			
Visually checked	Yes	Yes	Yes
Checked with national administration	Yes, if suspicious	Yes, if suspicious	Yes, if suspicious
Checked with other issuing admin or colleges	No, if suspicious MET asks national administration to perform a check	Yes, only if suspicious and certificate from same nation as MET	No, if suspicious MET asks national administration to perform a check

MARITIME ADMINISTRATIONS (MA)

MA 1

MA 1 is a small[4] open register[5]. It receives an average of 250 applications per month to issue deck and engine officer endorsements of recognition. The administration states that in all instances underlying certificates are verified with the issuing authority using online verification tools, where they exist, or by email.

MA 2

MA 2 is a large open register. On a monthly basis, MA 2 receives approximately 1,000 applications for officer endorsements. MA 2 has established a network of Authorised Filing Agents in major seaports world-wide. These agents have contractual agreements with the administration with respect to reviewing and forwarding applications for crew documents. Amongst the items reviewed are applicants' national certificates. These certificates must be visually sighted by the filing agent, who is used to seeing authentic documents and, it is claimed, can usually detect a forgery. If the application appears to be in order, it is forwarded to MA 2's main office.

All permanent crew documents are issued from the head office and all records are maintained there. MA 2 does not accept applications for original crew documents from individuals. The first step in the evaluation process is to determine if the individual is already listed in their internal database. If that is the case, the administration will check to see if the individual has had their certificate or other documents suspended for any reason. In evaluating an application, all the information and certification is reviewed, including sea service, training certificates, as well as the copy of the national certificate. MA 2 has established a data file of valid, national certificates. Anyone evaluating the application can view a sample of a national certificate for comparison. If there is any reason to query a document, the

[4] These descriptive terms refer to the amount of registered tonnage appearing on the vessel register.

administration carries out a check with the appropriate issuing authority using fax email, or online verification. Approximately 15% of all applications undergo a verification procedure with the issuing authority.

MA 3

MA 3 is a medium sized open register. MA 3 receives some 600 officer applications per month for the issue of endorsements of recognition. All applications are checked to ensure that all the underlying documents are included and the information is entered into a database. CoC and ancillary certificates are checked visually by an evaluator. 60% of CoC are also checked with the issuing administration; mainly through email and online verification tools. Once all the criteria are met, the endorsement is printed and sent to the Deputy Commissioner for approval and signature.

MA 4

MA 4 is a large open register. MA 4 receives, on average 3,700 officer applications per month for the issue of endorsements of recognition. Applications for CoC, FSEs and other documents, such as seaman's book or GMDSS certificates, are handled through the network of consulates world-wide. Applications and supporting documentation can be filed in any consular office. The consul collects the fee and checks that all supporting documents appear to be correct. No verification checks are carried out at this point. On receipt of an application the consul issues the holder with a transitory endorsement valid for three months. The application is sent to one of the four regional offices authorised to issue FSEs and other documents. The underlying documentation is checked and verified by evaluators before a FSE is issued. The administration's head office reports that their evaluators verify 100% of all underlying documents. However this claim clashes with what the research team found in two regional offices. Here, evaluators stated that, due to the large volume of applications,

[5] Stopford defines open register as follows: 'open registers have been set up with the specific aim of offering shipowners a registration service, often as a means of earning revenue for the flag state.' (Stopford, 1997: 434).

certificates were not verified with the issuing administration, or college, unless there was a glaring discrepancy.

MA 5

MA 5 is a small second register[6]. MA 5 receives, on average, 70 monthly applications to issue officer endorsements of recognition. On receipt of an application the administration issues the holder with a transitory endorsement valid for three months. In all cases, evaluators contact the issuing administration to verify the authenticity of the certificate. For master and chief engineer certificates, applicants are required to sit an assessment concerning the administration's maritime legislation. Once all these conditions are met, a FSE is issued.

Table 3. Summary of Practices (Maritime Administrations)

	MA 1	MA 2	MA 3	MA 4	MA 5
Number of monthly endorsements issued (officers)	250	1000	600	3700	70
Percentage of certificates presented for verification (officers)	100%	15%	60%	100%	100%

DISCUSSION

Recalling the distinction between external procedures, i.e. ways of verifying certification that involve relations with institutions outside of their own, and internal procedures, i.e. verification practices that occur solely within an institution, it is possible to identify trends in the actions of institutions as they receive, verify and issue certificates.

In terms of their internal procedures all of the employers included in this study adopted similar positions. In the first instance certificates are sighted in order to check

[6] Second registers are vessel registers set up by states that provide a different regulatory framework to the main national register. They are either located within the state or in one of its overseas territories.

that seafarers possess the relevant qualifications. Additionally, certificates undergo a form of professional evaluation, i.e. for those within the institution the knowledge of certification gained throughout the course of their work history is utilised to make an assessment of the veracity of a document[7]. In the case of ancillary certificates, the indication is that inspections emphasise the existence of a certificate and not its qualities[8] In respect of CoC, the matter is materially different in that the visual inspection provokes, or can provoke, the practice of verifying a certificate with the issuing authority. In terms of their relations to institutions outside of their own, none of the employers possess formal relations with providers of ancillary certificates and references from employers are obtained and checked only via indirect means.

In the case of CoC, external relations exist, however employers adopt different strategies. Employer 3 treats a CoC as *prima facie* evidence of qualification and would only approach an issuing institution when internal assessment arouses suspicion – the internal procedure acts as a gatekeeper to the practice of external verification. Both Employers 1 and 3 restrict external procedures to certificates issued by their national administration. For certificates from outside their state of operation, it is presupposed that either a certificate is, by definition, valid or the assumption is made that another organisation that provides crew is satisfied that the certification is valid. In contrast, Employer 2 possesses external relations with overseas administrations, indeed it is a matter of procedure for the presentation of a CoC to result in an approach to an administration outside of their state. With employers, a clear distinction is made between types of certificates, ancillaries are visually sighted and checked for their simple existence. It is only in the case of CoC that employers might consider approaching an external organisation.

Turning to METs, once again there is some similarity in terms of their procedures. As with Employers, METs adopt a checklist and visual inspection approach to the internal treatment of certificates. The former is restricted to checking the simple existence of certain certificates, the latter relies on professional evaluation, and is

[7] Although Employer 2 carries out random checks of certificates, it is a difference in the number of checks performed and not their quality.

[8] Given that no common standard exists for such certificates, and seafarers will present them from a variety of institutions across the globe, verifying these certificates is substantially more complex and time-consuming.

underpinned by autonomously defined professional standards. In contrast to Employers, METs do not possess any formal external procedures for verification. Comments made by those within METs, suggest that they perceive regulatory authority to lie with the national administration that issues the certificate, and that the MET's role is not to contribute to this process. Any interaction with issuing administrations occurs only in the case of suspected fraud. METs do not see themselves as sites of regulatory authority nor as part of a system of institutions that form a regime of global governance.

In contrast to Employers and METs, a significant amount of legislative and administrative effort has focussed on the relations between maritime institutions for the purpose of issuing FSEs. Internal procedures for the inspection of FSE applications involves different levels of inspection which tend to coalesce around the meeting of requirements as set out in the appropriate legislation. An element of professional evaluation occurs, but in one of the MAs, there is a database of national CoC, against which comparisons may be made. Ancillary certificates, once again, are accorded a different status[9] and are not checked with issuing institutions. External relations are restricted to a maritime administration-to-maritime administration level for the verification of data, Whilst these states are afforded the opportunity to verify all CoC, two report levels of external verification significantly beneath 100%; another claims 100% verification but, according to individuals within the organisation, its practice falls short of its assertion.

Across these organisations, differing levels of priority are accorded to CoC and Ancillary Certificates, the former are considered central to the identification of a seafarer's qualifications, hence they have a propensity to undergo a process of verification. The latter are treated as somewhat ephemeral and are not verified at the point of presentation by the individual seafarer. However, this bifurcation between the two forms of certificates needs to be considered in terms of the relationship between certificate types. Whilst a CoC is a specific qualification resulting from a successful result in an examination, the eligibility requirements for a CoC state the need for extensive demonstration of prior qualification. The possession of a CoC implies the

[9] It should be noted that only a limited number of such certificates are presented in support of an application for a Flag State Endorsement.

possession of a plethora of certificates (e.g. Medical Certificate, Sea Service Testimonials, Various Ancillary Certificates) that have been seen and have been deemed acceptable to an administration. The manner in which METs, Employers and FSE issuing Maritime Administrations act suggests that CoC are taken to indicate the validity of *all* certificates that underpin them. The intersection of the seafarer and an institution whilst, theoretically, provoking the application of regulatory authority in practice results in the disavowal of the possibility of the exercise of such authority as inappropriate and unnecessary. State-to-state interactions take a similar form. The confirmation of the presented CoC with the state, where this occurs, is sufficient as a legitimation of a certificate and, by implication, all those certificates that have gone up to make the CoC a possibility; which, of course, can derive from multiple sites across the globe. When a process of verification does not occur, there is a systematic assumption that states possess robust and effective systems of regulatory authority.

CONCLUSION

Global governance is seen as an appropriate re-framing of regulatory practice in the complex global arrangements of the contemporary world. By emphasising the interrelationships across various institutions in global space, effective regulation becomes possible under extensively globalised conditions. The passage to such a regime is by no means a simple affair and requires the re-orientation of institutional actors to their roles and relationships. Within the system of seafarer certification there is an attempt to produce, what might be termed, a culture of verification at the institutional level. However, both the procedures adopted within institutions and the relations between them display key problems in terms of the production of a robust and effective system of global governance. The following policy recommendations address a number of key issues:

1. Harmonised certificate format. Seafarers possess many different types of certificates from a variety of different institutions. These certificates do not exhibit any harmonisation in terms of either security features or format. This limits the effectiveness of visual inspection of certificates as a means to check for fraud.

2. Enhanced communication between institutions. In order to verify certificates from the place of issue, there must be effective means of communication in place between issuing institutions. This can take the form of personal contacts, e.g. phone, fax or email, or web-based on-line verifying systems. Unless an effective and robust system of inter-institutional communication exists, then achieving high levels of verification is problematic.

3. Centralised database of certificates. When a certificate is issued, its details, and a copy of the certificate could be placed onto a centralised database that is accessible by all legitimate institutions. If this data source exited, then practices of verification could be enabled, making checking certificates an everyday and simple process. Although creating such a database may well be legislatively and administratively difficult, the gains are obvious.

4. Training in certification types and basic security features. The visual inspection of certificates represents a first step in detecting cases of fraud. However, the effectiveness of this practice depends upon the knowledge of those sighting the certificates. In order to enhance this process, it is necessary to provide training to those inspecting certificates relating to the key features of certificates of the different types from different institutions.

5. All certificates presented for verification. There is some indication that institutions are treating the presentation of a certificate as *prima facie* evidence of a qualification. Hence, in some cases, a certificate is only presented for verification when it seems suspicious. A change is practice is recommended to make the verification of all certificates a matter of common practice. Whilst presenting all certificates to issuing administrations and institutions seems impractical, it could be considered a desirable goal; a goal which could be enabled through the creation of either a centralised database and/or enhanced formal communication channels between institutions.

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ABANDONED SEAFARERS: THE CASE OF *OBO BASAK*

Dr Erol Kahveci

INTRODUCTION

The IMO and ILO have recognised that seafarer abandonment is a serious problem, and given the global nature of the industry seafarers need special protection. The Legal Committee of IMO, at its eighty-third session (October 2001) approved draft resolutions and related guidelines on the provision of financial security for abandoned seafarers. The guidelines were subsequently adopted by the IMO Assembly, at its twenty-second session in November 2001. The resolutions and guidelines were also adopted by the Governing Body of the ILO at its 282nd session (16 November 2001). Both resolutions and guidelines took effect on 1 January 2002.

Despite the IMO and ILO resolutions the problem of abandonment continues. For example, within the first six months 2002 the ITF recorded 89 cases of abandonment involving 1,780 crew members (ILO 2003). In the reported cases there was no suitable financial security in place to deal with the abandonment cases. The only assistance to seafarers came from seafarers' welfare organisations.

This paper provides a detailed case study of abandoned seafarers and focuses on the 1973-built, 103,235 dwt, Turkish flagged ore-bulk-oil carrier *Obo Basak* which was abandoned in Dunkirk between July 1997 and March 1998. It should be noted even 7 years after this abandonment case the seafarers involved are still engaged in a legal case for compensation. There are a growing number of studies demonstrating the extent of seafarer abandonment (Couper et al 1998; ITF 1999, Alderton et al 2004) and the experience of the *Obo Basak* crew is not untypical.

The paper is based on a series of in-depth interviews with 29 seafarers and their families. Some seafarers and their families were interviewed at various times over a 4-year period (1998 – 2002). Four group interviews were conducted with seafarers and their families. Further interviews were conducted with managers of Marti Shipping (the owners of *Obo Basak*), lawyers involved in the case, the ship's agent, and Dunkirk Port Authority employees. In addition 6 video tapes filmed by the bosun of the *Obo Basak* during the abandonment were analysed. The International Transport Worker Federation (ITF) and Mission to Seafarers files on the *Obo Basak* case in their London offices were also examined.

The story of the *Obo Basak*: Signs that things were going wrong!

Well before the Obo Basak's arrest in Dunkirk and the subsequent abandonment of its crew it became apparent to many aboard that all was not well. However while some seafarers chose to leave the vessel others did not. Some seafarers, who had been working for Marti for a long time and thought everything would settle soon, remained onboard. These seafarers decided to hang on out of loyalty. Others also remained onboard due to a lack of alternative options. Some were cadets and had no chance to leave the ship. It was important for cadets to complete their sea time for the successful completion of their studies and they were compelled by the captain to stay:

Marti shipping was chartered for 3 voyages by Sollac to deliver ore from Mauritania to their Dunkirk steel plant. For the first voyage *Obo Basak* left the Black Sea port of Eregli on 7 February 1997 for Mauritania. In Eregli, just before departure, 4 new deck cadets joined the ship. One of them was Haluk. It was Haluk's second cadetship at Marti. He tried very hard to get his cadetship on Marti's ships as it was a very prestigious company to work for. However, when he joined the ship he found the crew were already complaining that there had been some delays in salary payments and that the situation had got worse since January 1997.

Obo Basak finally delivered its cargo from Mauritania to Dunkirk on 25 February and left Dunkirk on 18 March in ballast, to load coal in Norfolk Virginia. The ship anchored off Norfolk on 3 April. On the second day at anchorage official papers were

posted on the bridge stating that the ship was under arrest on behalf of creditors. The bosun recorded on his camcorder that during his continuous 33 months onboard this was the second arrest that he had seen. The first arrest was in Brazil and had lasted one week.

The bosun started to work for Marti in 1992. He tried for more than a year to get a job in the company and in the end with the influence of a relative he succeeded. During his current contract he had been aboard the *Obo Basak* for 33 months (he stayed another 5 months till October 1997). Initially he wanted to have a long contract in order to save money to buy a house but his wife became seriously ill and he spent over $ 7000 on the medical expenses. This prolonged his stay aboard. However, all his savings gradually disappeared because his wages were not paid regularly.

While at anchor off Norfolk the bosun recorded that:

> The crew is very demoralised and stress is very high. We haven't received any money. There are rumours that Marti went bankrupt but no one knows anything. Some crew members say that there is news about the company in Turkish papers that it is in financial crisis. Is it just gossip or reality? The ship is arrested by creditors for $ 500.000 – we don't know what will happen. We are trapped here without any information. … (*recorded on 7 April 1997*).

The port chaplain in Norfolk knew the ship and the crew well and with his help some of the crew members were able to take shore leave. After talking to some of the crew, the port chaplain became very concerned about their welfare and unpaid wages and suggested that he could help the crew members to get their back wages through legal means. The ratings held a meeting in the messroom to explore the possible options but only one crew member was in favour of seeking legal action. The next day the ship was able to berth and loaded 50,000 tons of coal for Iskenderun – Turkish Eastern Mediterranean port. *Obo Basak* left Norfolk on circa 13 April. The crew was relieved that the next destination was Turkey.

On 23 April the bosun was in tears when he recorded on his camcorder that he had spoken to his wife over the ship's satellite phone and asked her to send 10m TL [circa $70] for him to Iskenderun – the next port of call. He also recorded that he cannot sleep at night and there are 10 days more to reach Iskenderun. However, the ship

dropped anchor in Gibraltar – for more than 10 days. During the time of anchor the bosun continued to record the events and the main emphasis was on the stress onboard and he mentioned often that they were waiting for fuel at the anchorage. Eventually the ship arrived in Iskenderun on 15 May.

In Iskenderun nine out of 21 crew members left the ship without receiving their back wages: the Radio officer, AB, Fitter, Pumpman, Welder, Oiler, Wiper, Second Cook and Steward. According to trainee cadet Haluk, the second officer had also left the ship leaving behind $ 18,000 unpaid back wages. Four cadets also expressed their desire to leave the ship but the captain refused. Haluk recollects:

> When the ship arrived in Iskenderun we had been aboard for three and half months. I went to see the captain with the other three cadets to tell him that we would like to leave the ship as none of us had received any money. The captain had blackmailed us and said that if we leave he would write negative reports for us. As we needed a good report to complete our studies - we were trapped. Later it became clear that as some deck officers left the ship they were short of officers. On our departure from Iskenderun one of the young officers who didn't leave the ship became the chief mate. He was only 4 years older then me. I became the third officer although I didn't have the right certificates. I hadn't even graduated from the school yet. The captain also gave me 50 million TL [$ 350] – that is the only money I had from the company during my 7 months stay onboard (*interviewed by EK, November 1998, the port of Felixstowe, UK*)

In Iskenderun the electrician Aydin telephoned his wife in Istanbul and asked her to bring some money. Aydin was the eldest member of the crew and was born in 1938. He had been at sea since January 1967. He started to work for Marti in 1991 with the influence of a friend who was a ship surveyor working for Marti. His friend encouraged him to work for Marti and said "they pay in green" (meaning in US$). When he telephoned his wife, Aydin had been onboard for 10 months and had not been paid for the last 6 months. His wife Semsa recollects:

> Aydin telephoned me from Iskendurun asking to take some money for him. I had a cheque from the company and went to cash it at the bank but it bounced. I went to the company and they gave me another post dated cheque. There was very little money in our bank account and I withdrew all and borrowed some more from the neighbours. I exchanged the money in $ currency and I took $500 to Iskenderun. I travelled there with a couple of other wives of *Obo Basak* crew by bus [over 18 hour's journey]. In Iskenderun I stayed aboard till the ship left. During my stay I asked Aydin so many times to return with me back to

> Istanbul as there were some people leaving the ship. Aydin said "no" that he had been working for the company since 1991 and had many happy days. He was also concerned that the company's difficulties would deepen if many people left. (*Interview by EK, 17 October 1999, Istanbul*).

The bosun had also received 10m TL from his wife. Like Aydin and Caner, many other seafarers got in touch with their families in order to get some money. The families were already in dire straits as in many cases the seafarers were the sole breadwinners for their families. Some families did their best to find money.

In order to stop the crew members leaving the ship Marti sent a telex to the ship. On 29 May 1997, the telex was posted on the ship's notice board. It read:

> Dear Captain XX [name withheld]
>
> Since November 1996 various incidents caused a cash crisis for the company. The reasons for this crisis include delays in ports, various groundings and collisions of our ships and for political reasons one of our creditor banks brought limitations to our use of credit. However, all the difficulties with our payments will be cleared next week and by the 6th June Friday [the date ship sailed from Iskenderun] we expect to pay all our outstanding debts. We would like to thank our staff for being patient and understanding.
> Regards
> [*MtS File, translated from Turkish by EK*]

In fact, three days after the telex, Marti re-mortgaged the ship for the third time and received $2.5m from a Turkish bank. The document on the *Obo Basak*'s mortgage record (Ship's mortgages usufruct) shows that between 1995 and 1997 Denmar mortgaged the ship 3 times for the total amount of $26.5m. The first mortgage was on 2 December 1995 for $5m by Turk Ticaret Bankasi A.S. (Turkish Bank of Commerce); the second mortgage was on 1 March 1996 for $19m by Faysal Islamci Bank of Bahrain E.C. (Faysal Islamic Bank); and the third one was on 2 June 1997 for $2.5m by again Turk Ticaret Bankasi A.S. (*MtS Files, Letter sent to MtS, Dunkirk by Lawyer Maitre Carlier, 15 January 1998*).

Despite the fact that company received $2.5m when the *Obo Basak* was in Iskenderun not much money filtered through to the crew. In Iskenderun, to slow the crew exodus, the captain had paid 5m TL (circa $35 in May 1997 exchange rate) to each rating - the

lowest paid crew member's monthly salary was $ 500. The company also tried to fill the positions of seafarers who left the ship.

Yilmaz was an oiler who had been working for Marti since 1986. Yilmaz said that it was not easy to get job in Marti as the company required a reference from someone who was known to them. They also required a minimum of 4 years work experience. Yilmaz's first application to the company was rejected but when he went to try his luck a second time he saw a chief engineer who was working for Marti. Yilmaz had worked with him before and the chief engineer told the personnel director to take Yilmaz immediately.

In mid May 1997 Marti contacted Yilmaz. He recollects:

> I signed off from another ship of Marti – *Obo Deniz*. The company owed me 7.5 months salaries for my service onboard of *Obo Deniz*. I went to their office [in Istanbul] to get my money. They said that they would pay me if I join the *Obo Basak* in Iskenderun. On 16 May they gave me a post dated cheque for the 27 May. Although the amount [about $2000] didn't cover all my back wages I accepted it. I left the cheque with my wife and I joined the ship in Iskenderun on the 17 May (*interviewed by EK, 21 October 1998, Cinarcik, Yalova*).

Before departure from Iskenderun Yilmaz telephoned his wife and mentioned to her the telex received from the company and that all the outstanding debts would be cleared by 6 June. He advised his wife to cash the cheque on that day. However, when Yilmaz telephoned his wife later from Dunkirk he learned that his wife went to the bank on 6 June to cash the cheque but the cheque was bounced once again.

Murat had had a small metal workshop but during the first Gulf War in 1990 the Turkish economy was hit badly and he had to close his shop down. He started to work for Sonmez Shipping but soon they also went bankrupt. He managed to get work in Marti in 1992. Murat was also one of the crew members who joined the *Obo Basak* in Iskenderun and he recollects:

> I had been working for Marti since 1992. I worked on various ships of the company as well as in its workshops – called Kamar. I had not received my salary since January 1997 – they gave me just a little pocket money once or twice. On the 20 May 1997 while I was working at Kamar I received a phone

> call from the personnel director of the company. He told me to pack my belongings and go to Iskenderun to join the *Obo Basak*. I said but I don't have any money and my children are hungry. He said "don't worry about it you just join the ship" (*interview by EK, 15 October 1998, Istanbul*).

On the 6th of June *Obo Basak* left Iskenderun in ballast, once again to deliver ore for Sollac from Mauritania to Dunkirk. Murat continues to recollect:

> Between Iskenderun and Dunkirk for over a month I was not able to contact my family to find out whether they received any money from the company. There were no cigarettes, no soft drinks or anything like that in the ship's store. In Dunkirk I learned that my family received no money and that was worse than anything else. (*interview by EK, 15 October 1998, Istanbul*)

In Mauritania while the ship was loading ore for Dunkirk the second officer, the captain's nephew, signed off unexpectedly. Haluk became second officer and his position as a third officer was filled up by another trainee cadet Cem. Within a month therefore Haluk had been promoted from trainee cadet to 3rd officer then to 2nd officer. The *Obo Basak* left Mauritania with 30 crew members aboard – 5 officers, 4 deck cadets (two of them – Haluk and Cem - were listed as deck officers) and 21 ratings (including petty officers - electrician, radio officer etc.).

Being abandoned: conflict, charity and choices

In Dunkirk particularly, ratings did not know about the arrest of the vessel by the creditors of Marti Shipping and they learned of the situation a week after the arrest. The Mission to Seafarers port chaplain provided assistance and informed the local ITF inspector about the situation of the crew. Seafarers faced a dilemma in relation to deciding whether to take legal action against the company or not. The seafarers on board were of different opinions. Some refused to take legal action on the basis of loyalty but some had mixed feelings and their loyalties were challenged by the material conditions of their families at home. With the passage of time the financial situation of families at home worsened and without any other option the seafarers were forced to join the other creditors and took legal action against their company. However, Marti responded by sending dismissal letters to crew members who applied to the French courts to recover their unpaid wages:

On arrival in Dunkirk, on 8 July 1997, the ship had many more visitors than usual. When the cargo discharging was finished, the ship was moved to a waiting berth. The ratings started to feel that something unusual was going on. Some saw a paper glued on the bridge door in French and asked the ship's agent what the paper said. The agent told the ratings that the ship was under arrest.

In the first instance there were nine parties involved in the arrest of the ship, with claims against the ship totalling $4m. As we have seen the ratings of *Obo Basak* learned the news a week after the actual arrest. Zeynel, the cook, explained that the crew did not know what to do:

> We trusted the company and we worked unpaid for months, but what else could we do. Of course you would work, if you don't where can you go? We're in the middle of the sea most of the time. We didn't know anything about our rights and maritime law. We didn't know where to go, how to complain or who to complain to. Our problems were first noticed by the Russian captain of the ship berthed next to us in Dunkirk and he informed the Mission. If that hadn't happened no one would have protected us. (*interview by EK, 15 October, 1999, Istanbul*).

The Russian captain contacted the Missions to Seafarers' port chaplain and he immediately started to deal with the welfare of the crew and informed the ITF. The local ITF inspector visited the ship and held a meeting with the crew and told them about their legal rights. He also made it clear that he could not take any action against the company unless they made a formal complaint. Although the crew became aware of their rights they were divided about the ITF involvement and making a formal complaint concerning their condition. There were different opinions among the crew, represented by two different groups of seafarers: those who had worked for Marti for a long; time and those who were newly recruited. The first group mainly consisted of Yilmaz (Oiler), Husnu (AB), Caner (Bosun) and Aydin (electrician). These seafarers had been working for the company for 12, 12, 7 and 7 years respectively. They talked about a similar situation in the mid 1980s when the company was not able to pay the crew for 3 months but when it then sold a brand new coaster and eventually paid all due back wages.

Yilmaz remembers that in Dunkirk, Mustafa (oiler), Serkan (AB) and Erol (OS) who were in favour of the ITF involvement, frequently came to his cabin to talk about the situation. Yilmaz told them many times that the company keeps young seafarers' wages for a couple of months to stop the seafarers deserting the ship in the US and other places like that. But on telephoning his wife he himself, realised the situation was more serious than this. He explained:

> When I spoke to my wife from Dunkirk she told me that the cheque that Marti gave me to join the ship was bounced on the 6th of June and she has been to the company everyday since then only to receive abusive treatment and there was nothing to eat at home (*interview by EK, 15 October 1998, Istanbul*).

Yilmaz also recollected that during a tea break in the crew messroom Aydin mentioned that his cheque had also bounced and suggested to Caner that they would have to do something as the company was taking advantage of their loyalty. Caner was very cross with him. The situation became so heated that other crew members had to become involved to separate the two. However, the very next day the situation had changed and crew members recollect that Caner walked into the crews' messroom in tears. He had just spoken to his wife and learned how she and the other seafarers' wives had been treated by the company. Caner recollects the telephone conversation between him and his wife and his thoughts afterwards:

> That day, when I telephoned her, she said that she had just come back from the company and they told her not to disturb them again. My wife told them that she didn't have any money and asked them what they expected her to do. Did they expect her to sell her body on the streets? She was crying over the phone, when I heard my wife telling me all this, I felt that the whole world was collapsed over me. I gave my everything to the company - I worked under very difficult and unsafe conditions. I wanted them to run the ship and make money. They were like my second family. In return they should give at least a little money to live on but instead to get that sort of treatment affected me very badly (*Interview by EK, 16 October 1999, Istanbul*).

At this point twenty-four members of the crew took the decision to approach the port chaplain and expressed their desire to take legal action against the company. The local chaplain contacted the ITF headquarters in London and they advised the local inspector to visit the ship to obtain power of attorney forms from the seafarers

involved. In late June 1997 the ITF Inspector visited the ship and 24 crew members out of thirty signed power of attorney forms including the cadets, the radio officer and the electrician. Only the captain, chief engineer, chief officer, second and third engineers and one rating refused to sign. In consultation with the crew the ITF inspector's calculation of the total back wages due amounted to approximately $95,000. The captain and the chief engineer abandoned the ship the day after the visit of the ITF inspector. On the 29 July the ITF co-ordinator for France sent a strong letter asking Marti what it intended to do to settle the back wages in full as well as to provide for proper repatriation once this was done (*ITF Files, letter by James Smith, 29 July 1997*). However, 2 weeks later Marti responded with a telex announcing that contracts of the crew who had taken legal action were terminated (*MtS Files, Dunkirk*).

Daily work and provisions aboard

When seafarers are abandoned they are confined to their vessel which is also their work place. There are still many daily tasks to be done and the ship needs to be maintained and kept secure. Abandoned seafarers can hardly abandon their work, and duties aboard for the Obo Basak crew were not any different. Again like many other abandoned seafarers the Obo Basak crew lacked provisions onboard and their appeal to the community in Dunkirk and beyond had a very positive response. In this respect they were fortunate compared to some other abandoned seafarers. There are cases of abandonment where seafarers report that they needed to collect rain water to drink or rely on their abilities to catch fish to eat:

Despite all the turmoil, the *Obo Basak* crew continued to work hard and continued to do repair and maintenance work as the French *Affaires Maritimes* affirmed after a technical inspection on 20 July finding nothing wrong with the ship. The ship's agent in Dunkirk said that the crew kept the ship in good condition:

> We didn't get a cent from Marti for our services but we continued to act as the ship's agent and one of the main reasons for this was the *Obo Basak* crew.

> There was no risk for us because none of the crew went in town to break or steal things. Every crew member remained proud and dignified. There was no riot onboard. The situation wasn't easy because they were always waiting, waiting to be paid, waiting for court to decide today, tomorrow, next week, next month. It was difficult for them to keep calm under the circumstances and sometimes I felt completely useless when I went aboard. There was nothing I could tell them - no news, nothing! When I was going up the gangway each time I mentally prepared myself to hear comments like "why are you coming on board if you have nothing to tell us"? But, this never happened. They were very friendly. The crew seemed like completely untouched by the problem. AB, cook, oiler, and all the others were working despite being trapped in such a situation and being completely abandoned. They kept the ship very well. (*Interview by EK, 9 September 1998, Dunkirk*)

Caner also talked about their daily work in Dunkirk:

> In Dunkirk we carried the work as usual. The ship had 9 cargo holds each with 12,000 tonnes capacity. We cleaned all the cargo holds and lubricated all the hatches. It was a 25 years old ship so chipping rust and painting was done regularly. On top of all this there were some checks and maintenance work that needed to be done periodically. The ship was moored in a tidal area and this also created some extra work such as regularly securing the gangway and so on. The departure of the captain and the chief officer and the involvement of the ITF did not stop us working. Even our last day onboard, before leaving the ship, we doubled the lines for the security reasons. The ship was secured with 18 mooring lines when we left (*interview by EK, 16 October 1999, Istanbul*).

The engine room was not different. Hakan and Mustafa, who were both oilers, reported that in Dunkirk they cleaned and maintained all the pistons and injectors as well as carrying out routine work in the engine room. Both in the engine room and on deck watches were kept.

One of the main issues that the crew said drove them to take legal action against the owner was lack of onboard provisions. When the ship arrived in Dunkirk there was no fresh water and the crew solved this problem by connecting to the port's mains at night time to take fresh water – when the tanks were full they stopped this as it was a risky practice. As far as food supplies were concerned, although there was no fresh fruit or vegetables in the stores, the cook told the crew that with effective rationing they would have enough rice, pasta, flavour, onion, potato and beans etc. for a month. The crew also made best use of their time while drifting en route from Mauritania to Dunkirk during rest hours by fishing. They were able to store some 500 kg of fish in

the deep freeze. (*the cook and the second cook were interviewed by EK, 15 October 1999, Istanbul*).

The port chaplain made provisional arrangement with the port authority to advance fresh water and fuel to the ship for humanitarian and safety reasons. However, food was a problem. The crew appealed to the Turkish Embassy for help but they received no response to their numerous calls and faxes. In August 1997, a month after the ship had been abandoned, the crew decided to appeal directly to the public via the local, national and international press. Three television and seven radio stations ran stories. In addition the local, national and international newspapers covered the case of the *Obo Basak*. The crew also managed to get two Turkish television stations to come aboard and broadcast and this was followed by reports in many Turkish newspapers. The response from the community in Dunkirk and beyond was enormous. As the ship's agent in Dunkirk explains:

> The situation of the *Obo Basak* crew was not the worse we have seen, for example like the *Samarkand* [a ship abandoned in Dunkirk for 10 months in 1996]. The crew of *Samarkand* had nothing to eat, but nothing. That was because in the *Obo Basak* case there was an appeal on TV. A wedding couple came aboard with their wedding cake and a lot of food from their wedding reception. The community spirit was there. Many charitable institutions were involved. But there was a balance to be kept – it was done in a way so that the seafarers didn't feel undignified (*interview by EK, 9 September 1998, Dunkirk*).

What Husnu said also illustrates the community support:

> As soon as they read our news in the papers three deaf and mute French people came to visit us. We learned that they had been in Turkey for a holiday and had just come back. They brought some biscuits and soap with them and also gave us a cheque for FF 800 to telephone our families in Turkey. Even the deaf and mute people heard about our appeal but no response came from the owner or the Turkish Embassy (*interview by EK, 15 October 1998, Istanbul*).

Perhaps in the face of this generosity the sense of betrayal by the company was exacerbated. Certainly the attention of the crew became increasingly focused on the forthcoming court case. At this stage the seafarers were optimistic that the courts in Dunkirk would settle their back wages and that justice would be done.

Winning and losing: the court case and the repatriation of the crew

As Marti abandoned and sent dismissal letters to the Obo Basak crew the court case in Dunkirk became the only hope for them to recover their back wages and secure repatriation to their homes. However, as the Obo Basak case highlights a simple legal procedure (i.e. claiming unpaid wages) could became very complicated when different jurisdictions of the flag state and port state are taken into account. The Obo Basak case also highlights the very limited immigration rights for abandoned seafarers – despite having been dismissed and being in receipt of a charitable offer of repatriation they were treated as illegal immigrants and were not free to be repatriated:

A local lawyer in Dunkirk (who also arrested another Marti ship, *Obo Deniz*, in early June 1997) said that he was willing to arrest the vessel on behalf of the crew, without ITF involvement, for the advance of ushers' fees (around FF 9,000). He also said that he did not need to be paid on the crew's behalf, as he would get enough money from the *Obo Basak* case since he was representing some other creditors. The crew accepted the offer.

During the court hearing on the 2nd of September, the owners instructed their lawyer to claim that French courts were not competent to hear the case and that it should be held in Turkey. There was also an argument that Marti Shipping and Denmar were different companies, one owned the ship and the other one employed the seafarers. However, this was rejected by the judge on the grounds that some papers submitted to the court were letter headed by Marti and some others came from Denmar so therefore the court deemed that they were one and the same. Nonetheless, the first requests for formal arrests and the crews' claims were heard. The lawyer for the crew stated that the absence of written contracts for the crew meant that French wages should be paid for equivalent ranks on board. He also lodged a claim on their behalf for FFr1.6m ($256,000) wages, based on salaries in the French merchant navy. The final decision for the crew claims was expected to be given on the 5th or 9th September. The managing director of Marti commented in the shipping press that the sum was more

than required and said that "the company owes the crew USD 76,000" *('Marti keeps fighting', by Gillian Whittaker, Trade Winds, September 1997*).

Meanwhile on the 3rd of September, two crew members were repatriated for compassionate reasons. The oiler, Necdet, wanted to be with his wife who was undergoing a critical hospital operation. His son was also a kidney patient. The radio officer Ferit was anxious to attend the wedding of his son, for which he originally hoped to pay with his earnings at sea. The ITF paid for their repatriation. On the 7th of September the four cadets were also repatriated as their final term at the maritime school was about to start. The remaining *Obo Basak* crew went to court again to hear the judge award them 70% of a French seafarer's equivalent salary (70% of the FFr1.6). But they were told that they would not be able to receive their money for at least six months. After hearing the case, on the 9th of September a further 14 crew members were repatriated. The Mission to Seafarers gave FF800 to each seafarer to help them to reach their houses from the airport in Istanbul. As requested by the harbour master three officers and four ratings (Caner, Aydin, Hasan and Mustafa) stayed aboard waiting for their reliefs. The port authority accepted that 7 seafarers should remain onboard since Marti had promised replacements within the week. Meanwhile Caner received an urgent message that his wife had been taken to hospital to have kidney surgery on the 19th of September. The port chaplain drove him to the airport in Paris at 4 am on the day of the operation.

During this time there was an intense exchange of messages between the harbour master, the agent and Marti in relation to the replacement crew. The correspondence started in mid August and finally, on the 15th September, Marti submitted the names and ranks of 8 seafarers to the harbour master via the agent. However, the harbour master refused the list on the basis that one of the persons reported as a crew member was a two year old child. In fact Marti contacted an electric officer called Adem and for some reason Adem wanted to join the ship with his family (his wife and two year old son). The wife was listed in the crew list as a purser. After the rejection of the first crew list another crew list arrived on the 18th September with names and ranks of 8 crew members. This time the harbour master accepted the list. The list contained a bosun (Yasar), an oiler (Huseyin), a cook (Bekir), a donkeyman (Mustafa C.), an AB

(Yusuf) and a second officer (Volkan), Electric officer (Hayati) and a second engineer (Metin).

As we have seen the judgement in Dunkirk was in favour of the seafarers. The court also scheduled the sale of the ship for 15th October 1997. Marti Shipping, however, took the local court's ruling to the court of appeal in Douai. The appeal was upheld. The court in Douai ruled that claims by Turkish citizens against other Turkish citizens had to be heard in Turkish courts. The lawyer for the *Obo Basak* crew then advised that the appeal court ruling could be successfully challenged in the Supreme Court but that he was not qualified to conduct cases at that level. The Mission to Seafarers in Dunkirk then approached the ITF to ask them to provide sufficient funding for a study to evaluate the prospects of a successful appeal. The ITF agreed. The early victory for the crew was thus only fleeting in nature and the ordeal of the replacement crew arriving in Dunkirk was just beginning.

New crew: same story

Ongoing legal complications became very costly for the Obo Basak crew and their impact became more extensive with the arrival of the new crew. Many seafarers in the replacement crew knew the situation in Dunkirk and like the first crew they also came to Dunkirk out of their loyalty to the company and lack of choice. They also experienced the harsh realities of being abandoned in a foreign port (i.e. being unpaid, lack of onboard provisions and medical care, resort to charitable help, financial difficulties at home etc.):

Of the original crew, the acting captain Adil remained on board. The eight new crew members arrived in two groups, the first group arrived 25 September (relieving Aydin and Hasan on the 26th) and the second group – the remaining 3 arrived on 2 October (relieving the last remaining rating – Mustafa, from the original crew). Before their departure from Turkey, the replacement crew were told not to believe anything that the Turkish press reported about the *Obo Basak*. The replacement crew were also told that the sea careers of the 23 crew members of *Obo Basak* were ended because they

were black listed. They were also warned to keep away from the local chaplain because he was trying to convert Muslim seafarers to Christianity. They were assured by Marti that the company had won the court case and the ship would be ready to sail back to Turkey in 15 days time (*reported by Mustafa C., 18 October 1998*).

Mustafa C. had been at sea since 1980 but in 1986 and while at sea he heard that his father had died. He returned home immediately and then decided to stay ashore. His daughter was then 9 months old and his father had left money start a business. He opened a small garage and then expanded into a car hire business with a partner. However, the partner subsequently disappeared with a large sum of money and the business went bankrupt. Mustafa had to go back to sea again after twelve years. He therefore joined Marti Shipping in 1998 and his first voyage was to Brazil:

> I was aboard the *Akova.* After seventy days we came back to Turkey to Eregli with iron ore. I telephoned home and my wife told me that she has received no money from the company. I left the ship immediately. I kept telephoning the company for the money but there was no luck (*interview by EK, 18 October 1998, Istanbul*).

Mustafa received an unexpected phone call from the company 45 days after he had left the *Akova* in Eregli. It was the personnel director and he said that the company needed some seafarers to go to Dunkirk. If Mustafa went there he would receive his 70 days of back wages – 90 million TL. Mustafa insisted he had to have the money first but the director also said that if he gave the money to him he could not go to Dunkirk. Mustafa went to Marti headquarters to negotiate with the personnel director:

> The personal director told me that I'll return to Turkey with *Obo Basak* in two weeks time. I told him that the news about the ship in the papers was that the seafarers were hungry; there was no fuel onboard etc. He told me not to believe them. He assured me that Marti won the court case and the ship will leave Dunkirk soon *(interview by EK, 18 October 1998, Istanbul).*

After the meeting with the personnel director the deal was done. Mustafa's close friend Yusuf was also working for Marti and was trusted by both parties. The arrangement was that the personnel director would give 90 million to Yusuf and, after Mustafa's departure to Paris; Yusuf would deliver the money to Aysel (Mustafa's wife). Mustafa had to accept the arrangement because he was desperate. He also met

Metin, Yasar and Yusuf (a replacement crew member) at Marti headquarters. They were also being asked to join the ship in Dunkirk.

Metin, started to work for Marti in 1980. He started as an oiler and was promoted to be a fourth engineer. When the company contacted Metin, he had been ashore 2 months, trying to recover from his experience aboard another Marti ship – *Obo Engin*. The ship had been arrested in China and there were no provisions aboard. Metin was repatriated to Turkey on compassionate grounds when his daughter was taken to hospital with hepatitis B. The company owed him 10 months wages – he had not been paid since October 1996. In October 1997 he went to the company to make some inquiries about his unpaid wages. Since an engine room officer was one of the ranks requested by the harbour master in Dunkirk and Marti was having difficulty in finding one, Metin, knowing nothing of the situation, was asked and agreed to join the *Obo Basak* in Dunkirk:

> The company owed me rather a lot of back wages. Although I received very nominal pocket money – which is not worth mentioning – I didn't receive any proper money since October 1996. They told me that – Mustafa C. was also at present – "we will pay 80% of your salary on the day of your departure to Dunkirk". They asked me to leave my passport with them for a French visa. Before the airport I went to the company to receive 80% of my back wages but they gave me only 1,000$. They told me that I would receive the rest as soon as my arrival to Dunkirk. What could I do? I had to believe them (*interview by EK, 20 October 1998, Istanbul*).

Two Marti ships, *Obo Selim* and *Obo Elif* were arrested in Gibraltar by Den Norske Bank (DbN) and on the 16th of September 1997 they were sold. Yusuf, Bekir, Yasar, Hayati and Huseyin were aboard the *Obo Selim* in Gibraltar and after the sale of the ship returned to Istanbul with the other crew members. On average the company owed them 5 months back wages each. They were approached by Marti and told that the *Obo Basak* was ready to sail after a court case. They would be paid wages as soon as the ship began to earn money again. Hulya, Bekir's wife said that when her husband joined *Obo Basak* the company owed him 4 month's back wages. Bekir spent 6 month aboard the *Obo Selim* unpaid, but the Norwegian bank paid the last two month's salaries as the ship was under arrest by them during that period (*Reported by the Replacement Crew, 15 October, 1999, Kadikoy, Istanbul*). On 25th September five crew members (Mustafa C., Metin, Yusuf, Yasar and Volkan the second officer)

joined the *Obo Basak* and they were followed by a second group of three seafarers (Huseyin, Hayati and Bekir) on the 2nd of October.

In Dunkirk, on the 5th October 1997, the port chaplain held a meeting with the new crew. The seafarers said that the periods for which they had not been paid were (in months) 2, 3, 4, 5, 7, 7, 10 (one crew member refused to say how long). The chaplain suggested that he would consult the lawyer in Dunkirk about their ability to claim for wages earned on their previous ship along with their time on the *Obo Basak*. However, they told the chaplain that they wanted to test the loyalty and honest dealing of Marti for themselves before coming to any conclusions about action. Before they had left Turkey, Marti had promised to pay wages owed to their families and give money to the seafarers after they had been aboard one month. This, they said, would be one test. They also said that Marti had sent $2,000 ($1,000 with each group that going the ship) with them for the ship's safe for provisions (*MtS Files*, Dunkirk, *"Obo Basak* Up-Date 3 and 4, 28 September and 5 October 1997").

At the end of October 1997 the acting captain (Adil), and second officer (Volkan), went back to Turkey. In their case there was no involvement with the ship's agent, the Mission or the ITF and the reasons for their departure are not known. Marti again started to look for officers to replace them. Aydemir had worked for the company for 15 years. He was the brother of Zeynel the *Obo Basak*'s cook. The company owed Aydemir 5 months wages. He was approached by Marti to go to Dunkirk and was promised promotion from Bosun to third officer if he joined the *Obo Basak*. He accepted the offer despite a warning from his brother, Zeynel, on his return to Turkey from Dunkirk. Aydemir, together with Captain Cem, joined *Obo Basak* on 27 October in Dunkirk as a third officer.

Captain Cem had worked for Marti as a superintendent. When Marti contacted him to join the *Obo Basak* he was about to set up a new business in one of the ports in Istanbul. At first he said that he could not join due to his new business but Marti managed to persuade him and told that he would be away less than a month. However, Cem was stuck in Dunkirk for 3 months and in the end he told the company he was returning back to Istanbul at his own expense. Cem was also determined to take Yusuf with him back to Turkey, as Yusuf was very ill. Since losing his house in Turkey due

to being unable to pay the instalments Yusuf had developed a heart condition and was seriously depressed (*reported by Mustafa, Replacement Crew, 15 October 1999, Kadikoy, Istanbul*)

The replacement crew did not receive their promised wages from Marti. Their situation was in fact worse than that of the first crew. Their ship was removed to an isolated berth and by January 1998 the ship's electricity, supplied from ashore by the port authority was cut off. Since there was no fuel aboard for the ship's generator and therefore no adequate heating and lighting, the remaining crews' health deteriorated in the winter conditions. Metin described how:

> It was alright at the beginning, we're using electricity from the port. But later they cut the supply. We started to use the ship's generator. In winter we ran out of fuel. All of us got ill. I had a bronchitis and Yusuf's condition become worse. We have received no wages from the company. They kept promising us to repatriate and pay. None of it materialised.

Captain Cem returned to Turkey with Yusuf on 28 January 1998. The company did not send a replacement for Yusuf. Captain Cem's relief, Captain Zeki, arrived Dunkirk on 27 January and was the last seafarer to join the ship.

Captain Zeki had resigned from the Turkish Navy in 1985 and worked for Marti until 1989. But as Marti started to buy OBO-type ships, he decided to leave the company as he preferred to work on small bulk carriers. He recollects a phone call from Marti that was made in January 1998:

> They asked me to join *Obo Basak* in Dunkirk but by chance I had heard about the ship on the news a couple of days earlier. I told them this but they said there would be a court case on 20 February, that the ship will be released, will load coal for Iskenderun and they were asking me to just bring the ship back to Turkey. Well, I always felt gratitude towards Marti that they helped me in my difficult days in the 1980s so I felt that I had to do something for them in return (*interview by EK, 18 October 1998, Istanbul*).

Zeki, of course, had learned the real situation on his arrival in Dunkirk:

> When I started to read the documents on board I saw the public auction decision by the French courts [on March 20]. I knew then the ship was never going back to

> Turkey but I could not go back immediately. I didn't want to leave the crew behind. They were extremely demoralised (*interview by EK, 18 October 1998, Istanbul*).

Zeki was familiar with abandonment - as one of his previous ships was abandoned in Genoa. He was stranded for 10 months and 5 days and spent the last 3 months as the only crew member. His experience proved to be extremely valuable for the *Obo Basak* crew. He promised them that he would get them all back to Turkey. "That was the only hope to keep the crew going" he said. Every evening the crew walked to the Mission where they phoned home. On these occasions Captain Zeki said:

> After each telephone call home crew members were returning to the ship in a state – shaking like a leaf. The news from home was distressing - no money, no food, children being ill. All the seafarers were there to earn money and support their families and there was nothing coming from the company. Personally there was not much I could do but support them psychologically. I was not in a good condition either. I could not share my problems with the crew. I had no money in my pocket. I felt suffocated after each phone call to home and in the end I had to ask my wife not to tell me anything that I can't solve from Dunkirk (*interview by EK, 18 October 1998, Istanbul*).

During this period Metin heard that his daughter was still struggling with hepatitis B and his family had received no money from the company either for his wages from *Obo Engin* or for his service aboard *Obo Basak*. Where the ship itself was concerned, the time for auction was approaching. The lawyer for the *Obo Basak* crew in Dunkirk sent a message to the replacement crew through the port chaplain warning that if they wanted to claim their back wages as creditors from the ship's sale they needed to act quickly. It was legally impossible to claim anything from the sale of the ship after it was sold and the crew was advised to apply at least 3 days before the sale date of 20 March.

Captain Zeki telephoned the company almost everyday. Marti kept telling Captain Zeki that *Obo Basak* would be bought by a Turkish company and there were two interested - Turk Bank and Yasar Bank. In the end just 24 hours before the sale, on the 19th of March, Zeki telephoned the port chaplain and asked him to contact the lawyer to say that they would like to apply to court as creditors. Zeki also informed the company about their intention. On 20th March the ship was sold at auction for F.fr 9.2m to an unnamed buyer. After the sale of the ship Zeki and the crew refused to

leave the ship "Where could we go if we left the ship without any ticket? In the end we signed a paper that we would not claim anything from the new owner and our tickets were bought" he said. The unnamed new owner appointed a new agent in Dunkirk. After negotiations with the new agent the *Obo Basak* crew were guaranteed repatriation and agreed to leave the ship upon the arrival of the new crew.

The name of the ship was changed to *SAK1* (they just painted over "Obo Ba" and added 1 after "sak" - and the port of registry was changed from Istanbul to Kingstown. The ship now flew the flag of St Vincent and Grenadines. *SAK1'*s last journey was to Pakistan to be scrapped.

In Istanbul Captain Zeki took the log books and all the papers to the Marti Office where he met the Managing Director of the company:

> I asked her what would happen now. She said, "You applied to the French courts as a creditor and that is where you should follow your case up". I explained to her that we applied to the court, at the last possible minute, with the knowledge of the company as a precaution and no money came from them. Her response was "bye bye, go and get your money from the court" I haven't been in touch with the company again (*interviewed by EK, 18 October 1999, Istanbul*)

However, the company did contact the crew asking them to join another Marti ship - *Urgup* that was arrested in Iskenderun – they all refused (*reported by the Captain Zeki,15 October 1999, Kadikoy, Istanbul).*

CONCLUSION

It is evident from the context of this paper that Marti abandoned its crew. It was not however the sort of fly by night operation with which abandoned ships are often associated. As we have seen, all of its employees were proud to be working for Marti and they sometimes had to wait for years or use their influential networks to get into the company. It is difficult to establish what factors brought Marti into financial difficulties. What is clear however is that during its final period Marti managed to operate in breach of international regulations, for example by forcing its cadets to sail as navigation officers and not paying the salaries of its employers for up to one year. The *Obo Basak* crew despite all the signs of betrayal had been loyal to their employer and taken legal action as a last resort when they were confronted with the realities of the hardship faced by their families at home. The *Obo Basak* crew unlike their families had been "fortunate enough" to be looked after by the voluntary organisations and local communities in Dunkirk and beyond. Their appeal for help had a very good respond but cases do not always work out like this.

There were no legal safety nets to protect seafarers. Even when the *Obo Basak* crew resorted to legal action they were let down by the French legal system which was unable to deal with foreign seafarers abandoned in French ports (see also Chaumette 2004a and 2004b, Alderton et al 2004). The *Obo Basak* demonstrates that there are some central issues with abandoned seafarers such as repatriation, wages owing and welfare of the crew during the process of their abandonment and there are no existing instruments to provide direct solutions to these problems. As we have seen IMO and ILO resolutions and guidelines on the provision of financial security for abandoned seafarers came into effect on 1 January 2002. It needs to be emphasised that they are the first comprehensive guidelines addressing the various problems of abandoned seafarers globally and need to be brought into practice.

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A series of coincidences let me to the abandonment case of the crew of the *Obo Basak*. I met first time with an ex-*Obo Basak* crew member in July 1998 in the port of Bristol in the UK by chance. After hearing about the case I decided to document the experiences of the *Obo Basak* crew retrospectively. Inevitably the fieldwork heavily relied on in-depth interviews with the seafarers. Meeting and listening to them was a heart breaking and painful experience but this was nowhere near what the seafarers and their families have experienced. However, my very special thanks must go to the *Obo Basak* crew and their families who opened their homes, and their hearts, without any hesitation to a stranger.

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CHINESE SEAFARERS IN TRANSITION: TRENDS AND EVIDENCE

Dr Bin Wu[1]

I. INTRODUCTION

Globalisation and economic transition in China have had a profound impact on Chinese seafarers. Two decades ago, for instance, all Chinese ocean-going seafarers were permanently employed by state owned enterprises (SOE). Since then, fundamental changes have occurred as a result of changes in both demand and supply. On the one hand, there have been increasing numbers of Chinese seafarers working for either foreign ships crewed by SOE's or for non state-owned shipping companies (Wu 2004a). On the other hand, thousands of crew agencies have sprung up in China, and these have provided an alternative channel for seafaring employment. In contrast to SOE shipping companies crew agencies vary greatly in terms of their nature (state owned company or private agent), scale (from single-person to national network) and regulation (e.g. licensed or un-licensed). This has resulted in the increased heterogeneity of Chinese seafarers in terms of their employment and working conditions.

In order to consider the impact of globalisation and economic transition on Chinese seafarers, the author conducted a survey in the port of Hong Kong at the beginning of

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2002. Three main findings emerged from this survey. Firstly, there were a considerable number of seafarers who called themselves "free seafarers", and whose employment was different from either SOE employees or agency-controlled seafarers (Wu 2004a). Secondly, over half (55%) of the respondents preferred to work aboard foreign ships compared to only 30 per cent who preferred to work in the national fleet (Wu 2003). Thirdly, respondents were concerned about job security and low pay, which constrained their career development (Wu 2004b).

Subsequently however, and despite the recentness of the 2002 survey, many changes have occurred, which are likely to have influenced Chinese seafarers' employment and working conditions. Firstly, after a short recession following the 9.11 tragedy, international seaborne transportation has recovered and demand has soared. This in turn has increased the demand for seafarers by both Chinese and international ship owners. Secondly, there are an increasing number of international ship owners and managers who are interested in recruiting Chinese seafarers. This interest has been reflected in events such as the growing number of industry conferences being held in Shanghai. Finally, in contrast to the reported seafarer surplus of two years ago, some recent reports have raised concern about a "shortage" of Chinese officers and about their "spiralling costs" (*Lloyd's List*, 19 November 2004). These changes raise particular questions. For example: how does increasing demand for seafarers impact upon seafarers' choice of employment as SOE employees or "free seafarers", and within the national or foreign fleets? What factors are driving their choices and decision making? What are the policy implications of these latest developments?

These questions were addressed in fieldwork conducted by the author in China in late 2004. The project was jointly funded by Cardiff University's China Studies Centre, School of Social Sciences, and the Seafarers' International Research Centre. The China Maritime Service Centre (CMSC) in Beijing, a semi-government organisation in charge of national seafarer certificate examination, offered access to a data archive containing information on 'free seafarers' registration. Alongside the establishment and analysis of a 'free seafarers' database, we conducted questionnaire surveys and interviews with seafarers and crew managers of both Chinese and foreign companies. The seafarers' survey was targeted at active seafarers who were attending company training programmes just before they departed to start a new contract. Eight crew

companies in Beijing, Shanghai, Dalian, Qindao and Qiuanzhou participated in this survey. Of 278 seafarers participating in the questionnaire survey, near half (47%) were employed by state-owned shipping companies, and 37 per cent by crew agencies (or agency-owned seafarers), leaving the remaining 16 per cent classed as 'free seafarers'. About 20 per cent of the respondents were senior officers, and the remaining 80 per cent were equally divided between junior officers and ratings. Three quarters of the respondents had experience of working on foreign ships. In addition, we also distributed questionnaires to crew managers for both Chinese and foreign companies who attended the Second LSM Manning and Training Conference held in Shanghai in October 2004. Responses were received from 27 foreign companies and 50 Chinese companies with an overall 60 per cent response rate.

The purpose of this paper is to construct an overall picture of the recent changes in seafaring employment in China. It consists of four parts. Section One concerns the growth in numbers of free seafarers. Section Two describes the reasons why Chinese seafarers prefer to work on foreign flagged ships. Section Three focuses on the debate regarding seafarers' pay and the final section summarises the overall survey findings.

II. SEAFARING EMPLOYMENT AND FREE SEAFARERS

China's economic transition from a planned economy to market economy system has resulted in the increased differentiation of Chinese seafarers in terms of employment and working conditions. Although SOE shipping companies are still the predominant employers of Chinese seafarers, crew agencies have rapidly developed and become a major channel for seafaring employment. Compared with the former, crew agencies are complex in nature (state owned or private agent), scale (from one-person firm to national crew network), regulation status (licensed vs un-licensed) and marketing strategy (from information providers to real employer). Despite the great variety of seafarers and crew agencies, seafaring employment in this sector can be described as essentially: agency-owned or "free" (or "*Shihui Chuanyuan*" in Chinese).

Agency-owned seafarers are mainly new graduates from universities or colleges whose tuition fees were fully, or partly, paid by crew agencies. This category also includes a small number of experienced seafarers (mainly senior officers) who have

switched from SOE shipping companies to crew agencies. Like employees of SOE shipping companies, agency-owned seafarers have long term contracts (usually 3-5 years, up to 10 years) with crew agencies which promise welfare, training opportunities, job security and even holiday pay.

'Free seafarers' on the other hand are more likely to be 'self-employed'. They have no long-term relationship with crew agencies, but instead they are given short-term sailing contracts which enable them to work for foreign companies. Like agency-owned seafarers, "free seafarers" mainly work for foreign ship owners or managers who are not allowed to recruit Chinese seafarers directly under the current legal system. Sources of "free seafarers" are complex and diverse. At a basic level, they include but are not limited to the following groups: experienced seafarers who departed from the SOE shipping companies for various reasons (e.g. personal issues, company goes bankrupt or they are made redundant), inexperienced seafarers who have attended maritime training courses in order to seek job opportunities at sea and other relevant skilled workers (e.g. fishers, cooker, carpenter).

Table 1 illustrates three working patterns prevalent in the contemporary Chinese seafaring labour market. Type 'A' includes a few large state-owned crew agencies which have a large number of 'agency-owned' seafarers whom they supply to foreign clients. While 'agency-owned' seafarers can supply 40 to 50 per cent of these companies' business, the rest are supplied either by "borrowing" from SOE shipping companies or by recruiting free seafarers directly. Compared with Type 'A', Type 'B' represent those middle-sized and/or newly established crew agencies who do not have an adequate supply of 'agency-owned' seafarers but either 'poach' (*Waren* is the Chinese word, or 'attract' the talents) from SOE shipping companies or recruit 'freemen' in the public domain. In contrast, Agency 'C' includes small crew agencies which may have a chance of gaining crewing contracts through various channels but do not have a supply of their 'own' seafarers. In practice, they will 'borrow' some seafarers from SOE shipping companies or large crew agencies, and recruit 'free' seafarers directly.

Table 1 Variety of Seafarer Sources and Composition by Crew Agency (%)

AGENCY	SOE	Agency-own	Freemen	Turn-over (person/year)
A	30	40	30	> 2000
B	20	25	55	500-1000
C	10	10	80	100

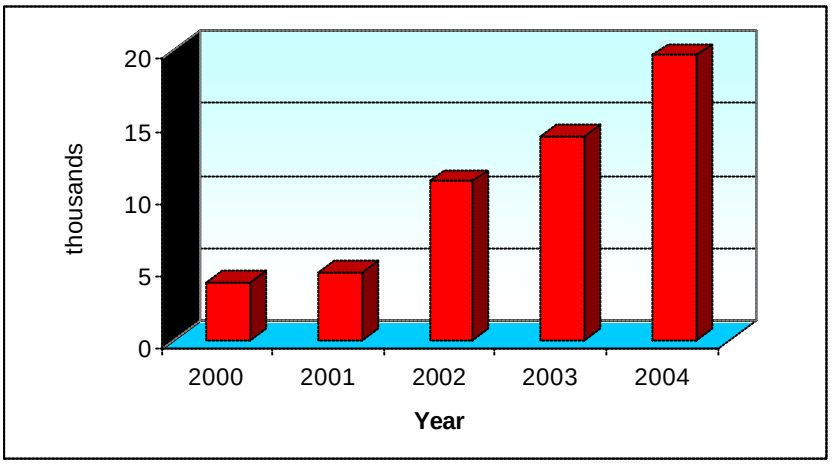
Notes: This table is based upon author's own fieldwork in China in November 2004. This table, however, does not represent all variations of Chinese crew agencies.

The distinctions between seafaring SOE 'agency-owned' and 'free' seafarers are relative and blurred because many SOE shipping companies have departments (like a crewing agency) to supply labour services either directly to foreign ship owners or indirectly through crew agencies ('borrowing'). Furthermore, 'free' seafarers may choose to work for SOE company ships. Secondly, different crew agencies have different strategies for employing and recruiting seafarers. Generally, the bigger the crew agency, the larger the size of the agency-owned seafarer labour force. For 'single person' agents, the foundations of companies are underpinned by personal networks which link demand from big crew agencies and the supply of individual seafarers at a local level. Finally, "free seafarers" play a key role in the global Chinese seafarer labour market supply because there are few long-term contracts available in relation to Chinese seafaring employment. The majority of seafarers who leave SOE shipping companies are more likely to choose to become 'free' seafarers rather than 'agency-owned' seafarers because the former can earn more than the latter. Under current laws, for instance, crew agencies are allowed to take up to 25 percent of a seafarer's wage compared with only 12 percent in other sectors.

In response to demand from the global labour market, the Chinese government has loosened the control of the 'free' seafarer register. In the past, for instance, individual seafarers were not allowed to apply for seamen's books or certificates of competency, all of which were required to be submitted through a SOE company on their behalf. Since the late 1990s, however, the China Maritime Service Centre (CMSC), a semi-government organisation, has been authorised to take responsibility for the registration of 'freemen' nation-wide. This has provided a channel for seafarers to depart from SOE companies and to work for any crew agency. According to the CMSC, the number of registered seafarers has rapidly grown from 4,000 each year in

2000 to approximately 20,000 in 2004, and the total number of 'free' seafarers exceeded 50,000 by 2004 (Figure 1). Breaking down 'free' seafarers by rank it is possible to see that the growth of officer registration is faster than ratings' although in absolute terms, ratings are still predominant, comprising about 90 per cent of the total.

Figure 1 Growth of Freemen Registration in CMSC



Our survey suggests that 'free' seafarers predominately originate from rural areas. Nearly three quarters (73%) have their home in rural areas and just over a quarter (27%) are urban residents; 87 per cent of them are from coastal provinces compared with only 13 per cent from inland areas. These results are similar to the figures produced in a recent survey of seafarers in Hong Kong undertaken two years ago (Wu 2003).

"Free" seafarers have variable levels of experience and competence. Prior to becoming 'free' seafarers two thirds had experience as employees of SOE shipping companies, and 30 per cent of them were fishermen. Table 2 displays characteristics such as: age, seafaring experience and the length of time spent with their first company (First Job). The "freedom" column represents the period since they left their first job (which was most likely to have been in state owned enterprises). The mean age and seafaring experience (defined as the length of time since joining the sea) of free seafarers were 33.7 and 13.9 years respectively. Before they became freemen they had spent on average 11 years in their first job which was likely to have been in a SOE company. Typically however they have less than three years' experience as

freemen. This provides us with conformation of the fact that free seafarers are a new phenomenon in China.

Table 2 Profile of Freemen Age, Seafaring Experience and First Job (years)

Division	Item	No.	Mean age	Seaf. Exp	1st job	'Freedom'
Education	High	191	33.1	10.7	8.7	2.0
	Mid	384	32.5	12.1	9.4	2.7
	Low	385	35.2	17.4	13.8	3.6
Rank	Senior	198	41.5	20.7	13.8	6.9
	Junior	208	31.7	10.3	7.5	3.2
	Ratings	554	31.7	12.9	11.5	0.6
Total sample of Freemen		**960**	**33.7**	**13.9**	**11.1**	**2.8**
Sample of questionnaire		*276*	*32.7*	*7.0*	--	--

Seafaring mobility (departing from SOE companies to become 'free' seafarers) varies however with educational background and rank. Less educated ratings find it easier to leave SOE companies than more highly educated officers. This rank data correlates with that of our Hong Kong survey (Wu and Morris 2005): confirming that the higher their rank, the more difficult it is for aspiring free seafarers to depart from SOE companies which experience a relative shortage of senior officers. As a result we see that ratings predominate amongst these 'newcomers'.

III. BECOMING 'GLOBAL' SEAFARERS

The transformation of the Chinese labour market to include 'free' seafarers is inextricably linked to the establishment and development of a global labour market (GLM) for seafarers (Lane 2000). The impact of this transformation can be explored by examining employment needs and professional perspectives. In contrast to 'national seafarers' who have predominated in the past, what we are witnessing in China today is the emergence of 'global seafarers' who prefer, amongst other things, to work in a multinational environment (Wu and Sampson 2005).

When asked to indicate their preferred working environment, just over two thirds of respondents in this survey chose foreign shipping companies. Western companies were considered more attractive by Chinese seafarers than Asian ones (including Hong Kong and Taiwan companies), although only 20 per cent of respondents had actually worked onboard western ships. In addition, 30 percent of the participants declared themselves flexible in working for either national or foreign fleets, indicating that they paid more attention to onboard opportunities than to working location. The results can be compared with a previous survey conducted by the author two years ago when only just over half of respondents preferred to work for foreign fleets (Wu 2004b).

Table 3 shows that education level, age, and rank, have a significant impact on the preferred working location of seafarers. It seems that younger seafarers are more interested in boarding western ships than older groups while senior officers are more flexible in terms of working location than junior officers and ratings.

Table 3 Preference of Operator Nationality by Age and Rank (%)

Category	Division	No.	West	Asia	Anywhere	PRC
Age	<30 ys	111	39.6	33.3	18.9	8.1
	30-39	103	35.9	27.2	33.0	3.9
	>= 40	54	16.7	24.1	48.1	11.1
Rank	Senior	50	26.0	24.0	46.0	4.0
	Junior	107	37.4	25.2	32.7	4.7
	Ratings	110	33.6	35.5	20.0	10.9
Total		**268**	**33.1**	**29.5**	**30.7**	**6.7**

Notes: Chi-square tests: age .002; rank: .015.

While the majority of Chinese seafarers are interested in working on foreign ships, a further question arises: 'by what channel do they like to access the global labour market?' Under current seafarer employment and recruitment systems in China, all seafarers, whether they are SOE employees or 'freemen', must sign an onboard contract with a Chinese shipping company (e.g. COSCO) or crewing agency to work aboard foreign ships. In other words, no foreign company is allowed to contact seafarers and sign them up directly. In this process, the role of the hiring company or

agency is that of more than a broker. The company takes legal responsibility in controlling and managing Chinese seafarers.

During the survey however, many seafarers expressed concerns about the current system. Not only did they report having to pay more to intermediaries in this process, resulting in a reduction of their wage package, but they felt this system also constrained their career development and relationship building with foreign companies. The quote below from a chief engineer is illustrative:

> *"Many freemen like me hope that we can be recruited by foreign shipowners directly because the latter would take care of my performance and appreciate any contribution I may make. This also encourages me to do my best aboard because I know whom I am working for. In current situation, however, there is a long chain between shipowner, ship managers, crew agencies, and seafarers. As a result, the quality of my services for foreign ships is hardly assessed by crew agency whose assessment is based upon the report from ship managers. The shorter the chain, the better seafarers work for […] In addition, direct recruitment by foreign ship owner can save a lot of my time in job searching and interviewing because I can inform the company how long I prefer to stay at home when I leave from the ship. In reality, unfortunately, I have to spend awful time for job searching from the first day of my holiday. So freeman is not really free as you thought."*

The above quotation represents the opinion expressed by a large number of Chinese seafarers within the sample. When respondents were asked to express their preference in recruiting style, our survey showed that over 70 per cent favoured direct recruitment by foreign companies or their representatives in China, while less than 30 per cent wanted to retain the current system recruiting via shipping companies or crew agencies. Table 4 indicates that recruitment preference is, however, significantly related to rank. Senior officers were more likely to be interested in direct recruitment than ratings.

Table 4 Recruitment Style by Rank

Division	No.	Indirect	Direct
Senior	44	18.2	81.8
Junior	87	23.0	77.0
Ratings	81	40.7	59.3
Total	212	**28.8**	**71.2**

Notes: Chi-square tests: .009.

Given that the vast majority of Chinese seafarers onboard foreign ships are placed there as a whole Chinese group, the respondents were asked to express their preference from the choices: whole Chinese group, half Chinese group, a few Chinese (or individual Chinese), or doesn't matter. Our survey shows that only one quarter of respondents expressed a preference for working within a whole Chinese group while nearly half preferred a mix of nationalities. One quarter displayed no specific preference. In further considering nationality preference we found that better educated graduates, younger professionals and senior officers were less likely to favour whole Chinese groups than those who were older, more poorly educated and employed as ratings (see Table 5).

Table 5 Grouping Styles by Rank, Age and Education Division (%)

Category	Item	No	Whole	Half	Individu	No
Education	Higher	130	20.0	27.7	25.4	26.9
	Medium	120	29.2	31.7	15.8	23.3
	Element	14	50.0	21.4	--	28.6
Age	<30	108	24.1	27.8	26.9	21.3
	30-39	106	25.5	34.0	15.1	25.5
	>=40	55	30.9	21.8	12.7	34.5
Rank	Senior	51	15.7	27.5	23.5	33.3
	Junior	107	17.8	24.3	22.4	35.5
	Ratings	110	39.1	34.5	14.5	11.8
Total		**270**	**25.9**	**28.9**	**29.6**	**25.6**

Notes: Chi-square tests education: .057; age .105; for rank: .000.

The reasons for a preference by foreign ship operators for "whole Chinese crews" were not explored in detail. However a possible explanation was provided by one manager who suggested that:

> *"From the view of improving quality of Chinese seafarers, I think that individual or small grouping style would be highly recommended because it would be greatly help for Chinese seafarers to improve their English and adaptive capacity to the global labour market. From the view of recruitment business, however, I would like to use whole grouping style because it is easy to manage seafarers and also reduce the costs. There are many foreign companies which do not want to spend more time to train Chinese crews."*

IV. DEBATES ABOUT SEAFARING PAY

The major factor driving the transition of the labour market in relation to Chinese seafarers is, perhaps, pay. In order to consider the importance of salary seafarers and crew managers of both Chinese and foreign companies were included in the questionnaire survey or in interviews. Their different views relating to salary can be summarised as follows:

For Chinese seafarers, high salaries were the most significant factor in encouraging them to continue a seafaring occupation and pursue work onboard foreign ships. For instance, high salaries were listed as the top factor in encouraging them to stay at sea. In addition, when respondents were asked about the negative factors impeding the entry of Chinese seafarers to the GLM, low pay compared with other nationalities was listed as the second most important factor just behind English competence. This suggests that there is concern about parity in pay onboard multinationally crewed ships.

From the demand side according to our survey, over 80% of the 21 foreign crew managers who responded to our questionnaire survey chose to recruit Chinese seafarers because their wage was “very competitive” or “competitive”. Furthermore, low wages were listed as the primary reason for any interest in Chinese seafarers, although skills were also attractive, ranking as the second greatest factor. Foreign crew managers reported giving less attention to English competence and working attitudes.

Chinese crew managers, on the other hand, seemed to have different views. For instance, only 62 per cent of the 50 Chinese crew managers saw the Chinese seafaring wage as “very competitive” or “competitive”. While as many as one third suggested it was “not competitive” or even “poorly competitive”. During the survey, many Chinese managers expressed their worries about the rapid growth of Chinese seafarers’ wages, which has increased around 10 to 20 per cent for some senior ranks within a year. Such growth was, in their view, unsustainable and they suggested it would undermine the competitive advantage of Chinese seafarers in the longer term.

Over half (55%) of the Chinese crew manager respondents claimed that they were facing a decline in company profit compared to only 14 per cent who reported an increase. Furthermore, one third of respondents predicted a decline in the supply of Chinese seafarers to the GLM in the near future. A similar proportion predicted growth or stability.

It would be misleading to assume that all Chinese seafarers have benefited equally from a growth in salaries. The increase in seafaring wages varies greatly with rank. For example, senior officers' salaries jumped 20 per cent in 2004 in some companies, whilst there were small or no changes at junior officer or rating level. Furthermore the survey suggests that such adjustments may not necessarily result in an increase in the overall wage bill for companies, but may incorporate a reduction in junior officers' and ratings' wages, compensating for the increased cost of senior officers and resulting in a significant increase in the income gap between senior officers and ratings.

There are also significant income inequalities across companies. Seafarers working for different companies or agencies may be paid vastly different rates as the following quote from a crew manager indicates:

> *"Four years ago, we [Crew Agency A] sent a captain to a European company' ship with a salary of $2400/month while another Chinese company [Crew Agency B]'s captain for the same client's ship was only $1400/month. The difference is because that Agency B is a part of state owned shipping company which had set up a profit target plan for all branches including Agency B. By contrast, we are more close to the labour market so that seafarers in our company can earn more. Today, captains in our company can earn a $3000/month which is contrast to only $2000/month in Agency B."*

Soaring salaries in the GLM sector have attracted seafarers from the SOE sector. In moving from the SOE sector many prioritise wages over company loyalty as the following seafarer explains:

> *"I am leaving from a provincial SOE shipping company with many colleagues just after we have completed 10 years contract with the company. Taking into account our experience and skills this is a big lost of our company. For us, we do not owe the company because we have received very low pay for long time. The wage of*

an oiler for instance was only $170/month ten years ago ($270 today). I earned only $700/month as first engineer two year ago, and $950 as chief engineer."

To interface with the labour market, our company take a big step to increase senior officers wage and chief engineer can earn $1700/month from this Autumn, This was not enough and also too late because I have made decision to leave and it is easy to get a post of chief engineer with a pay about $ 2500 to $2700/month."

Thus, income inequality amongst Chinese seafarers has resulted in an increasing seafaring mobility within China. This poses issues for the regulation of the Chinese seafaring labour market, which some crew managers describe as a "mess". With the lack of national regulation relating to seafarer pay, different crew agencies operate differing pay schemes. It is common for seafarers and crew agencies alike to report that they would like to see a more regulated and transparent wage system for Chinese seafarers.

V. CONCLUSIONS AND POLICY IMPLICATIONS

This paper illustrates recent changes in the employment, work preferences, and pay of Chinese seafarers. The data presented allow us to reach a number of conclusions.

Firstly, as a result of both demand and supply, Chinese seafarers are an increasingly diverse group in terms of employment and preferences. In terms of the development of such heterogeneity three structural factors need to taken into account: strong demand from the global labour market, the development of crew agencies and a 'brokerage' industry in China, and the growth of seafaring salaries in recent years. These changes have offered opportunities to Chinese seafarers who are now in a position to choose not only between working locations (national or foreign fleets), but also between employment in conventionally state-owned shipping companies and crew agencies.

Secondly, in response to increased opportunities, 'free seafarers', who constitute a new group of Chinese seafarers, have increased dramatically in number since 2000. Such seafarers are more likely to be self-employed individuals and as a result we have

witnessed the emergence of a genuinely plural structure across seafaring employment in China.

It is finally interesting to note that the dynamic behind the transformation of the labour market for Chinese seafarers is closely related to pay, which influences seafaring employment and retention in many ways. There seems little doubt that the wages of Chinese seafarers are soaring and this has prompted concern about the long term competitive capacity of Chinese seafarers in the global labour market, and also about equal pay between Chinese and foreign nationals, and SOE and 'other' sector seafarers.

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OCCUPATIONAL HEALTH AND SAFETY AT SEA: the relevance of current experiences of regulating for a safer and healthier work environment on land?

Professor David Walters

INTRODUCTION

This paper represents some tentative thoughts about ways of seeing the issue of health and safety in seafaring that are drawn from experience of examining approaches to managing health and safety in land based industry. In outline, the set of related ideas it presents are as follows:

- While the picture is far from complete, there is sufficient evidence to suggest that seafaring continues to rank amongst the most hazardous of occupations.
- As with land-based work, a large proportion of the toll of work-related death, injury and ill-health amongst seafarers' safety arises from failure to manage health and safety effectively.
- This failure is exacerbated by changes that have taken place in the structure and organisation of the industry internationally over the last quarter of a century that both contribute to altered and increased risks to health and well being and make prevention of harm to workers more difficult to both manage and regulate
- Such failures and the changes that exacerbate them however are not unique to the industry but are widespread features of change in the nature, structure and organisation of work and labour markets that have taken place everywhere during the same period

The paper therefore argues that while managing health and safety is in many ways a special case in the shipping industry, it also true that the industry represents a work environment in which the same global pressures that impact on regulating health and safety across all economic sectors in market economies are felt particularly acutely. As a consequence it suggests that an appreciation of what is known about the health

and safety consequences of these pressures in land-based experience, alongside the ways that modern health and safety management and regulation has attempted to respond to them, could lead a better understanding of some of the current challenges confronting the improvement of health and safety management at sea and effective means of addressing them.

An outline of the scale of the problem of known adverse health and safety outcomes in the shipping industry is first presented. This is followed by discussion of parallels between the kinds of structural and organisational changes that have taken place in land-based work and those that have led to the current profile of work at sea. It identifies land-based evidence suggesting that many of these changes have poor health and safety outcomes and points out that resources for inspection and enforcement of health and safety requirements do not match the increasingly complex economic environment in which work takes place. Again, it identifies parallels between this situation and the regulatory environment of the international shipping industry.

Strategies to address these challenges to health and safety management and its regulation on land are reviewed and their implications for understanding health and safety at sea considered. Starting from the development of the core principles of the current regulatory model for occupational health and safety management, it is demonstrated how this model has come to have a broadly international application. Of special interest is the way that the core principles are based around a holistic definition of health and safety and a focus on managing risks. The paper suggests that such a conceptualisation has major implications for ways of understanding employers' responsibilities for health and safety at work. It goes on to argue that while these core principles have the potential to be relevant to the changing world of work, there is growing evidence showing that in many cases they are poorly understood by duty holders. They have, therefore, to only a limited extent achieved their potential to address the challenge of change in the world of work. The paper concludes with a discussion of some of the reasons for this and considers their implications for the future improvement of the health and safety of seafarers.

Health and safety outcomes at sea

Analyses of health and safety outcomes in the shipping industry indicate cause for concern. Despite the well-known problems of under-reporting of injuries (and even fatalities) in the industry, it remains amongst one of the most dangerous according to official statistics and specific studies (Roberts 2004; Nielsen and Roberts, 1999; Hansen *et al* 2002). In the British merchant fleet for example, the relative risk of mortality caused by accidents at work has been reported to be 26.2 times greater than for all workers in the UK (Roberts 1998), while in the Danish merchant fleet the fatal accident rate was 11 times higher than for shore based industries (Hansen 1996). Moreover, there is a growing body of thought that argues that the hazards of work at sea are not only those associated with sinking ships or major accidents to individuals engaged in obviously dangerous activities. While these are of course serious enough, the poor health and safety outcomes of work at sea also embrace greater risks of ill-health from exposure to chemical and physical hazards. As is also the case on land, less is known about the full extent of work-related ill-health resulting from these exposures but what little that is known suggests a similar degree of comparatively poor outcomes. Exposure to hazardous chemicals is responsible for a significant number of deaths and chronic illnesses. The Norwegian Cancer Research Institute found deaths from mesothelioma among ships' engineers and engine ratings to be six times that of the general population, Seafarers have been found to be at significantly greater risks of other forms of cancer, which can be linked to their exposure to known carcinogens in their work (ILO 2004 see also Brandt *et al* 1994; Cocco *et al* 1994 ; Pukkala and Saarni 1996 ; Moen *et al* 1990; Nilson et al 1997; Moen *et al* 1995). Exposure to excessive noise and vibration result not only in shifts in hearing thresholds but also slower reaction times and attention lapses among seafarers (Szczepanski and Otto 1995; Smith 2001). Other common physical hazards include exposure to extremes of heat and cold and excessive solar radiation (ILO 2004).

The ergonomic consequences of poor work design combined with working at sea lead to increased risks of musculoskeletal disorders (Toner et al 1994). Psychological and mental health problems are also more prevalent amongst seafarers than amongst many other occupational groups and can be related to the stress and fatigue associated with the organisation of work at sea. High suicide rates are a further documented feature of

work at sea (Roberts, 1998; Hansen 1996a). In addition there are a host of life style influenced poor health outcomes in relation to diet, alcohol and drug abuse, work-life balance and sexual health that are all prevalent and can be attributed to the living and working conditions experienced as part of employment at sea (ILO 2004:137-138).

Another major issue is the violence and trauma seafarers encounter as victims of maritime crimes such as piracy. While it is perfectly clear that this is not a straightforward subject for employers' responsibilities, as with the examples of criminal activities and harassment that are frequently experienced by land-based workers in both private and public services, there are elements under the control of employers that are relevant. For example, two issues in particular stand out. The first concerns the aspects of prevention and protection that are embraced within the employers' responsibilities to assess risks and organise work in ways that take adequate account of them. The second concerns the further employer responsibilities to help rehabilitate workers traumatised by such experiences.

Change in the structure and organisation of work and its implications for workers' health and safety

Many of the increased risks referred to above have of course long been associated with an occupation that has been known to be hazardous from ancient times. However, the prevalence of some is probably more closely associated with the consequences of changing technology, work practices and their management, and especially with change in crewing policies and with the development of a global labour market that are all very much features of modern times. In addition the relatively low profile of regulation at sea does little to mitigate poor health and safety outcomes and this too has possibly been exacerbated by relatively recent shifts in the way that the industry is regulated internationally.

Over the last quarter of a century such change and the reasons for it may have been more extreme at sea, but a similar order of things has occurred in land based production and services and for broadly the same reasons. It is now widely recognised that globalisation and the increased importance of international market-based,

regulation of economic activity has had a profound impact on what work is done, how it is done and how the conditions under which it is done are regulated throughout the world. There are mounting descriptions of this change, in which the altered context of productive activities in advanced market economies of Europe, North America and Australia/New Zealand have been described in these countries and internationally in the past twenty years.

Changes in the structure and organisation of work: Direct effects of these changes are becoming better documented with the results of national and international surveys[1]. Negative health and safety outcomes include the rapid growth in importance of the health effects of psycho-social aspects of work intensification and the shift from manufacturing to service based economies as well as growth in significance of musculoskeletal disease. At the same time, risks from more traditional chemical, physical and biological hazards have by no means disappeared. For example, in the EU it is estimated that one third of all occupational disease is the result of exposure to hazardous substances (Musu 2004). In the case of certain past exposures, such as that to asbestos for example, their negative health consequences are continuing to exert a mounting toll of mortality and morbidity that is likely to continue well into the present century. Hazardous work processes have been increasingly imposed on more vulnerable workers. This has occurred both in rich, regulated countries as a result of the trends in the structure and organisation of work and labour markets — and in less regulated economies, when multi-national business interests have gone off-shore to reduce labour costs and avoid regulation, resulting in workers in developing and newly industrialising countries being exposed to noxious production processes. While in advanced market economies, the impact of economic liberalism has continued to promote deregulation, arguably resulting in decreased traditional sources of protection for workers in these countries.

[1] There have been regular and ad-hoc surveys of the extent of the burden of work related ill-health in many countries in Europe and North America. In addition there have been cross-country surveys such as those undertaken by the European Foundation for Living and Working Conditions in the European Union (see European Foundation, 1992 and 1997 and Paoli and Merllie 2001). Most of these surveys show rising incidence of stress related conditions and MSD. Furthermore, they point to substantial incidence of work related ill-health that is not reported by conventional statutory reporting requirements, leading to estimates such as those in the UK where 25,000 people are believed to leave employment each year as a result of a work related injury and illness (HSC/DETR 1999). Such ill-health and injury is responsible for the loss of over 25 million working days annually (Jones et al 1998).

Enormous changes in the way in which work is done have also taken place in the shipping industry. Developments like containerisation, and specialised ships used to carry particular kinds of commodities, has led to work intensification in many areas of shipping with the consequent problems referred to previously of stress and fatigue amongst seafarers involved. More work being done faster, by fewer workers in situations in which flexibility, faster turn around times and increased speed generally are required, lead to the likelihood of similar health and safety consequences to those that are known to exist for shore based industries that have undergone broadly similar changes in work structure, organisation and delivery in recent times. As already pointed out, the effects of fatigue, the incidence of stress and the prevalence of MSD in seafaring all point to similar trends in the health and safety consequences of change in the organisation of work that are familiar in land based scenarios.

Labour market changes: There has been a rapid increase in contingent labour with part-time temporary and peripheral workers playing more and more significant roles in the economy internationally as well as increased participation by women in the labour force. Of the range of nearly one hundred studies on the health and safety effects of precarious employment in industrialized societies published internationally between 1984 and 2000, the majority indicate that precarious employment is associated with a deterioration in occupational health and safety (OHS) in terms of injury rates, disease risk, hazard exposures, or worker (and manager) knowledge of OHS and regulatory responsibilities. Moreover, well over 90 percent of studies on outsourcing and organisational restructuring/downsizing, find a negative association with OHS. The evidence is also fairly persuasive for temporary workers, with 14 of 24 studies finding a negative association with OHS (Quinlan *et al* 2001). There are also important gender considerations to bear in mind when contemplating the effects of the changing world of work on health. In particular the 'double burden' of work experienced by many women[2], as well as the disruption of work-life balances for both women and men that are the consequence of many new forms of work organisation.

In shipping, the major changes that have occurred in the structure and organisation of the industry include a shift from stable and regulated labour markets to more

[2] See Vogel (2003) for a further detailed analysis of this situation.

casualised and less regulated ones. Independent, international ship management companies have emerged along with the widespread use of flags of convenience and the displacement of national regulatory systems with transnational and international ones. These changes along with wider acceptance of free market economic policies in the advanced market economies enabled the rapid development of a global labour market for seafarers, largely as a consequence of the industry's efforts to control labour costs. The result was that single nationality crews were replaced by multinational ones that could be employed more cheaply (ILO 2004). This has resulted in the same kinds of situations as those described in the previous paragraph for land-based work — and presumably with the same likely poor consequences for seafarers' health and safety. Moreover, such situations make the task of managing health and safety more difficult. Issues of communication, responsibility and monitoring become increasingly difficult, the more complicated the employment relationship becomes. In addition the multinational aspects of the crews imply greater demands for investment in training and better communication techniques to ensure appropriate levels of safety[3] – an experience also shared with some land based industries such as construction for example.

The evidence of much of the likely consequences of current changed work structure, organisation and practice remains hidden. Decline in manufacturing, heavy engineering and mining as well as in large relatively stable enterprises and the growth of the significance of work in small enterprises, contingent and peripheral employment, casualisation and outsourcing, has resulted in job insecurity and work intensification in an environment that has become far more difficult to regulate. Organisational aspects of these situations are increasingly less defined by individual employment relationships and more by 'structured networks of production'. As a result, influences from outside enterprises are beginning to have greater impact than employers on what is produced and how it is produced (and the consequent health and safety effects of production). The supply chain and the role of intermediary processes and actors in the wider economic (and sometimes social) environment in which work

[3] See for example Sampson and Zhao (2003) who in a paper on multilingual crews and the operation of ships conclude that safe working practices depend in part on adequate communication between crew members and suggest this requires more than a simple understanding of 'maritime vocabulary' or grasp of technical job-related terms.

takes place are increasingly recognised as important influences on the health and safety of workers. Again, although its consequences for its labour force also remain mostly hidden, the largely deregulated, free market driven business environment of the shipping industry in which there are a multiplicity of players involved in commissioning and managing work and where the labour force is required to be cheap, flexible, contingent, and casualised are likely to give rise to analogous health and safety consequences to those described for similar scenarios on land and for the same reasons.

Changing work contexts, organised labour and health and safety: It is widely accepted that trades unions have played a major role in achieving improvements in land-based health and safety. For example, writing in the *Journal of Public Health Policy*, Abrams states:

> 'Organised labour has been the essential factor central to most workplace health and safety improvements from the industrial revolution to the present'

They do so in many ways, through collective action, including strikes and other forms of industrial action as well as through negotiating the collective agreements that are part of the institutional mechanisms of industrial relations in most countries. More specifically, there is a body of evidence from studies across a whole range of countries that indicates that health and safety performance is improved through representative worker participation and that trade unions are the main form of support for such participation (Walters *et al* 2005). General trade union activity has been important in setting the framework for such participation and it is this framework, and the assumption of trade union power that is behind it that defines the regulatory model now internationally adopted for representing workers interests in health and safety.

However, one of the more obvious aspects of recent economic and political trends that have reshaped the world of work has been the decline in membership and influence of trade unions in most advanced market economies[4]. This is the result of several causes.

[4] Trade union membership in most advanced market economies has reduced substantially since its peak in the 1970s – for example in the UK, the US and in Australia it has nearly halved. It has declined throughout Western Europe, indeed only in countries where the Ghent system operates (i.e., where unions perform functions in the administration of unemployment benefit and social insurance), have

For example, the decline of industries where trade union membership was strong, the rise of non-standard forms of work in which trade union organising is more difficult as well as to the political hostility of neo-liberal governments and legislatures to trade unions. There are great differences between the role of trade union representation in shipping and in land-based industry of course. Nevertheless all of the above causes have some parallels in the relatively recent history of trade union representation of workers interests in seafaring. In the post-war period, relatively strong national seafarers' unions from western industrialised countries were able to establish moves towards effective representation at national and shipboard levels. However, as change has taken place in the organisation of labour supply for the industry such unions have lost ground. Increasingly, practices such as blacklisting and the general antagonism of crewing agencies towards trades unions have prevented ordinary seafarers from participating in trade union activity and unions generally from being able to act in a representative capacity at shipboard level. All this makes for substantial difficulty in achieving genuine and effective participatory approaches to health and safety management.

The impact of change in the world of work on-shore therefore resonates in a variety of ways with experience of change in the way in which the shipping industry has operated in the last quarter of a century. Land-based regulation of health and safety management has tried to address the challenges presented by such change. In the following section we look at how this has occurred and consider the implications of such development for understanding health and safety at sea.

trade unions maintained or improved upon levels of unionisation of the 1970s (see for example: Waddington 2001).

Developing a regulatory strategy to improve health and safety management

Current policy on achieving improvements in the work environment in most affluent market economies is based on the use of a combination of several instruments including regulation, market mechanisms, worker participation, education and enlightenment. Many of these approaches are deeply rooted in the history of societal and government responses to occupational health issues, the emergence of others is more recent. They were reinforced by major regulatory reforms in the 1970s and 1980s across a range of countries in Europe, North America and in Australia and New Zealand that sought to clarify and reinforce the principles of work environment regulation while at the same time replacing traditional prescriptive approaches with goal-setting measures to encourage self-regulation. The UK was among the first countries to change its regulatory approach in these directions — heralded by the Robens Report and implemented by the HSW Act 1974 in which general duties are goal-setting measures. 'Regulating self-regulation' was the *leitmotif* of the HSW Act. Similar changes were occurring (or occurred subsequently) in the European Union and in other industrialised countries world-wide (Gunningham and Johnstone 1999).

However, it is doubtful that the reforms of the 1970s and early 1980s lived up to all the expectations held of them. Awareness of this, and of the changes taking place in the organisation and structure of work, led to another round of reform from around 1990. In the EU, goal-setting and self-regulatory elements remained strongly emphasised in this second round of reforms but greater attention was paid to the challenge of improving work-related *health* as well as safety, redefining employers' responsibilities for these tasks and focusing on evaluating and managing *risks* associated with work. Implied in this change (and subsequently ratified by rulings from the European Court of Justice – see below) was a more holistic definition of health and safety in which a merely technical view of the subject was considerably broadened to include work environment, organisational and socio-economic perspectives.

These notions were encapsulated in the requirements in the EU Framework Directive 89/391, which placed responsibilities on employers to take an active, comprehensive, programmatic and enduring responsibility for OHS quality. It was to be achieved

through a *systematic managerial process* to detect, abate and prevent workplace hazards in which a *participatory approach* to the evaluation and management of risk was linked to principles of good preventive practice and the use of *competent employees/services* in its delivery

Behind these policy developments are some important key principles we have learned about *managing* the processes of preventing injury and ill-health at work. In particular there has been a shift away from a simplistic understanding that the *root causes* of injury and disease were to be found solely in unsafe behaviours and that more sophisticated explanations that combined environmental and organisational factors involved in the nature of production were required. This in turn led to a wider definition of employers' responsibilities for the health and safety consequences of the work under their control. Additionally, it has become clear that prevention strategies are not in practice so much about eliminating risk as they are about managing it and requirements for formal risk assessment and control procedures have as a result found their way into health and safety regulation. As a consequence regulatory agencies (at least in theory) now pay considerably more attention to inspection of arrangements with which duty holders systematically manage OHS quality.

Parallel to these developments and at least in part stimulated by them[5] has been the growth in popularity of a range of occupational health and safety management systems such as those accredited by various standards organisations at national and international levels as well as proprietary versions of OHS management systems such as those marketed by Dupont etc. The shipping industry joined the ranks of those subject to health and safety management systems approaches with the introduction of the International Safety Management Code (ISM) during the1990s. Critics have pointed out that many such systems do not in fact contain all of the features of the systematic approaches advocated by the European regulatory requirements previously mentioned – for example they often have quite limited provisions for worker consultation and representation (Walters and James 1998). Nor is there a great deal of

[5] But they by no means entirely a consequence of such 'European approaches' since important influences on the development of health and safety management systems are found in both US and Japanese approaches to OHS management which themselves are located within more general schools of thought on management associated with these countries.

hard evidence to support claims made for their comprehensive success across anything like the range of different work situations that would be required to demonstrate it (Gallagher *et al* 2003). Other critics draw a distinction between such management systems and *systematic* health and safety management arguing that as well as requiring a comprehensive set of basic provisions such as employer responsibilities, an adequate definition of what comprises health and safety, competence and participation such systematic approaches cannot by definition be derived from bespoke packages imposed upon workplaces but must evolve from processes of assessment audit and review that are specific to particular workplaces (Frick and Wren 2000). Perhaps the most significant criticism of the application of health and safety management systems (and the one nearest to the concerns of the present paper is their acknowledged failure to deal effectively with managing health and safety in either small enterprises or in the fractured work structure and organisation that are increasingly the features of modern work practice (Gallagher *et al* 2003). This criticism would also be relevant to examining how the ISM code works in the fragmented management situations that are increasingly common in the shipping industry, where for example on any single vessel technical, commercial and personnel management may actually be undertaken by different companies.

Responding to change

The developments in regulating systematic health and safety management outlined in the previous section took place at a time when the fundamental structural and organisational changes in the world of work also described previously were taking place. Yet to some extent the ideal organisational model the regulatory approaches addressed was still that of a large, stable private sector organisation with a permanent, unionised, full-time workforce. Such an organisation would have been likely to have had a centralised management structure, specialised health and safety support services and worker representation for all its employees as well as relatively high visibility to the regulatory agency. As the previous outline of organisational change indicates, such a model has become increasingly less frequent in the modern world of work. Despite this, the broadened conceptualisation of the subject matter the regulatory principles addressed as well as the means of their application remain relevant.

For example an important consequence of the thinking behind the regulatory changes concerns ways in which they influence the validity of conceptual frameworks for understanding prevention of injury and ill-health. Traditional models of understanding how to prevent injury and ill-health have tended to polarise between those that are person orientated and those that focus more on the work environment. Person orientated approaches have been especially prevalent in approaches to preventing accidental injuries and fatalities. They mainly emphasise faulty human behaviour as the root cause of injuries and fatalities. In contrast work environment explanations emphasise aspects of the physical work environment such as dangerous machinery, toxic materials and ergonomically poor work equipment. However, one of the most obvious consequences of change in the nature and organisation of work is that especially in terms of its health effects, neither of these models is particularly helpful in understanding the processes at work or how they might be addressed to improve prevention of the psycho-social disease outcomes or the MSD that are major causes of ill-health and absence in modern work scenarios. What instead seems to be required are explanations that take account of the interaction between technology and organisational factors of the whole production system. This is precisely the change of consciousness that was developed in the thinking behind the EU Framework Directive previously outlined and which therefore is now widely recognised in OHS policy at national and international level and has legal support[6].

There is substantial evidence that this understanding, when it is included in approaches to systematic OHS management such as those envisaged by requirements found in the Framework Directive 89/391 and implemented in statutory measures in EU member states is one that works in improving both workplace OHS arrangements and their outcomes (Frick *et al* 2000). It is also a conceptualisation that is able to embrace many of the consequences of the changed world of work discussed previously – which former prescriptive measures would have missed. This is especially significant for managing health and safety issues at sea because, as

[6] See for example the decision of the ECJ in its judgement against the UK over the interpretation of the Working time Directive (Walters 2002:43). In this it followed the opinion of the Advocate General that in turn, relied on the Danish interpretation of 'working environment' to include working hours, psychological factors work organisation etc.

previously described, it is in the shipping industry that many such changes are particularly pronounced. It is important to ask therefore whether employers in the shipping industry apply the equivalent set of prevention principles to discharge their responsibilities to their workforce as those that are required of their land based equivalents, including:

- Avoiding risks and evaluating those that cannot be avoided
- Combating risks at source
- Adapting work to the individual
- Adapting to technical progress
- Replacing the dangerous with the non-dangerous
- Developing a coherent overall prevention policy that covers technology, organisation of work, working conditions, social relationships, and the influence of factors related to the work environment
- Giving collective protective measures priority over individual protective measures and
- Giving appropriate instruction and training to workers to enable them to work safely and without damaging their health.

To do so requires that a holistic understanding is developed concerning the effects of working at sea on health, safety and well-being for people thus engaged across the whole of their work and living experience while at sea (and in preparation to be so). Such an understanding would form a useful basis for prevention strategies that were aimed at achieving improvement across the broad range of seafaring work experience – and not simply focused on the behavioural proximal causes of injury.

Above all else what underpins the approach to systematic occupational health and safety management envisaged by current regulatory requirements is the idea that employers will assess risks to their workers in their own organisations, identify the most appropriate reduction and control strategies and implement them and monitor their effectiveness and appropriateness. This is absolutely not intended to be a paper exercise, but a very active and real process that is focused on the specific situation of

an individual organisation. The extent to which this actually takes place on land as well as at sea however is open to question.

A further difficult question concerns how to ensure such a conceptualisation of managing workplace risks is implemented in a *participative* way — as the regulatory framework requires it to be. The notion of worker participation in health and safety is rooted in two different sets of ideas that in practice overlap. One set concerns workers' rights to protect their health and safety from damage caused by its exploitation by employers. The origins of trade union representation on health and safety are largely grounded in this conceptualisation. The other set of ideas at the root of worker participation concerns the notion that managers need workers' knowledge and skills and therefore their participation if health and safety is to be managed effectively (Walters and Frick 2000). In practice workers' interests in health and safety can be represented simultaneously by direct engagement or indirectly through representation and there is some evidence to suggest that where workers' participation is most effective both occur together and act to stimulate and support one another. The logic of the regulatory requirement is therefore self-evident. Participative approaches to implementing self-regulatory OHS management are required because the involvement of workers and the their representatives provide, both the necessary expertise to ensure self-regulation is undertaken in an informed and effective way and because it also aids the necessary checks and balances on employers' self-regulation.

However, achieving such a situation in an increasingly non-unionised environment in which peripheral and contingent workers and fractured organisational settings are more and more common is widely acknowledged to be problematic and there is much to be learned on how to implement effective participatory strategies in these situations. The work environment on board ships is often typical of such scenarios but the extent and effectiveness of worker participation in health and safety, the supports and barriers to its operation at sea as well as its contribution to overall health and safety performance has been little studied.

The international changes in the structure and organisation of work and labour markets in the shipping industry referred to previously have contributed to the current limited role for workplace representation and its trade union support witnessed in the

industry. As we have already highlighted, for a number of reasons, organisation of labour in the shipping industry is a special case with only limited parallels with land-based experiences. However, such parallels exist and an important observation for the present discussion is that in recent times organised labour in land based industry has been subject to pressures that are not dissimilar to those already felt in seafaring. Changes in the structure and organisation of work and labour markets such as those described above as well as wider political and regulatory change puts increasing pressure on the ability of organised labour to represent workers' interests *at the workplace level*. In a recent Conference paper on union representation of seafarers, Sampson (2003) notes the empty 'union office' on board a ship and suggests that the most conspicuous union representation for seafarers such as that of the International Transport Federation, while important, is actually extraneous to the workplace of most seafarers. As has been widely demonstrated on land, the absence of workplace institutional structures of representation such as joint safety committees and safety representatives pose challenges for modern approaches to OHS management because worker representation is one of its key elements of such approaches. Growing awareness of this increasing problem in land-based situations has led to trade union efforts to find more effective means of representing the health and safety interests of workers in the fractured labour relations scenarios that are a consequence of the changes previously described. For example, there have been marked trends towards the achievement of better representation of workers interests in small enterprises and on multi-employer worksites, in which new strategies involving regional/territorial health and safety representatives, super safety representatives or health and safety convenors have all been tried with some success (see for example: Walters 2001; Walters 2004). Whether and to what extent such approaches may be relevant in seafaring remains to be explored.

Another aspect of the regulatory thinking behind improving health and safety management in shore based work concerns the issue of competence. Employers' responsibilities to manage the collective health and safety of their workers *competently* are prominent features in the regulatory frameworks implementing EU requirements. They are mainly designed to try to ensure that employers invest in appropriate specialist support from prevention services. The roots of these requirements are largely based on continental European regulatory models governing

the provision of occupational health services. Here again they are likely to work best in relation to large stable enterprises with central support services. They are far less likely to function effectively in relation to smaller enterprises, fragmented organisation and management structures and multi-employer worksites all of which are common in current work scenarios. There are of course other approaches to competence – such as in the UK where the issue is traditionally something that is defined by the professionals and the market and where employers have enjoyed far more discretion than in continental Europe. Yet relatively little is known about what actually works best in these different approaches. Nor does a great deal seem to be known about what might be the most appropriate way of addressing competence in relation to OHS management in the shipping industry.

As the above demonstrates, although the regulatory approach to achieving improved health and safety outcomes through greater attention to their systematic management remains relevant to modern work scenarios, there is much still to be learned about the most effective ways of achieving this in shore based work — as there is at sea. In the shipping industry efforts have been made to introduce a health and safety management systems approach through the introduction of the ISM Code. However, perhaps some questions need to be addressed to how effective this approach is across the complete range of work situations to which it applies at sea. It would be useful to know for example what is the extent to which the ISM Code can be said to stimulate ship and shore based managers to undertake 'active, comprehensive, programmatic and enduring responsibility for OHS quality'. It is also important to learn how it is best deployed to create a '*systematic managerial process* to detect, abate and prevent workplace hazards' and whether the preconditions exist to enable seafarers to participate adequately in this process as well as whether the use of *competent employees/services* form part of its effective delivery.

Perhaps the most difficult question to address is how to achieve these approaches to occupational health and safety management in situations in which the impact of globalisation has resulted in a trend away from regulatory surveillance towards more market based means of achieving improved standards. Here again the shipping industry is a prominent case.

On-shore policies on how best to achieve compliance in self-regulatory situations have increasingly emphasised supplementing approaches based around regulatory inspection with a more multidimensional approach that exploited employers' economic self-interest and levers in their business environment to improve health and safety performance without the need for regulatory intervention. Great emphasis has been given to the economic case for health and safety improvement and there are few in the health and safety world who do not firmly believe the mantra that 'good health and safety is good for business'. However it is a moot question how widely such beliefs are held (or more to the point – are acted upon) in the world of business and commerce. At the same time improving health and safety performance has been linked to the corporate social responsibility agenda and there has been much discussion about the means of 'winning the hearts and minds of industry' in this respect[7]. In these latter strategies, procurement, the supply chain, insurance incentives, the role of intermediaries, as well as greater emphasis on the provision of accessible information education and advice were have been included in a multidimensional approach on the part of the regulatory authorities to securing better health and safety standards. Such trends characterise regulatory policies to a greater or lesser extent in many of the developed market economies of Europe, North America and Australia/New Zealand, they have especially risen to prominence in the UK in recent years (HSC/DETR, 2000; HSC 2004).

They are part of the need that is increasingly recognised by state and international level policy makers for more multidimensional regulatory strategies and for regulators to think smarter and more strategically to discover the best use of regulatory intervention. Here, an appropriate balance of inspection with education, information, advice and other means and the commitment of other agencies to health and safety is promulgated. In so doing current regulatory strategies can be seen to lay great emphasis on winning a voluntary engagement in prevention on the part of industry and to seek what is seen as 'an effective balance' between such voluntary means and the effective use of regulatory tools. However despite the persuasive logic of such rhetoric, the question of what works remains largely unanswered. Reviewing the socio-legal research literature for example, one cannot fail to observe that that while

[7] See for example in the UK, HSC/DETR, 2000; HSC 2004

the evidence on the impact of regulatory interventions is far from complete, on balance it demonstrates the case for the effectiveness of formal inspection and enforcement far more significantly than it does for other 'softer' regulatory intervention strategies.[8]

The lessons of these developments are particularly important for the shipping industry, itself an exemplar of an industry that for much of its activity is remote from surveillance and intervention of regulatory agencies. As Sampson and Bloor (2005) have demonstrated in their paper on regulatory strategies on health and safety in shipping, so far, approaches to smart regulation and enforced self-regulation have enjoyed only limited success in the industry and they highlight the problems of regulating a globalised industry. There is therefore a good case for considering what further may be learned from current strategic approaches of land based regulators to dealing with the demands of regulating increasingly hard to reach situations with diminishing resources, in a political and economic climate that is antipathetic to traditional regulation of health and safety.

Conclusions: instrumental research, some ways forward and the search for deeper understanding

The health, safety and well-being of seafarers is a cause for concern – not only as a consequence of major disasters and highly visible occurrence of fatalities and major injuries but also because of the hidden burden of work-related ill-health and pycho-social problems experienced at sea. It is of course important to address these problems on ethical and moral grounds, but it is also important because as the land based evidence overwhelmingly indicates, poor health, safety and welfare outcomes are a significant cost to the economy, they are a poor advertisement for recruitment and retention of labour for industries that experiences them and they are a sign of poor management more generally.

[8] There is an international literature demonstrating this that is far too extensive to list here. For recent reviews however see, Davis (2004) and also research commissioned by the HSE (Greenstreet Berman 2003).

A large part of strategic development in OHS policy in advanced market economies in recent years can be seen as an aspect of governmental, industry, professional and trade union responses to the challenges of globalisation. Shipping is and has arguably been for a long time, a globalised industry. Moreover, it is an industry in which, for various well- documented reasons, only a partial picture exists of the everyday health, safety and welfare consequences of the changing nature of work brought about by the pressures of globalisation. Such consequences in land-based sectors, as the previous pages have shown, are significant, widespread and better documented than those at sea. The argument here has therefore been that the shipping industry may be able to learn something from this land-based experience.

There are lessons on several levels. First, there is much to be gained from a more detailed examination of the large body of research that identifies and analyses the changes that have taken place in the structure and organisation of work and labour markets and the various health and safety consequences that have resulted. Second a deeper understanding of the implications of the shift that has taken place in the conceptualisation of health and safety in regulatory thinking would aid better understanding of the increased dimensions of managing health and safety in modern work scenarios. Such increased dimensions mean that behavioural and technical approaches to improving health and safety are no longer regarded as complete. Work organisational factors and a more holistic approach to understanding the extent and nature of managing risks to workers health, safety and well-being, is required, from both a managerial and legal perspective. Third, the changes that have taken place in the structure and organisation of work mean that traditional approaches to managing health and safety no longer relate to the structural and organisational contexts in which work gets done, health and safety needs to be managed, and workers informed and represented. This is as true of the shipping industry as it is of many land-based sectors. Effective management strategies to address this as well as strategies to better inform and represent workers' interests are therefore needed. Last but by no means least, a better understanding is required of what works in regulatory and other approaches aiming to promote improved health and safety in an environment in which smart regulation and enforced self-regulation is desired. Here again, there is a growing body of land-based research concerning the efficacy of 'new strategies' to

persuade or coerce employers to improve their health and safety performance without resorting to regulation and its enforcement.

While it seems clear that there will be no easy solutions readily transferable from land-based experiences to address the current challenges to managing health and safety in the shipping industry, such experiences as those outlined in this paper would seem nevertheless to offer some pointers to gaining a better understanding of possible supports or constraints to what might work in the sector.

Finally, it is important to bear in mind that in looking for support from shore-based experience, focus here has been skewed towards an applied and instrumental understanding of such experience and the notion that the transferability of good practice needs to be further investigated across sectors. In this sense, the thesis has been that there may be elements of shore-based experience that are helpful in understanding better ways forward for much needed health and safety improvements at sea. However, social scientists are also interested in understanding the underlying conditions that create these experiences as well as the dynamics of processes that govern their operation. This interest extends to several issues implicit in the foregoing text and it would be over-simplistic and misleading to conclude that the instrumental approaches outlined above providing more than a partial understanding of the issues involved.

In most of the key areas described there is a need for further critical research into the underlying processes that affect successful implementation of ways to improve the management of health and safety on land. This is particularly so when addressing the consequences of change in the structure, organisation and regulation of work and labour markets. Developments discussed here result from changes in the drivers of the global economy and they represent enormous challenges to pre-existing notions of nation-state regulatory, economic and social welfare policies. Policy on occupational health and safety is a small but integral part of this larger picture. It needs to be understood in this context. It also important to bear in mind that these days, regulatory strategy cannot and does not ignore socially determined perceptions of risk or notions of accountability and social justice. It is worth noting in this respect that prominent amongst the examples of tragedies that have been instrumental in shifting public

perceptions of accountability and social justice in recent times have been several that have involved the shipping industry. In the public outcry that has followed such events the primary issue is not whether they were occupational or environmental disasters, but that people were placed at unacceptable risk and that duty holders/experts/regulators etc. had failed in undertaking their basic social responsibilities. Thus, further defining features of modern times, especially in advanced market economies, are debates surrounding corporate criminal responsibilities and the means of extending the effective application of the crime of manslaughter to serious corporate health and safety misdemeanours. A fact that perhaps the shipping industry also needs to bear in mind.

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SAFETY AND PERCEPTIONS OF RISK

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INTRODUCTION

Improving health and safety is a key concern for many industries. Historically, attempts to improve safety and reduce accidents have focused on technical solutions, such as automation (Weick., *et al*, 1999; Flin *et al.*, 2000; Cox and Cheyne, 2000). For example, in the aviation industry, the introduction of air traffic control systems have helped to reduced collisions between aircraft. However, although these technical solutions have met with significant success, what such attempts frequently ignore is the effect that individuals and organisations may have upon safety (Cox and Cheyne, 2000). As a result, it is suggested that, 'future improvements may best be realised through enhanced efforts in the area of human factors, and through the associated development of health and safety culture' (Cross Industry Safety Leadership Forum, 1997). There is much discussion over what constitutes a safety culture. A broadly accepted definition developed by the Advisory Committee on the Safety of Nuclear Installations (ACSNI, 1993) is:

> "The safety culture of an organisation is the product of individual and group values, attitudes, perceptions, competencies and patterns of behaviour that determine the commitment to, and the style and proficiency of, an organisation's health and safety management"

Other organisations have chosen to extended and clarify this definition (see for example, National Patient Safety Agency, 2004)

Although the concept of safety culture is universally understood, different researchers have utilised a range of measures to assess the strength of safety culture across a

[1] Please note, the opinions presented within this paper represent those of the author, and not of Lloyd's Register.
[2] The Lloyd's Register Research Unit is comprised of Dr Helen Sampson, Professor David Walters, and Dr. Nick Bailey, who as co-researcher participated fully in the collection of data for this study.

variety of industries. Most commonly these have been found to focus upon an organisation's management style, safety systems, awareness of risk, competence, and work pressure (Flin *et al.*, 2000). Whilst it may be argued that there are a range of common practices that assist in the establishment of safety cultures across economic sectors, as indicated in Flin *et al.'s* (2000) study, there are also industry specific issues that need to be taken into account. Like other sectors, the context of the shipping industry is a very specific one which is likely to have significant implications for the establishment of organisational safety cultures. There is therefore a need for specific research in the maritime sector.

What are the benefits of a 'positive' safety culture? Research has indicated a number of links between safety culture and accidents (Mearns *et al.*, 2001; Rundomo, 1994; Lawton and Parker, 1998). For example, Rundomo (1994) found that there was a correlation between frequency of accidents and 'cultural factors' such as safety attitudes, satisfaction with safety measures, and employees' commitments to safety (Rundomo, 1994). However it is not simply 'poor' safety culture which increases the probability of accidents. Commitment to a safety culture may vary across a company (Harvey *et al.*, 2002; Clarke, 1999), and such fluctuations may have important implications for safety and accident rates. It is suggested that such variations in 'culture' can produce poor co-operation, antipathy and miscommunication' (Clarke, 1999; Harvey, Bolam, and Gregory, 2000). This may be especially pertinent within the maritime industry, as those onboard vessels are physically removed from their managers, and it has been shown in other industries that managers play a critical role in the formation of attitudes and behaviour towards safety (Clarke, 1999). However, the existence of sub-cultures, or differing safety cultures within an organisation, do not always have negative implications for safety; especially if these differences are both recognised and accurately perceived (Clarke, 1999).

This paper describes the first phase of a large-scale study of safety culture in the maritime industry. It outlines the main findings from a number of focus groups and interviews which assessed what those working both onshore and onboard vessels are most concerned about in terms of safety. Differences in their concerns will also be tentatively discussed.

METHOD

In order to examine the main safety concerns of those working in the maritime industry a combination of focus groups and interviews were conducted. These were conducted using interview guides, covering key safety-related topics. Two versions of this guide were used, one for those working onboard vessels, and one for managers (see table 1 for an overview of the topics covered).

Table 1: Topics covered in the focus groups/ interviews with onboard personnel and managers.

Onboard personnel	**Managers**
1. Why did you go to sea? 2. Was your experience of being at sea different to your expectations? 3. Did you have any concerns before you went to sea? 4. What are your daily activities at sea? 5. What are the risks relating to your job? 6. What are the risks of being at sea? 7. Are there any ship type specific risks? 8. Do you have control over these risk? 9. Are there any major risks at sea, in general, which are not being addressed?	1. Background in the maritime industry? 2. Questions abut the organis ation and its structure? 3. Who is responsible for safety? 4. How the company operates? 5. What is management's role in safety? 6. Questions about the general issues facing the industry 7. Questions about the introduction of legislation such as ISM and ISPS 8. How safety is managed in the company? 9. Operating priorities? 10. What are the main risks to the companies vessels? 11. What are the risks to the seafarer? 12. What steps are the company taking to reduce risk?

Participants were recruited with help from a number of organisations including shipping companies, management companies, UK maritime colleges, maritime colleges in the Philippines and in Singapore. Using these sources ten focus groups were conducted with: managers from four shipping companies; a group of engineers; two groups of deck officers; a group of cadets; a group of ratings; and a mixed group of officers. Two individual interviews were also conducted, with a captain, and a chief engineer.

FINDINGS

The focus groups and interviews identified a number of key safety concerns for those working within the industry. Throughout this paper verbatim quotes are used to illustrate these.

One of the most frequently raised concerns in relation to safety was that of high workloads. This related to a number of issues, such as high levels of paper-work, the number of roles seafarers were having to take on and the long hours they were working.

Paperwork is becoming an increasingly central part of a seafarer's job. It may take various forms such as the completion of checklists, communications with shore based managers, and activities associated with risk assessment. This situation has been exacerbated by the introduction of new legislation and the introduction of new electronic forms of communication such as email. When discussing paperwork participants referred to several different types of activity, and included such things as: risk assessments, completing checklists and answering queries from the office. Moreover such activity was often viewed as superfluous, as one Chief Engineer reported:

> "You used to be able to work and do the same job a few years ago without having to fill all the paper-work out, and you had a good idea of the hazards that were involved. When the paper-work wasn't there you would still do the job and take the safety precautions, but you didn't have to go through a checklist" (Chief Engineer)

A similar sentiment was expressed by this Deck Officer:

> "In the past you could probably just get on with your job, but now you have got all this extra paperwork to tell you how to do your job, and then you have to sort of sign to say you have done these things. So it is a lot more paperwork a lot more extra burden" (Deck Officer)

Increased levels of paper-work were said to not only add to the amount of work of those onboard, but many suggested it actually prevented them from doing what they saw as their 'real' job. This view is illustrated by the following comment from a captain, who talked about having to finish routine paper-work instead of being on the bridge as his vessel approached a port:

> "The guy will come in and say, 'excuse me sir we are 3 minutes from [the pilot station]' and you say, 'Yeah, OK, thanks'. Then he will pop in and say, 'We're at A1', and you will go, 'OK, just a second, I'm on my way', but you aren't, you are finishing the wretched paperwork" (Captain)

In this example the captain felt that he should have been on the bridge but he found that instead, he was bogged down with paperwork. The safety implications of this are self-evident, and the captain himself was uncomfortable with the situation.

Other seafarers reported dealing differently with extra paper-work. For example, one cadet talked about having to spend extra time every week on top of his working hours in order to complete all his required paperwork. He told us that:

> "You could sit there for hours crossing stupid little boxes. There is no need for it. They are asking that you only do certain hours a week, but then your spend another 2 hours a week filling in the forms" (Cadet)

This example illustrates the danger that additional paper-work may lead to longer working hours with implications for fatigue, and increased risk of fatigue-related incidents.

Our evidence suggests that the issue of increased workloads is recognised by onshore managers. As with those working onboard, managers frequently associate increased

workloads with increased amounts of paperwork. Managers were concerned with the work required of captains as the following quote illustrates:

> "Yeah, because they [the master] must be completely bogged down with paper-work sometimes. I mean they can't get on with their proper job" (Managers)

However they were also concerned with the workloads of seafarers across all ranks. One told us that:

> "[Due to ISPS] men are being taken away from what seamen are supposed to be doing on the ships, so the ships going to suffer" (Managers)

What these examples appear to illustrate is that there is a shared perception among a number of the participants that seafarers undertake certain tasks which are seen to constitute their 'proper job' and which are essential and relevant to seafaring. By contrast, doing paperwork is perceived to conflict with the performance of these tasks. Such perceptions may lead to frustration and a sense of disaffection which in turn could feasibly undermine attempts to develop a positive safety culture.

Research shows that in other industries the role of management in promoting a positive safety culture is central. However, ship managers often reported that, while they appreciated the challenges posed to sea staff, they felt unable to effectively address the problem. Reasons cited included the fact that putting extra crew on board was financially prohibitive. This finding will be discussed in more detail later.

Many of the comments about workload also related to the number of tasks and roles those onboard were expected to carry out, which were, in turn, frequently attributed to the implementation of legislation, such as the International Ship and Port Security (ISPS) Code. The ISPS code requires that vessels must carry out drills and have documented plans with regard to security. As part of these plans, onboard personnel are designated certain roles (e.g. security officer). The ship's security officer is expected to oversee the implementation of the security plan, for example making sure, whilst in port, that access to the vessel is controlled. It was reported that this generally entailed having someone stationed at the gangway at all times. Such requirements were perceived as placing additional, and unreasonable, demands on those onboard:

> "It impossible, there is no time to do it all, there are two many drill, legislation, the burdens there, you could lay the ship up….You could spend a week in three doing it all couldn't you" (Managers)

A number of seafarers reported that because of the demands upon their time they felt that the only way they could cope was to complete paperwork without having undertaken associated tasks. This was reported to be particularly the case where activities were supposed to be done on a regular basis. Instead seafarers told us that checklists were simply being completed to say that the task had been undertaken. The following example is illustrative:

> "14 drills it's impossible. OK we are doing it, but by paper. If any comes they say OK everybody's signature - there and there, put one stack of paper, sign, sign, this paper, seven people sign. Signing, people have no choice. We have to follow the regulation, but practically it's not possible" (Deck officer)

Reports of such behaviour were not just restricted to drills, but also referred to the completion of checklists to say maintenance had been done when it had not.

A positive safety culture requires a commitment to safety from all members of an organisation, where they accept safety as part of their daily job, and adhere to safety protocols. The reports of behaviour presented here, however, seem to suggest that the perceptions of those onboard, as to the contribution of certain tasks to organisational safety, are at odds with those who designed the procedures. As such this would seem to be indicative of a weak safety culture aboard some vessels.

A side effect of heavy workloads is that those onboard have to work long hours, which often leads to a lack of sleep and rest, ultimately culminating in fatigue. The following comments illustrate the number of hours crews are regularly required to work, and how this may lead to tiredness and fatigue, and potentially dangerous situations:

> "I work about 14-15 hours a day, so by about a week into the start of your second week I know I start to make mistakes because I am practically falling asleep" (Deck Officer)

> "I've seen situations onboard where as well as watching out for your own personal safety I'm watching everybody else's as well. It's not their fault its just they've been so overworked and they get to a stage when they're just so tired they're a danger" (Cadet)

The outcome of such long working hours is frequently fatigue, and there are many cases, such as the collision between the *Hoo Robin* and the *Arklow Marsh*, in which fatigue, due to high workload was seen to be the key factor in the incident.

In an attempt to reduce long working hours, seafarers may take shortcuts which compromise safety in order to complete certain tasks more quickly. This is illustrated by the following example in which a deck officer admits taking short cuts so that he can get off duty quicker:

> "I think that the majority of accidents happening due lack of rest. I mean I know that if I have been doing some jobs I take shortcuts because I know when the jobs finished I will get to my bed." (Deck officer)

High workloads often mean that crews work hours in excess of what can be legally worked or recorded. This may lead to falsification of documentation in order to comply with working hours legislation. This is graphically illustrated by the following examples:

> "The captain gets the worse of everything because he has to be up taking the ship in, then he has all the shore side authorities to deal with, and for him to do 8 hours on, 16 hours off, or at least to have a 8 hour break in a 24 hour period is pretty impossible, but you're not allowed to put that down" (Chief Engineer)

> "Because of the ISM system and everything sadly the documentation that we do on ships is very well, but everyone knows that documentation is also fudged – hours of rest he has to be so many hours a day, but if you work 20 hours a day …. no one is going to allow you to do that" (Deck officer)

Fatigue not only has an impact on the safe operation of the vessel but may also affect the well being of seafarers in other less dramatic ways, producing, for example,

reduced sociability and poor self esteem. So why do seafarers fail to report excessive working hours? A simple explanation may be fears about contract renewal. This may lead seafarers to work long hours, undertake large amounts of paper-work, and undertake tasks which are not part of their job. Such concerns were indicated by many of those in the focus groups, for example a deck officer reported that:

> "If you say no I cannot do it and tell them its not my job and you show them in the black and white again you are scared … about what will happen" (Deck Officer)

> "Even the duty officer if he says I cannot do it, the company will within 24 hrs say Ok I will find somebody who can do it. So whatever the crisis you have to just bend and take what's going on, there's nothing you can do about it" (Deck Officer)

Not only may fears about contract renewal lead to seafarers working long hours, which may ultimately culminate in fatigue, but they may also mean that companies do not actually get made aware of these long hours, and thus management may not recognise the need to address them. Of particular significance in terms of safety culture, is the impact of routinely falsifying safety related documentation. Such practices inevitably erode commitment to safety practices and to safety culture.

Another safety concern frequently reported by both managers and seafarers was associated with a reduction in crew size. Regulation requires that a ship has a minimum number of crew aboard. These minimum levels are outlined in a vessel's safe manning document, which all vessels are required to have. Specific crewing levels are agreed between ships operators and maritime administrations (i.e. for the UK this is the Maritime and Coastguard Agency). As a result there are often significant variations between the safe manning levels of similar vessels under different flags.

Despite the introduction of 'safe manning certificates' it was frequently reported that there were not enough crew onboard to cope with high work loads. This perception is illustrated by the following quotes from both a rating and a captain:

> "Unfortunately we don't have enough people to cover on the deck to allow breaks, so, when you are working everybody is working. And it is no different in my company as it is in other companies" (Captain)

> "Its no good the guy saying well if the master knew he was tired he should get someone else to do it, you are getting to the stage where there isn't anyone else" (Captain)

Although some mangers put additional crew onboard their vessels (over and above that specified by the 'safe manning certificate'), many do not. Some managers reported that they were not able to allocate more crew to a vessel, due to financial constraints imposed by owners who were unwilling to pay extra wages. However, many vessel managers indicated that they would prefer to have more crew onboard their vessels.

In the context of short-staffing new regulation was often unwelcome aboard and onshore. As a result the safety benefits of regulation were often over looked and new regulation was thus at risk of being paid lip service rather than being wholeheartedly incorporated into work practices. One manager told us:

> "I've got a pet peeve, which is a lack of bodies onboard, specially now with ISPS coming, and all the additional demands on the crew, which are being forced upon them by people from shore side. It's just putting extra strain" (Manager)

Whilst a deck officer took an alternative view emphasising the need for companies to crew vessels properly so that beneficial regulation could be effectively implemented:

> "It is really good the ISM the STCW 95, the ISPS everything good, but there is no doubt about it, but then at the same time the companies like they should realise how much workload or the work pressure there is on the people working onboard, you know with such short manning and day by day it is getting bad." (Deck Officer)

There was evidence to suggest that the practical aspects of new legislation were not yet being taken into account by many ship owners and operators. For example, as discussed earlier, a practical outcome of ISPS legislation is the need, when a vessel is in port, for there to be someone on the gangway at all times. However in many cases seafarers told us that there were simply not enough crew members on their vessels for

this to happen. This lack of crew for tasks relating to legislation was recognised by both managers and those onboard. The recognition was not limited to seafarers alone as the following quote illustrates:

> "this thing ISPS came in a few months back …… now one person is fully blocked whenever the ship is alongside because of the gangway watches. Companies knew this, ships staff knew it, but the company is not providing any extra hands for that" (Deck officer)

However a few larger companies were reported to have taken the additional demands made upon seafarers' time, by regulation such as ISPS, into account when crewing their vessels.

In companies that did not take these steps, some seafarers felt that the crewing levels were so low that they compromised effective on-board safety responses. This view is illustrated in the following example in which a Chief Engineer talks about the number of staff needed for the tasks that must be undertaken during fire drills onboard:

> "If you are doing a manifold foray you need at least two fire hoses, so you need two teams, two men on each hose, 1 man backing up, and you might have to have BA [Breathing Apparatus] sets to go in and shut the valves, say under a water curtain, and you need a backup team for that, and then you need people that are monitoring the BA board, and then of course you have the captain, who will be on the bridge overseeing everything, directing operations. So eventually if you think of all the things you have to do for a manifold fire you can eventually run out of people ….. it has got to the point, where there are some [emergency] scenarios that we work on while were at sea, where we basically don't have enough people to cover" (Chief Engineer)

This lack of staff may not only mean an increased risk for those working onboard as they may not be able to deal with emergency situations safely, but in the worst case scenario could lead to the loss of the entire vessel.

On a daily basis, insufficient crewing may also result in 'unsafe' practices in order to get work done. We were told, for example, of single crew members doing jobs which ideally required two people for safe conduct. Isolated working was often seen as poor safety practice by those onboard but it was nevertheless, reluctantly implemented as a result of crew shortages. One deck officer explained:

> "The manning levels have gone down, earlier we had crew when I was a cadet, the chief officer always made sure everybody worked in twos….but over the years now because of this thing is going down the manning level and the mate has got too much work to get done so he just lets people work everywhere" (Deck officer)

A manager echoed this view observing that:

> "On top of that you've only got 10-12 people as well, so often there isn't somebody around to stand at the bottom of the ladder" (Manager)

Such isolated working produces a risk of accidents remaining undetected for significant periods of time, resulting in increased numbers of, and more serious injuries.

There was a concern among some seafarers that a 'macho attitude' sometimes prevailed aboard resulting in a acceptance of danger, and a failure to take steps to reduce this danger. The following quote from a rating illustrates the acceptance of seafaring as a dangerous occupation:

> "At the end of the day it's a dangerous job" (Rating)

This kind of attitude is likely to impact negatively on safety behaviour and safety culture, for example people may, as a result, routinely fail to follow procedures, or use appropriate safety equipment. Sometimes senior officers were felt to impose their 'careless' attitudes on their subordinates as the following comment from a rating illustrates:

> "They say like you shouldn't stand in front of the helicopter on the heli-pad. But no our mate tells us to, he seems to think that invincibility suits are fire suits on, and wants us to stand in front of it" (Rating)

This attitude was felt to be most commonly held by those who had spent longer at sea, and it is these people who were considered to be less open to new safety measures laid out in safety-regulations. They were also reported by managers to have the attitude

that, 'I have never done this before, why should I now'? The following quote is illustrative:

> "I'm still finding is a slight reluctance on the part of some of the older people. The younger people have been educated differently as far as health and safety are concerned. The older personnel at sea, are still of the fact, why do we have to do this, why do I have to wear that, I've never worn a safety harness climbing a mast before, why do I need to wear one now" (Manager)

This may suggest that many, especially older seafarers are not taking ownership of safety systems, with International Ship Management (ISM) being seen as not really relevant, and something which managers have imposed on them. For example:

> "It's amazing how many of them are still saying, 'oh well the company's procedures', and not its theirs" (Managers)

Therefore it would seem that there is variable commitment to safety culture within shipping companies, and that a 'macho' attitude to safety in this predominantly male occupation may inhibit the future development of strong safety culture.

In addition to problems of safety culture the research also highlighted some practical barriers to safe operations aboard ship. The most significant of these seemed to concern communication and language. Nowadays many ships are crewed by mixed nationalities, reflecting the global market in seafarer labour. Although 'English' is generally accepted as the language of the sea, concerns about safety were frequently reported in relation to communication difficulties. Communication difficulties were said to hamper day to day tasks, making routine procedures difficult; for example a deck officer suggested that:

> "Language barrier are a problem…. you may be have some one on the bridge radioing down to someone down aft or forward who is a different nationality, and who then has to tell the crew who is again another nationality. Sometimes that can be a problem" (Deck officer)

These language difficulties were also pointed out by managers, for example:

> "The junior Dutch officers couldn't speak that language either, so even in routine operations when the masters giving orders in Bahasa, the junior officer on the bridge didn't understand what was happening" (Management)

The safety implications of such difficulties are self-evident in the day to day operation of the vessel, however seafarers also expressed concerns in relation to emergency procedures. They suggested that in emergency situations crew would revert back to their 'own' language, and communication would be ineffective and difficult. As one cadet suggested:

> "Again I think the language barrier is a problem, it provides some sort of barrier when it comes to safety as well. If there was an emergency onboard, a lot of peoples first instinct is to panic. Ok maybe when your at sea you don't, but if these guys start communicating in Bulgarian, were going to be standing there as if to say what is going on….that leaves you in the dark, you just don't have a clue " (Cadet)

Discussion

The aim of this paper was to identify the key safety concerns of those working in the maritime industry, following the conduct of focus groups and interviews with a wide range of personnel across the sector. A common view amongst seafarers and managers was that workloads in combination with current crewing practices and new regulatory requirements militate against safe working practices and the development of effective safety culture. Often seafarers blamed safety regulations for their excessive workloads producing an antagonistic attitude that can be seen as counterproductive in terms of efforts to establish safety culture. Other issues such as 'macho' attitudes to work and a failure to ensure adequate levels of English among multinational crews were also considered to hamper the development of routine safe working practices.

However, although there was general agreement concerning many of the safety concerns amongst managers and those working onboard vessels, there were also a number of important areas of difference. For example, although both managers and those working onboard recognised that crews were subject to high workloads,

managers did not talk about the practice of document falsification in order to comply with working hours legislation.

This may be interpreted in two ways: either managers genuinely do not realise that those onboard their vessels are falsifying records (which seems unlikely in many cases), or they feel unable to do anything about this, perhaps, due to pressures of commercial competition, and thus turn a 'blind eye'. This leads to dangerous situations, where crews are seen to be complying with working hours regulation, and managers are not obliged to change working practice policies, producing excessive workloads, long working hours, and the potential for extreme fatigue.

Such differences are indicative of variations in perceptions of safety amongst key groups in the sector. These may negatively affect safety, hampering the ability of management to make informed safety policy decisions, which could cumulate in the development of dangerous onboard situations.

The safety concerns identified in this study were often similar to those highlighted by research in other sectors. For example the 'shortcuts' factor described here can be seen to parallel the 'risk taking' behaviour identified by those working in nuclear processing plants (see Harvey *et al.,* 2000 for more details). However, there were a number of factors identified which can be seen to be specific to the maritime industry, and this may relate to the 'unique' nature of the job. For example, communication was found to be an important factor which has not been identified in other industries.

The preliminary findings presented here would seem to support Flin *et al.'s* (2000) suggestion that the concepts which make up a safety culture are specific to an industry, and are likely to vary according to work environment and practices. Such differences have implications for the development of measures designed to foster safety culture, as they imply that measures adopted elsewhere may not simply be grafted on to the maritime industry.

The development of specific measures designed for the maritime environment is required to maximise the successes of attempts to build a safety culture across the sector. The next stage of this project is a wide scale survey of the safety concerns of

those working in the maritime industry, which is designed to properly inform the future development of strategies to strengthen safety culture across the industry.

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TRAINING, TECHNOLOGY AND AIS: Looking Beyond the Box

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Introduction

The application of new technology has long been utilised to achieve safety and or efficiency improvements. This is very much the case in the maritime industry with ship's bridges and engine control rooms regularly being fitted with new pieces of equipment. Recent developments have included ARPA radar, digital electronic charts, GMDSS, stability programmes, dynamic positioning systems and remote engine machinery monitoring and operating systems. Most recently, perhaps, we have seen the mandatory introduction of Automatic Identification System (AIS), for all merchant shipping over 300 gross tonnes undertaking international voyages, which took place in December 2004. However, the effectiveness of these systems is reliant upon the competence of those who operate them. Indeed, it has become a matter of common currency in discussions about maritime safety to note that 80% of all maritime incidents are due to human error.[3] Nevertheless anecdotal evidence suggests that crews are often inadequately trained in the use of equipment installed aboard ships.[4]

This paper reports on part of a study to determine the extent to which crews receive appropriate training when new technology is introduced aboard ship. In particular, the study focuses on the case of AIS. In so doing it raises questions in relation to maritime training.

AIS is an electronic system originally intended to improve the safety of navigation. Under the auspices of the IMO (International Maritime Organisation) SOLAS (Safety of Life at Sea) convention a planned timetable was in place for the gradual and phased introduction of AIS to be fully implemented by 2007. However after the terrorist attacks of 9/11 the focus of attention changed and the system became more greatly valued in terms of its security benefits.[5] Consequently the implementation date was

brought forwards, with full implementation to be achieved by December 2004. Whilst maritime authorities have, in general,[6] tended to focus on the technical issues of implementation and equipment design,[7] less attention appears to have been given to the issue of operator training in the rush towards implementation.

AIS the System

The basic principle of AIS is the automatic transmission of information by VHF radio between ships and between ships and shore stations. As a ship comes within range of another ship, or a shore station, it automatically identifies itself. With this system ships can be more easily identified and detected earlier than with radar alone. The range of AIS is currently determined by the height of radio antennas, but the system could be integrated into satellite systems to provide global coverage. The benefit of the system as originally conceived is its potential to contribute to improved situational awareness for both those ashore (monitoring shipping) and for those on the ship's bridge concerned with collision avoidance. The inventor, Dr Hakan Lans, identified the system's contribution to collision avoidance as the main benefit to the maritime industry.[8] The United States government, by contrast, has focused on the capacity for shore side identification and tracking of ships and the potential for improved security awareness. In order to achieve either objective the system needs to be effectively operated. In this paper, however, the focus will be upon its contribution to safer navigation.[9]

The shipboard AIS system is basically a means for automatically and repeatedly transmitting differing types of information[10]. These are:

1. Static information entered into the system when the AIS unit is installed.
    - MMSI number
    - IMO number
    - Call sign
    - Name
    - Length and Beam
    - Type of ship
    - Location of position fixing antenna on the ship

2. Navigational data which principally derives from the onboard electronic navigational systems.
    - Position time stamp (UTC)
    - Course over ground

- Speed over ground
- Heading
- Navigational Status
- Rate of Turn

3. Voyage related information which must be entered at the start of each voyage.
    - Ship's draught
    - Hazardous cargo
    - Destination and ETA
    - Route Plan

AIS therefore has the capacity to improve situational awareness via the production of information that allows a clear picture to emerge of which ships are in the vicinity, where they are heading and what they are actually doing at any given moment. This is obviously important for both shore side authorities and ships' officers. We shall concentrate on the latter group.

For the navigator on the ship's bridge the ability to positively identify surrounding vessels by name and type, combined with the availability of voyage information and real time vessel movement information - such as course and speed, provides for an improved awareness of the developing navigational situation against which to make collision avoidance decisions. However, to make effective decisions on the basis of AIS data requires that the data transmitted is correct and that those receiving the information are able to interpret it correctly. This requires that the system has been correctly installed and is fully functional. This in turn requires that additional equipment like the ship's compass and rate of turn indicator are operational and correctly integrated with the AIS unit. A failure of these systems could lead to incorrect navigational information being transmitted. Likewise, operator entered data must be correct. With reference to the latter, there are two points at which data entry errors could occur: firstly, at the time of installation when the technician enters static information such as IMO number; secondly, when voyage data is entered at the beginning of each voyage by the bridge officer.

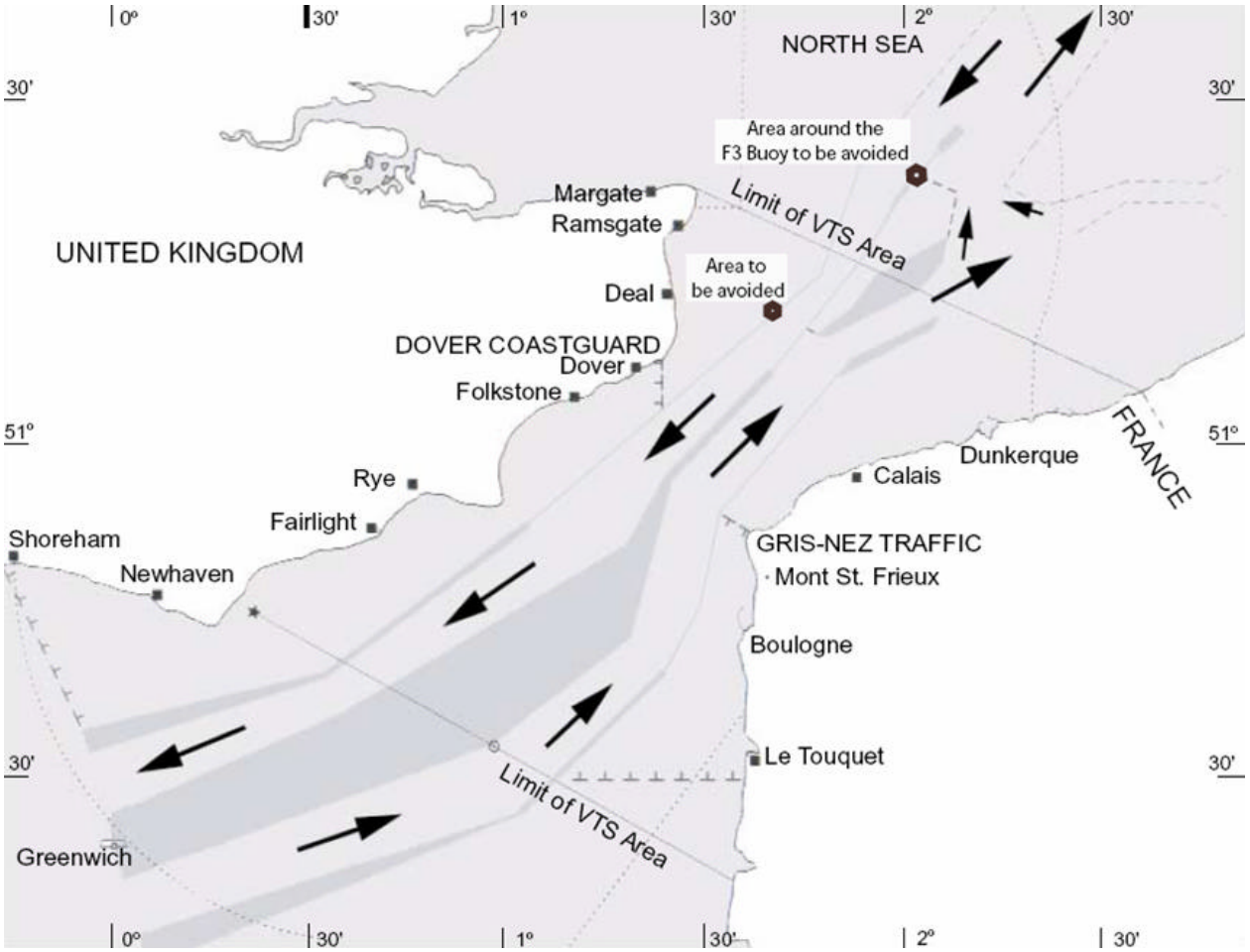
Assuming the data transmitted and received is correct the navigator needs to know how best to utilise the information. To do so requires a basic understanding of the system and the basis of the information presented. In particular, the bridge officer requires an appreciation of potential errors, in order to appropriately assess any risk

and to develop a suitable level of trust and confidence in the system. Moreover it is necessary for the ship's officer to know how best to utilise the information received for the purpose of collision avoidance. None of these elements is intuitively obvious, but rather, we would argue, they need to be explicitly taught. Indeed there is growing evidence to suggest that there are problems emerging related to AIS, in terms of both equipment design and operator use.[11] Hence, this research was undertaken to examine, systematically, the type and extent of some of these problems and to assess whether they may be connected to operator training.

The Research Site

The research was undertaken over a period of seven days at Dover Coastguard Channel Navigation Information Service (CNIS). Dover is one of the busiest shipping lanes in the world with up to 500 vessel movements a day. The Dover Straits consist of a relatively narrow body of water between the United Kingdom (UK) and France. It is principally demarcated by two shipping lanes which serve to separate vessels depending on the direction in which they are heading (Figure 1). Those ships proceeding South West stay on the UK side of the Straits and those heading North East stay on the French side. All South West bound vessels transiting the Dover Straits report to Dover Coastguard. North East bound vessels report to the French authorities. The reporting area for the Dover Straits consists of a bounded area labelled 'limits of VTS Area' on the map below (Figure 1).

Figure 1. The Dover Straits



The CNIS is operated 24 hours a day, 7 days a week, by four teams of 6/7 persons per watch. The watch team members are all highly trained maritime specialists. They monitor vessel movements, provide navigational information and co-ordinate emergency response for vessels operating in the Straits. To facilitate the performance of these functions, all vessels operating within the South West bound lane of the Dover Straits are required to report to Dover Coastguard and to pass them specific information, including information which is also transmitted by AIS. Dover CNIS also operate radar tracking which is integrated with their AIS receiver and allows AIS data to be displayed on the radar screen.

Data Collection

Data collection consisted of two distinct elements. Firstly, with the availability of both AIS data and information transmitted verbally by VHF, as ships reported to Dover Coastguard (CNIS), it was possible to create a record of discrepancies between the two sets of information to ascertain the type and extent of errors that were being produced. This data was collected by the CNIS operators as they spoke to each vessel in turn.

Secondly, two researchers, working 12 hours on / 12 hours off, provided 24 hour a day monitoring of VHF transmissions for a period of 7 days, between ships operating within the vicinity of the Dover Straits. The aim was to determine the extent to which ships' officers were using VHF to negotiate collision avoidance and to ascertain whether and how AIS was influencing behaviour. Inter-ship calling was monitored on VHF channel 16, the international calling channel, and calls were followed across working channels. Details of conversations were noted and later categorised according to the purpose of the call. A radar set and computer were also made available for use by the researchers to aid the identification of vessels and to facilitate access to a database of ship details. Where vessels could be clearly identified their details in terms of type of vessel and flag were also recorded. Because of a lack of clarity in the pronunciation of names and / or the quality of the signal and background noise, these details were not always obtained.

During the period of the study there were two vessels regularly calling other ships, these were a vessel conducting a survey and a fisheries protection vessel. The decision was made not to record these calls, as they did not constitute typical examples of routine inter-ship calling and would have distorted the findings. Likewise, a number of vessels (13 cases) were recorded making calls where the proceedings were all conducted in a language other than English and outside the competencies of the researchers. These were not included in the data set. Hence the prevalence of inter-ship calling is actually more extensive than the data reported here.

Additionally, fieldnotes (written notes) recording discussions with operators and observations relating to procedure were also made during the period of the study.

Findings 1: Discrepant Information

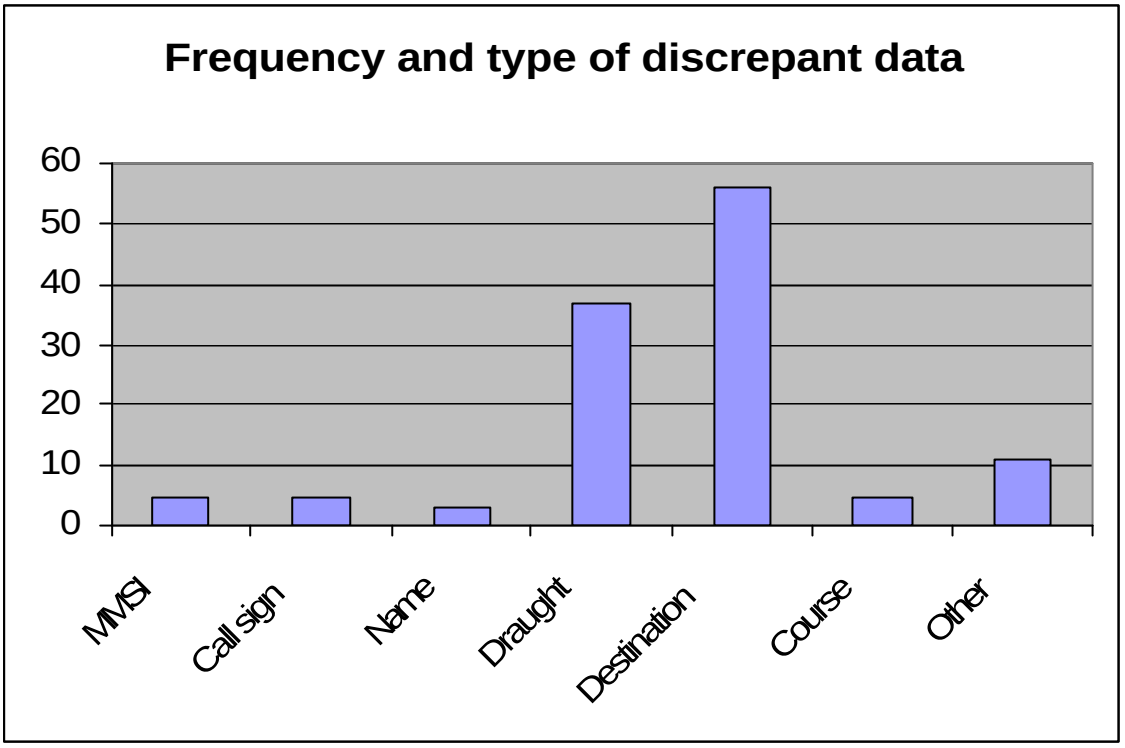
Dover CNIS produce a daily record of vessels operating in the South West (SW) bound traffic separation lane.[12] During the week-long period of the study Dover operators recorded 806 SW bound and crossing ships. Of these, 84 vessels, i.e. approximately 1 in 10, were recorded as presenting differences between the data transmitted by AIS and that conveyed by VHF. From these 84 vessels, there were 122 discrete items of discrepant data transmission recorded.[13]

The types of discrepancies recorded relate to the following types of information:

MMSI	A unique 9 digit number that is assigned to a ship's radio station.
Call sign	A unique combination of letters and numbers that identifies the ship and is assigned by the flag state. Call sign is often used during verbal communication for identifying a ship as it is easy to transmit phonetically. An example would be MUP2, said over the radio as "Mike Uniform Papa Two".
Name	Every ship is given a name by its owner / operator. It is not uncommon for several ships to have the same name.
Draught	The depth of water measured vertically from the waterline to the underside of the ships keel.
Destination	The place the ship is bound for.
Course / Speed	The ship's course and speed measured over the ground as input from a compass and global positioning system (GPS).
Other	This includes, comments inappropriately added to the 'ship type' dialogue box and misuse of the text message facility.

The assumption is that the verbally transmitted data is correct and that the AIS information is in error. Critical navigational information like the vessel's draught and destination 'ought' to be readily available to the navigating officer when reporting to Dover. Moreover many of the discrepancies consist of wrong names or spelling, which clearly locate the error with the AIS data. The frequency of errors is shown in the table below according to type of information transmitted.

Figure 2.



A number of points can be drawn from this data.

It can be seen (Figure 2) that the greatest number of instances of discrepant information transmission related to 'destination' data. Errors included: misspelling, empty data fields, unintelligible abbreviations and reference to the previous, rather than the destination, port.

The second largest category of errors related to draught data. The majority of discrepancies consisted of a difference of 1.0m or less, but there were three cases where the difference was 3m or more. Indeed, in one case, a tanker displayed a draught of 7 metres on their AIS but verbally reported a draught of 11 metres, which represents a significant difference in navigational terms. It is not clear whether these cases were indicative of a failure to update the system or of wrongly entered information. Either way, the fact that vessels were transmitting such critical navigational information in error must raise concerns. Given that the information should be updated each time the vessel leaves port, this raises serious questions as to why it was so often in error.

Examples of errors relating to call sign, name and MMSI number consisted of misspelling and blank spaces. It was also pointed out by the operators that it is not unusual to see lewd comments appearing where these details should be. As one operator stated:

> The information is often wrong; you see 'call signs' like 'f**k' or 's**t'. The technicians that set them up just enter crap.
>
> (Fieldnote)

It is perhaps surprising that there are any instances of error relating to call sign, name and MMSI number as these are initially entered when the system is installed. However they may be modified by password entry, which may be necessary if, for example, the ship changes flag or name. The fact of such errors, however, raises further questions regarding the integrity and professionalism of those installing the equipment and / or the access that others have to this level of data input. The fact that basic identifying information may be incorrect is clearly significant for shore-side authorities concerned with issues of security but also for any ship's officer seeking to establish contact with affected vessels.

From the point of view of improved situational awareness and collision avoidance, it is significant that there are instances of course / speed information being incorrect. This information can be overlaid on a radar screen to produce a vector indicating a target ship's course and speed. Where the information displayed is incorrect there is clear scope for an officer to make a poor decision on the basis of what is presented. In the five instances observed the vector was 180 degrees out. Thus a vessel could have appeared to be going away from an observing ship, giving a bridge officer the sense that the target was not an immediate cause for concern, when in fact the two vessels were proceeding towards each other.

Finally, examples from the 'other' category include: the inappropriate addition of comments such as 'not under command' in the *ship type* field, and the transmission of a 'Mayday' message via the text facility when there was no distress. Even after Dover Coastguard had responded to the latter message, the vessel continued to transmit it. This may suggest that the crew were insufficiently competent in the use of the system to know how to stop the transmission.

Additional Issues

From discussions with CNIS operators several other problem areas were identified.

A problem associated with radar derived data is a phenomenon known as 'target swap'. When two vessels pass close to each other it is possible for the symbology (and associated information) relating to one vessel, e.g. the vector indicating course and speed, to swap to the passing ship. This can introduce an element of confusion into the decision making process. An advantage of AIS is that this should not happen, yet CNIS operators reported witnessing this taking place. In the reported example, the AIS symbology and information from a car carrier, presented on the CNIS radar screen, was said to have attached itself to another vessel of a different type, while also continuing to be displayed in association with the car carrier.

A further possible source of confusion was identified by the CNIS operators. At installation the co-ordinates of the aerials are entered into the system in relation to the GPS unit. Although password protected, it is possible for authorised personnel with access to the password to change these settings. By changing the offsets it is possible to create the effect of locating the displayed ship AIS symbology at a distance from the ship itself. Such cases had been observed by the CNIS operators; in one instance the symbology was a distance of 2 miles from the ship. The effect of such an offset could lead an observer to believe that another vessel is present but not detected by radar. Such an effect could be particularly problematic in poor weather conditions.

These findings from the first part of the research demonstrate that clearly there are problems associated with the data transmitted by AIS. The second part of the research consisted of monitoring the VHF radio to ascertain the frequency of inter-ship calling.

The Maritime and Coastguard Agency (MCA) marine guidance notice *Dangers in the use of VHF Radio in Collision Avoidance*[14] highlights the fact that in a significant number of collisions 'at some stage before impact, one or both parties were using VHF radio in an attempt to avoid collision'. The MCA argues that this activity may prove to be dangerous and could lead to the collision it was intended to prevent. The conclusion drawn is that the use of VHF for negotiating collision avoidance should, in

general, be avoided. In this context a number of key issues are identified, namely: uncertainty over identification, misunderstanding due to language, ambiguity in information conveyed, the delaying of the decision making process and the possibility of the negotiation of actions contrary to the international collision regulations.

The operative principle of AIS is the automatic transmission of information, including ship name and call sign. Access to such information may serve to aid identification and thereby facilitate an increase in the use of VHF for collision avoidance contrary to MCA guidance. Thus calls were recorded and then analysed to determine whether and how the presence of AIS was influencing the use of VHF in relation to collision avoidance.

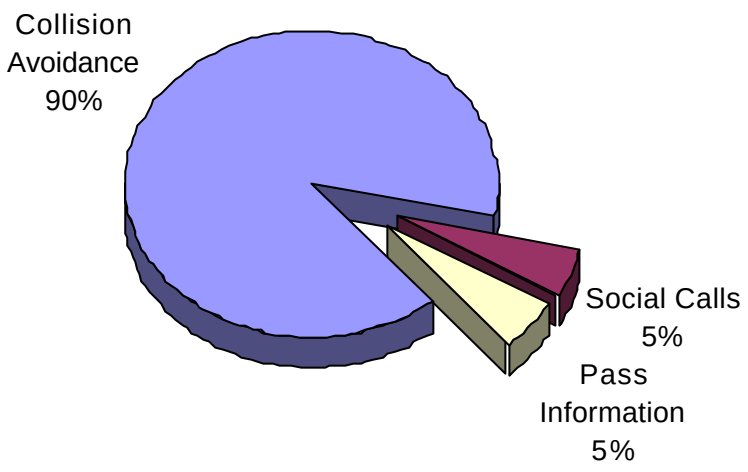
Findings 2: VHF and AIS

The VHF radio channel 16 was monitored continually for 7 days and inter-ship conversations followed to working channels.[15] The coverage area was determined by the range of the VHF antennae and coincided, more or less, with the whole of the 'VTS area', including both traffic lanes, demarcated in Figure 1.[16] Within the period we estimate that there were approximately 2872 vessel movements in the Straits. We have arrived at this estimate as follows. 806 vessels were recorded by Dover proceeding through the SW lanes departing the Southern North Sea[17]. We have assumed that similar numbers of vessels were proceeding in a North East direction entering the Southern North Sea, giving us a figure of 1612 vessels transiting the Dover Straits during the week of the study. In addition we need to include ferry movements which are not recorded by Dover. There are approximately 90 return sailings a day from Dover or 1260 vessel movements a week. Through simple addition, therefore, we arrive at an approximation of 2872 vessel movements in the Straits during the week of the study.[18]

During the same week long period, 329 instances of inter-ship VHF calls were recorded and the purpose of the call noted where possible. On a quarter of occasions (84 cases) the purpose was not determined. The reason for this varied, but included such factors as: no response to the initial call, that the follow-up conversation was not heard, and that the speakers changed to a language not understood by the researchers.

However, in 245 cases it was possible to determine the nature of the call and the overwhelming majority (89.4% or 219 calls) were concerned with collision avoidance. Of those that remain, 13 (5.3%) were social, e.g. to talk to friends, and 13 (5.3%) to pass information, e.g. that an anchor appeared not to be adequately secured (Figure 3). Interestingly, the distribution for the different types of calls did not change significantly between the hours of daylight and darkness.

Figure 3. Reasons for VHF calls



The very fact that 11.5% of all ships in the survey initiated inter-ship calls is in itself extremely significant. When the 272 ships that responded to being called are also taken into account, it can be seen that on 601 occasions a vessel operating within the Dover Straits, during the week of the study, participated in an inter-ship VHF call. Traditionally, when a vessel needed to contact another they would usually call by giving the position of the vessel either in geographic terms or by reference to a landmark or to themselves. Such calls would typically take the following form, as demonstrated in this example recorded during the research period.

> North East bound vessel, North East bound vessel, your approximate coordinates are fifty one degrees thirty eight minutes north, longitude zero zero one degrees, forty seven minutes east; I repeat, zero zero one degrees, forty seven minutes east; approximately steering zero four five degrees; speed fifteen knots. This is the vessel on your port bow, distance three point four miles. Do you copy? Over.

This is clearly a long and laborious process, especially as a vessel may well have to repeat this information several times before getting a response. By contrast, being able to positively identify another vessel by name is clearly much easier and more succinct, for example:

Gloria Estefan, Gloria Estefan, this is the Bruce Springsteen. Do you copy?

The instances where one ship would call another by name were previously limited to those situations where they were close enough to visually read the name of the other, or where they were calling a known ship. With the advent of AIS 'name information' is readily available to the ship's officer. As such, the ability to identify and call other vessels by VHF is made more precise and easier. During the research period, it was found that the majority of those vessels using VHF for inter-ship communication were using *vessel name* as the primary means of identification. Of the 329 recorded cases of inter-ship calling, in 4 cases the initial form of identification used to establish contact was not heard. However, of the 325 determinate cases recorded, in the majority of occasions (88.3%) the calling vessel identified the other by name. This activity was equally taking place during hours of darkness - at such times it would not, in general, be possible to read another ship's name, and so it is safe to conclude that ships were deriving this information from AIS. Ships' officers thus appear to be utilising the AIS information to identify ships in their vicinity to call up.[19]

Analysis of Conversations

Analysis of the conversational exchanges between ships was carried out, and some key points emerged in relation to the way in which AIS is actually utilised in collision avoidance situations.

Of the 329 vessels that made inter-ship calls, 272 (83.4%) successfully established contact, while 54 (16.4%) were unsuccessful. Of the 285 calls using vessel name as the identifier, 242 (86%) successfully made contact, while 43 received no response. By contrast, of the 44 vessels that did not use name as the identifier, 30 (68%) successfully established contact. Of all the vessels that called and successfully made

contact, 203 (62.8%) subsequently moved to a working channel, but 67 (20.7%) conducted the entire exchange on channel 16.

As we have seen, access to name information facilitates initial radio contact and reduces the risk of confusion. Such risk is not totally eliminated, however. Six instances were recorded where participants realised, during the course of the conversation, that there had been a misidentification. In each case, initial contact had been made on the basis of name, as the following example illustrates:

> Ship p: MV 'p' I am on your port side, I alter my course to port to go red to red.
> Ship q: I am going to traffic separation.
> Ship p: I understand I alter my course. Ok I think I got the wrong ship are you four miles?
> Ship q: What is your position?
>
> (#241)

What is not known of course is whether there were other cases of misidentification which were not so obviously recognised by the participants. It should also be noted that in many cases researchers could not identify vessels on the basis of the name, as pronounced, even with the benefit of electronic replay and the assistance of experienced CNIS operators.

From the analysis of actual conversations it is clear that much can be learned in terms of how VHF is actually being used and the role that AIS is having in collision avoidance negotiations. Conversations fell into three broad categories. Those made to:

a. request information
b. alert another vessel to a developing situation
c. negotiate a collision avoidance decision

Frequently, where conversations took the initial form of (a) or (b) above, they would develop into (c) a negotiation.

Benefiting from the system?

Knowledge of the destination and draught of nearby vessels may aid the bridge officer in making navigational decisions. For example, consider the following scenario: two ships 'x' and 'y' are proceeding along a traffic lane in close proximity to each other

and ship x is approaching a course alteration point. If ship y is going to the same place as ship x, it will also be altering course, but if not it will continue on its present heading. In such a situation it may well benefit ship x to know where ship y is going in order to determine how best to position itself for the course alteration.

Further scenarios can equally be envisaged involving vessels approaching course alteration points within traffic routes, and between vessels following traffic separation lanes and those externally approaching the lane - where it is unclear as to whether they intended to join or cross the lane. In each case access to destination information could benefit the navigational decision.

Although draught information is less immediately connected to how a vessel will act it is possible to construct scenarios in which draught information could equally aid decision making. For example, consider two or more vessel approaching a junction in a traffic scheme where the lane divides providing the option to follow a deep water route. In such a situation awareness of a vessel's draught, particularly when combined with knowledge of ship type and destination could usefully serve as a guide as to whether a vessel is liable to use a particular route.

With AIS this information is easily and readily available to the navigator directly from their onboard system. Nonetheless the research found that in exactly the scenarios described, navigators continued to use VHF to request such information, as demonstrated in the following recorded exchange:

> Ship x: Where is your destination?
> Ship y: we are going to Rotterdam, we will alter course in a few minutes.
> Ship x: Roger, we will pass on your port side.
>
> (# 272)

Similarly,

> Ship p: What is your destination?
> Ship q: Wandelaar Pilot Station.
> Ship p: OK I couldn't see if you will go up north, I will overtake you to port.
>
> (#201)

Likewise, requests for routeing information related to draught were also recorded, as the following two examples show:

Example 1: Will you use the deep water route? (#100)

Example 2: Are you intending to take the deep water route? (#108)

In each of these cases knowledge of another vessel's destination and / or draught can serve to aid the decision process. Clearly, then, the availability of this data should benefit the navigator and lead to a reduction in the need for VHF calling, but it is not yet happening. The information is available from AIS, but in practice it is frequently obtained by VHF.

Related Issues

What was clear from listening to conversations between ships' personnel and observing vessels on radar was that a large percentage of the discussions that took place, within the time frame of the data collection, were unnecessary, confusing, or resulted in action contrary to the collision regulations.

Unnecessary Communication

Unnecessary communication often related to plans that simply involved action in accordance with the collision regulations and behaviour that could be described as standard navigational practice, for example:

Ship a: I hope this is important.
Ship b: Yes, I will overtake you on port side.
Ship a: You can overtake me on whatever side. I am doing 2 knots you are doing 7.
Ship b: Thank you for your cooperation.
(#299)

In this instance it can be seen that the conversation was unnecessary in terms of the application of the collision regulations. Though not always as clear cut, it was possible to determine from the combination of radar observation and VHF conversation many more instances where the ensuing discussions were unnecessary when viewed against the requirements of the collision regulations.

Confusing Communication

Numerous instances of conversation were recorded where it was unclear what action had been agreed. The following example was typical of such exchanges:

Ship x: I have slowed down and will pass you green to green.
Ship y: Yes of course green to green.
Ship x: No! I slowed down to allow you to cross ahead.

In this short exchange it can be seen that there was confusion between the participants. In the initial exchange a course of action appears to have been agreed, however, this is then negated when it becomes apparent that there was uncertainty as to the intended manoeuvre. Numerous instances such as this were recorded where it was unclear to the parties involved what action had actually been agreed. In such cases it was not uncommon for a ship to call up again several minutes later to try and clarify what had been said previously; typically, because the anticipated action had not taken place.

Rule Breaking

Rule breaking often followed from VHF negotiations. For example the following agreement to take action contrary to the collision regulations was made between two ships:

Ship p: What is your intention?
Ship q: I will keep my course.
Ship p: Shall we pass green to green?
Ship q: That's not normal, but I will do it this time.
Ship p: Thank you for your cooperation

(#194)

In this example ship 'p' is the give-way vessel, but negotiates that ship 'q' alter course to port. As stated by ship 'q', this is contrary to *normal* behaviour. The action agreed upon contravenes rule 15 *Crossing situation* of the collision regulations. MGN 167 states that such behaviour is to be avoided as it may 'lead to the collision it was intended to prevent'. Rule breaking is particularly significant not only because vessels are acting contrary to international regulation, but also, in so doing, they introduce a degree of uncertainty into the wider navigational frame. Officers on the bridges of nearby vessels base their assessment of any navigational situation on their understanding that vessels will behave in prescribed and anticipated ways. Where ships start to negotiate action contrary to the rules it becomes increasingly difficult for surrounding ships to plan ahead. The effect of such action is to undermine situational awareness rather than improve it as intended. These findings highlight a range of

issues pertinent to the use of AIS in the context of decision making and collision avoidance. Discussion of the implications of both sets of findings will be presented in the following section.

Discussion

The explicit purpose of AIS is to contribute to improved situational awareness for shore-side authorities and ships' officers. The data presented here raises questions as to whether the system is currently meeting that aim. The fact that there are ships transmitting incorrect data brings into question the levels of confidence that can be placed in the information received by both those ashore and those on board ship. From a shore-side perspective it is important to know who is operating in the authority's waters for both purposes of security, traffic management and emergency response. However, our finding that identification information can be incorrect highlights the fact that such information may be transmitted in error or equally to deceive. A discussion of deception and security is beyond the scope of this paper, but it is clear that there are serious issues to be addressed. What is more immediately of concern is whether ships' officers are changing information and, if so, to what extent are they knowledgeable about what they are doing. Although not a formal part of the study it was apparent when in the operations room at Dover CNIS that operators would often report to ships that they were transmitting erroneous information, but in several cases individuals onboard clearly had no idea what to do about it. In one case an individual denied that they even had an AIS unit onboard. Similar cases are reported as having been experienced by VTS (Vessel Traffic Services) operators in Singapore.[20]

We have seen how different forms of information may be erroneous and how each may impact upon navigational decisions. For instance, wrong installation type data, such as an incorrectly spelled 'name' may cause confusion should a vessel need to contact another. Erroneous voyage data such as 'destination' could lead a vessel wrongly to anticipate a manoeuvre by another in close proximity, say one being overtaken or running alongside, while the appearance of incorrect navigational data, such as course /speed vector introduces a serious risk into the decision making frame.

This is particularly the case in heavily congested waters where the navigator places greater reliance on electronic aids.

Each of these instances of erroneous data serves to undermine the confidence that can be placed in the AIS system and hence its contribution to improved situational awareness. Insofar as access to a vessel's name makes it easier to use VHF to establish contact with other vessels, there is an increased risk that an indirect consequence of AIS will be increased VHF traffic and, specifically, increased negotiation of collision avoidance. Such behaviour runs contrary to current MCA advice. Indeed, MGN 167 explicitly states that even where vessels clearly identify each other there are still associated risks due to delayed decision making, possible confusion due to ambiguous or imprecise use of language and possible action that fails to comply with the collision regulations. We have demonstrated examples of each of these concerns being realised in practice. In addition, we have shown that even when a vessel is called by name there is still the possibility of misidentification.

Conclusion

The data presented here have raised serious issues concerning the use of AIS within the context of shipboard navigation. Of particular concern is the frequency with which erroneous information is transmitted and the impact of AIS on VHF use. To address these issues effectively, the root causes need to be identified. This will constitute a substantive future development of this study.

However, in terms of the future development of AIS, certain specific solutions may suggest themselves. For example, consideration may need to be given to the development of training, enhanced regulatory monitoring by, for example, Port State Control and the codifying of procedures. The latter can be understood in two ways. Firstly, in terms of data input, for example, by using three letter codes for ports, similar to those used by airports, to reduce input errors. Secondly, in terms of teaching a standardised form of conversational exchange dependent upon, for example, whether communication is concerned with obtaining information, alerting others to danger or producing a negotiated outcome.

International Ship and Port Facility Security (ISPS) audits and port state inspections offer the potential for monitoring AIS systems aboard ship. Such actions would serve to convey to ship's staff and managers the importance of having equipment that is correctly set-up and operated.

When considered in the round, however, what emerges from the range of issues identified is that there is a clear need for training that addresses more than just the operation and limitation of equipment. What is required is training that takes account of the broader activity of navigation and collision avoidance and the way in which available information is used. Electronic systems on ships' bridges are becoming increasingly integrated. Thus we suggest that those concerned with training and regulation need to see the introduction of new shipboard technology as more than just a technical development. Rather they need to recognise the potential of the system to modify shipboard practices - in this case navigation and decision making. As such training needs to be integrated; it should include not only an understanding of how to operate different items of equipment, but also, more broadly, their potential use in, and impact upon, decision making. That is, training needs to be developed that concerns itself with more than mere technical issues of button pressing: It is necessary to look beyond the box.

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[1] Although funded by Lloyd's Register Educational Trust the opinions expressed in this paper are those of the author and not Lloyd's Register.
[2] The Lloyd's Register Research Unit is additionally comprised of Dr Helen Sampson, Professor David Walters, and Mr Neil Ellis who as co-researcher participated fully in the data collection.
[3] For example, *Seatrade* (2004) Jan / Feb, p71
[4] Pelecanos, S. (2004) 'The Human Element in Pilotage', *Alert*, Issue 3 April, p6.
[5] Other uses for AIS have been advocated by different parties. For instance Sjofartsverket promoted AIS at the IMO as necessary for the operation of Archipelago VTMS. Likewise the possibility for owners to track their vessels via the internet has been expounded as a benefit. Thanks to J.Earthy for pointing out these references.
[6] The need to consider training is mentioned in MSC/Circ.1091, 6 June 2003.
[7] See for example, *Fairplay Solutions* (2003) February, 24-25; International Maritime Organization (IMO) (2001*) Interim Guidelines for the presentation and Display of AIS Target Information*. London: SN/Circ 217. 11th July2001; Transportation Research Board of the National Academies (2003) *Shipboard Automatic Identification System Displays: Meeting the Needs of Mariners*, Special Report 273, Washington DC.
[8] *Digital Ship* (2004) October, 21
[9] The contribution of AIS to navigation is becoming increasingly prominent, as demonstrated by a recent article in *Practical Boat Owner*, (June 2005, Issue No 462) a yachting magazine, which highlights the ready availability and benefits of AIS radar for small boat owners. See also Andrew Perry (2005) *Automatic Identification System (AIS) vs Radar*, The Journal of the Honourable Company of Master Mariners. Spring 2005, p.214-5. More importantly the International Maritime Organization (IMO) have recognised the potential of AIS for navigation and collision avoidance: see resolution A.917(22) as amended by A.956(23). For a recent update see MSC 80/3/7 (March 2005).
[10] I am grateful for advice from A. Ferguson of GCNS
[11] For example, *Seaways (*2004) April, 24-25
[12] It also includes crossing vessels and some of the vessels using the NE bound lane.
[13] Due to the varying workload of the operators the data collected probably represents a slight under recording of the actual instances of discrepancies.
[14] MGN 167 (M+F), January 2001
[15] However it was not always possible to not hear the content of conversation on working channels due to the range of the aerial in use.
[16] The area of coverage of the radio array at Dover CNIS coincides closely with the VTS Area identified.
[17] This figure was compared with the numbers for the month as a whole and found to be typical
[18] Thanks to D. Medgett, Dover CNIS operator, for information on ferry movements.
[19] There are no records of numbers of ships calling each other before the introduction of AIS for comparison with our data. A follow up study to this research is intended to determine whether AIS and VHF usage change over time as officers become more familiar with the equipment.
[20] Jackson (2004) *Seaways* (2004) April, p24

The Sexual Health of Cruise Ship Crews

Dr Michelle Thomas

Background

The cruise industry is one of the world's growth industries. Within the maritime industry cruise shipping has exceeded the growth of any other sector since the mid-1980's (Mather, 2003). In the period 1980-2001 the number of cruise ships in the world fleet increased from 147 to 372, a growth rate of 153%. When considered in terms of total gross tonnage (gt) the increase has been even more considerable, increasing from 2,045 000 (gt) to 8,939 000 (gt), representing a growth of 337% in this period. Passenger capacity has also increased considerably, from one and a half million in 1980 to 12 million in 2001, a growth of 700% (Mather , 2003).

Cruise shipping is a labour intensive industry. Ships are often crewed by several hundred seafarers, with ratios of crewmembers to passengers typically being in the region of 1:2 or 1:3 (Mather, 2003). The contemporary cruise industry is a globalised industry and this is reflected in the multi-national nature of ships' crews. Data from SIRC's cruise ship database showed seafarers of 99 different nationalities (Wu 2005). Although traditionally a male-dominated industry, the rapid expansion of the cruise sector of the shipping industry has created new employment opportunities for women seafarers, especially in the 'hotel' and catering departments. The SIRC database shows that in the year 2000 19% of the cruise labour force were women (Wu, 2005).

Cruise ship crews and health

Seafarers are a residential workforce and are in the unusual position of being largely dependent on their employers and workplace for providing health care. In contrast to ships in the cargo sector, cruise ships will typically sail with at least one qualified medical professional on board who will be available to both passengers and crew for consultation and treatment. Opportunities to utilise independent medical facilities ashore will vary according to an individual's position on board and the ship's schedule. In general, those working aboard cruise ships have more opportunities to go ashore than those working aboard cargo vessels as port stays of a reasonable duration

are an inherent feature of a cruise schedule. However factors such as long working hours, high work loads and decreased crew sizes may all serve to reduce opportunities for shore leave, as have increased port security restrictions and regulations brought about by the events of 'September 11' (ITF, 2003).

There is little available research on seafarers' health and safety and where this research does exist, the focus has tended to be on the cargo, rather than cruise sector of the industry (see Bloor et al., 2000). The research that has been conducted on cruise vessels has tended to focus on passengers rather than crews (see for example, Dahl, 2001; Peake et al., 1999). One aspect of health that may be of particular concern to those working on cruise vessels is sexual health and that associated with sexual behaviour (Belcher et al., 2003). As women have entered the workplace in increasing numbers and workplaces have become less segregated by gender, the issue of workplace (hetero)sexual relationships has began to receive increasing academic attention. Cruise ship seafarers are no different to other workgroups in that such relationships may occur. However there are some factors that may make seafarers more likely to engage in workplace sexual relationships than their shore based contemporaries. Seafarers working on cruise ships are removed from family and partners ashore for extended periods (often six months or more) and it is argued that people living by themselves are more likely to engage in casual sexual encounters than people living with a steady partner (Hendriks, 1991). Research also suggests that for women, working away from home overnight is associated with higher numbers of sexual partners (Wellings et al., 1994). Seafarers are also unusual in that their work necessitates that they share not just a workspace, but also living space with their co-workers. Such conditions may predispose towards workplace sexual relationships.

Couple relationships typically include physical intimacy, and for many, sexual intercourse is a central component of physical intimacy in this context. Sexual intercourse is an activity which is associated with pleasure, however it is also an activity that has an associated number of risks. Over the last two decades HIV has typically dominated public health agendas as the major risk associated with sexual relations. However other sexually transmitted infections (STIs) are also of considerable concern, and whilst usually treatable, are often asymptomatic. Left untreated these can result in serious health problems such as reduced fertility, and in

some cases even death. In addition, prior infection with STIs such as gonorrhoea and chancroid is known to increase the transmissibility of HIV. For women the occurrence of an unwanted pregnancy is a further risk associated with heterosexual sexual intercourse. Sexual intercourse may also carry social risks, such as the stigma associated with pre, or extra, marital sexual relationships or multiple sexual partners. Finally, and not inconsequentially, there are emotional risks associated with sexual relations, these relate to forms of sexual violence including coerced or forced sexual intercourse (rape) and sexual harassment.

This paper reports on the findings of a study concerned with the health and sexual health of men and women working on board cruise ships. It considers sexual behaviour in terms of private and commercial sexual partners and examines levels of condom use as a measure of sexual risk.

Methods

Data for this study was collected at two major cruise ports, Southampton, UK and Port Everglades, USA. Researchers were based at British & International Sailors Society (BISS) premises in Southampton and Casa del Marino, Port Everglades. These centres provide recreation and, in the case of BISS, hotel facilities for seafarers visiting the port; they are predominantly welfare organisations and attract seafarers of all denominations and none.

Eligibility for participation in the study was restricted to crew on cruise ships. Seafarers were given a short introductory leaflet on the Seafarers International Research Centre and the study. They were given an opportunity to read the leaflet and were asked if they were willing to answer a short, anonymous and confidential 20-minute interview schedule on the topic. Those who agreed to participate were then escorted from the public area of the premises to a private area where they were given a full information sheet. Those seafarers willing to participate were interviewed immediately, since they typically were not able to commit to return to the BISS/ Casa del Marino at an agreed later date. On the advice of one of the port chaplains at Casa del Marino, all seafarers who participated in the study were giving a $10 phonecard in recognition of their time and contribution to the study.

The interview schedule and procedure were based in part on the National Survey of Sexual Attitudes and Lifestyles (NATSAL) survey on this topic (Wellings et al., 1994), which was extensively piloted with particular attention being paid to interviewee acceptability. Additional questions were developed from an instrument successfully used to collect data on the sexual risk behaviour of international travellers (Bloor et al., 1998). Separate instruments were designed for male and female respondents, however the majority of questions were common to both instruments, with some additional gender-specific questions in each (for example women were asked about pregnancy and male respondents about commercial sexual relationships). All women were interviewed by a female researcher and male seafarers were interviewed by either a male or female researcher, as has been found to be acceptable in other studies of sexual behaviour (Bloor et al., 1997; Spencer et al., 1988). Interviewees were warned at the outset about the sensitive nature of the questions and reminded of their right to refuse to answer. English was anticipated to be the second language of the great majority of the interviewees, however English is the international language of the sea and facility in English would have been an employment requirement. Therefore it was considered unnecessary to translate the schedule or use 'native' interviewers. The interview schedules were piloted prior to beginning the main study, with particular attention paid to comprehension and the acceptability of questions.

Data collection took place between August 2002 and February 2003. The achieved sample was 192. The overall response rate for the study was 49%. A higher number of refusals were received at the Port Everglades than Southampton (response rates of 40% and 65% respectively). The response rate in Port Everglades may have reflected changes in the industry following 'September 11'. Significantly increased port security measures considerably detracted from the time crew had available to spend ashore, and consequently many had only 30 minutes or less before they had to return to their ship, making participation in the study problematic. Those seafarers using BISS were usually staying overnight prior to joining a vessel and therefore typically had more time at their disposal. Women were slightly more likely to agree to participate in the study compared to men, with response rates of 53% and 48% respectively. Where possible, the researchers recorded reasons for refusal and in the

majority of cases these related to having insufficient time to take part, or in the case of those staying at BISS, the need to rest after a long journey (many having just completed a long haul flight). No one gave the sensitive nature of the study as a reason for not taking part. Responses to individual questions were high and the design of the questionnaire included in-built checks for consistency of reporting (for example, on number of sexual partners and use of condoms and contraceptives). Consistency was found to be high.

Findings

Sample Characteristics

The sample was made up of 158 (82%) men and 34 (18%) women. These proportions reflect those of men and women aboard cruise vessels in the industry as a whole (Wu, 2005). Participants ranged in age from 20 to 61 years. The mean age of the sample was 33 years. Women were more likely than men to fall into the younger age range: 38% of women were aged between 20 and 25 years compared to just 17% of men. Just over half the sample (54%) were married at the time of the interview, and one third (33%) were single. A further 5% were co-habiting, 6% were separated or divorced and were 1% widowed. Women were more likely than men to be single, separated or divorced, and men were more likely than women to be married. The higher proportion of married men in the sample may reflect the difference in average age of male and female seafarers: women working onboard ship are on average younger than their male colleagues (Wu, 2005) and those in younger age groups are less likely to be married. Over half of the sample (59%) had children. Of these, thirty eight percent had one child only, 27% had 2 children and 35% had three or more children. The largest national groups in the sample were Filipinos and Indians, constituting, respectively, 31% and 20% of the total sample. Nine percent of the sample were from Honduras with a further 11% from other regions in Latin America. These figures differ slightly from those found in a larger scale survey of the industry which reported 29% of cruise seafarers from the Philippines, 5% from India, 5 % from Honduras (Wu, 2005).

Respondents were asked about their position on board during their current (or most recent[1]) trip. Unlike cargo vessels, cruise ships require high numbers of staff, and many positions demand no maritime experience or qualifications. The largest single occupational group within the sample were restaurant stewards comprising 17%, the second largest group were bar and restaurant waiters (12%) and the third largest, 'utility workers' (11%), cabin stewards comprised 10% of the total sample. Nine percent of those interviewed were in the marine department, 2% of the sample were Marine officers.

Sexual Behaviour

Data was collected on a range of sexual relationships including private[2] sexual relationships on board ship and in port; commercial sexual relationships in port and at home (men only[3]) and casual and regular sexual partners at home.

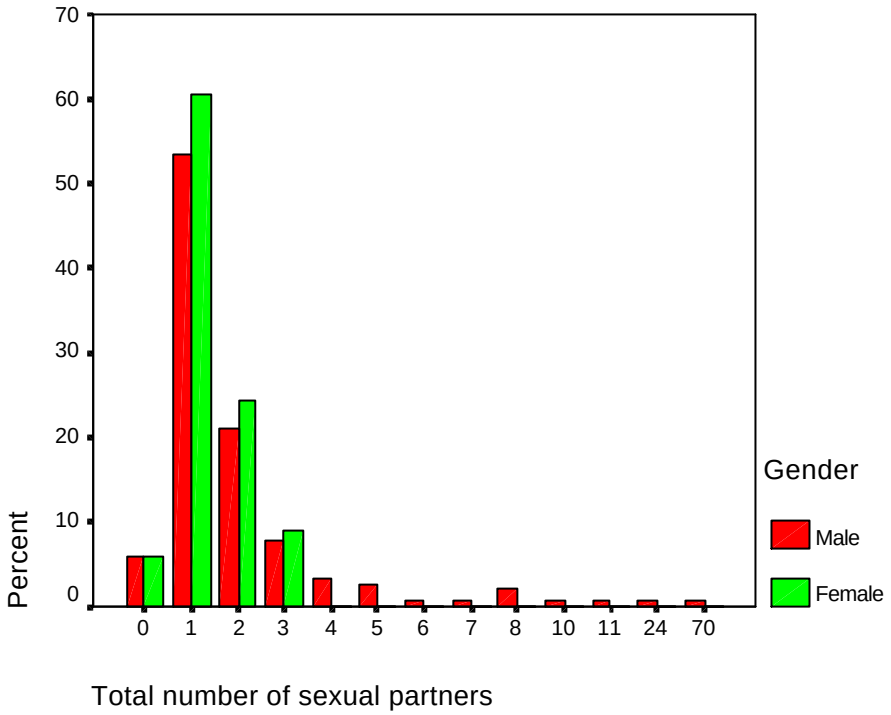
Total number of sexual partners

Respondents were asked about total number of partners in the last 12 months. This figure included casual and regular partners, both at home and onboard, and commercial partners (prostitutes) in the respondent's home country and in international ports. Number of sexual partners is an important way of measuring levels of sexual activity and potential exposure to STI's. The number of partners for seafarers in this sample over the previous one year period ranged between 0 and 70. The mean number of sexual partners in the last 12 months was 2.26 and the median number of sexual partners 1. Ten respondents (6%) had not had sexual intercourse with a partner in the last 12 months. Thirty nine percent of respondents had had 2 or more partners in the last 12 months.

The range in the number of sexual partners in the last 12 months was greater for men than for women, with men reporting between 0 and 70[4] partners (mean 2.45, median

[1] Seafarers interviewed at the point of joining a vessel to begin contract were asked about their experiences on their most recent trip. Those seafarers currently on a contract were asked about their experiences on their current trip.
[2] Private sexual relationships refer to non-commercial sexual relationships.
[3] Women were not asked about commercial sexual relationships as existing literature suggested that cases where women had paid for sex would be extremely rare.
[4] Seventy partners was an 'outlier' with most respondents reporting between one and three sexual partners in this time period.

1) and women reporting between 0 and 3 partners (mean 1.36, median 1). However this difference was not statistically significant.

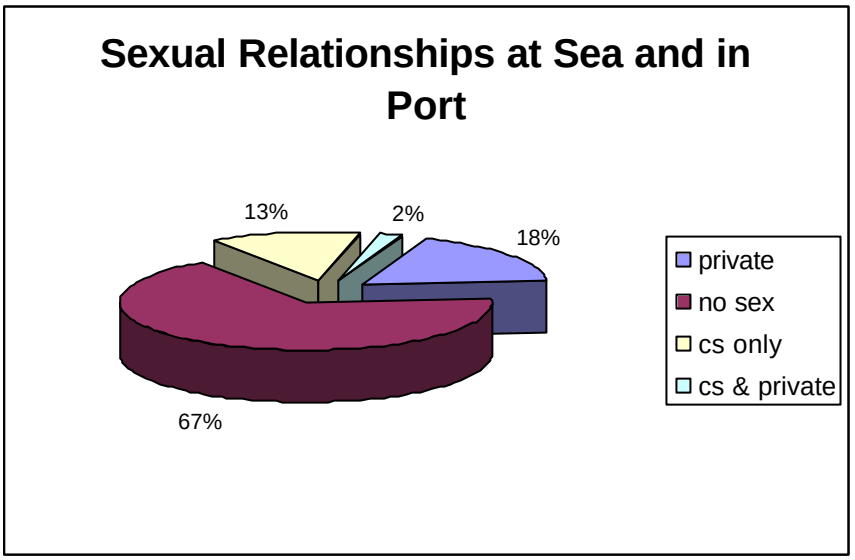


Just over three quarters (77%) of the sample had a regular sexual partner in their home country at the time of the interview. There was a statistically significant relationship between having a regular sexual partner at home and gender (X^2=16.747, df=1, p=<.01). Ninety six percent of men and seventy one percent of women reported having a regular sexual partner at home at the time of the interview.

Eighteen percent of respondents reported having had sexual intercourse with a casual partner in their home country in the last 2 years. Not surprisingly, those who were married were less likely to report a casual partner at home in the last two years: 14% of married and 27% of those who were unmarried reported having sex with a casual partner in their home country in the last two years.

Sexual relationships at sea and in port

One third of the sample (33%) reported having sexual intercourse during their current/ most recent trip. Of the total sample, 18% (34) had private sexual relationships only, 13% (24) had commercial sexual relationships only and 2% (3) had both private and commercial sexual relationships during their last trip**.**



Private sexual relationships

The number of sexual relationships during the current/ most recent trip ranged from 0 and 50[5]. Seventy nine percent of those who reported having a relationship on board the ship reported having one partner only, 14% reported having two partners during the trip and the remaining 7% reported three or more partners during the trip. Half the sample (50%) reported engaging in sexual intercourse 10 times or less with their most recent ship board partner. Women were more likely than men to report a private sexual relationship on their trip: 16% of men and 39% of women reported private sexual relationships on their trip and this difference was found to be statistically significant (X^2=9.003, df=1,p=<0.01). The private sexual relationships that occurred were predominately with other crew members. Fourteen percent of the private sexual relationships reported on board were with passengers.

Commercial sex

Documenting commercial sexual relationships is important for a number of reasons. Commercial sex workers (prostitutes) have been identified as important 'core groups' in understanding the spread of sexually transmitted diseases such as gonorrhoea (York et al., 1978) and more recently, HIV (Plummer et al., 1991). Relatedly, it has been suggested that travel workers may also play a crucial role in epidemic spread, by providing a 'bridge' between prostitute populations (Carswell et al, 1987). Male respondents were asked about commercial sexual relationships whilst working at sea in the last 2 years and over their last trip. Over one quarter (29%) of men in the sample reported having paid for sex during the last two years whilst working away on a ship. One fifth (20%) of men reported having paid for sex on their current/ most recent trip. Of those who had paid for sex during their most recent trip nearly one third (30%) had paid for sex on this trip once only, approximately one third (33%) twice and just over a third (37%) reported paying for sex three times or more. Respondents were asked about the last country they were in when they paid to have sex. A wide range of countries in varying world regions were reported including Spain, Israel and China. The most commonly reported country was Brazil reported by 18% of respondents, Columbia (reported by 10% of respondents) and Spain (10%). There was no statistically significant relationship between marital status, nationality, length of sea career and having commercial sex on current/ most recent trip.

Whilst reports of commercial sex whilst working at sea were high, only a very small number of seafarers reported paying for sex whilst in their home country (4%).

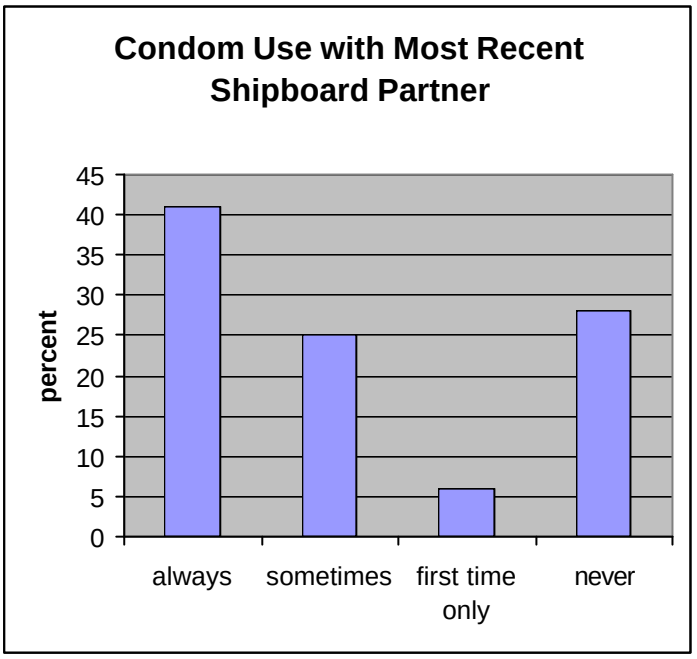
Sexual risk

Private sexual relationships

Less than half (41%) of those who reported private sexual relationships during their trip reported using condoms every time they had sexual intercourse with their most recent partner on the trip, 25% reported using condoms on some occasions, 6% reported using condoms the first time only, and over one quarter (28%) reported never using condoms with this partner. There was no statistically significant relationship

[5] Fifty was an 'outlier'. Others who reported private sexual relationships on their trip reported between 1 and 4 partners.

between condom use and age, marital status or nationality. There was some evidence of a relationship between gender and condom use, men were more likely than women to report always using condoms (55% and 16% respectively) although this relationship was not statistically significant (X^2=5.058, df=2, p=.08). There was no statistically significant relationship between women bringing the contraceptive pill on board ship and whether or not they used condoms.



Commercial sexual relationships

All those who reported having paid for sex whilst working away in the last 2 years reported using a condom the last time they paid for sex, as did those who reported paying for sex in their home country.

Condom use and regular sexual partners at home

Those respondents with a current regular sexual partner at home were asked about condom use with this partner. Reported levels of condom use within these relationships was low: only 10% reported always using a condom when they had sexual intercourse with this partner, 28% reporting using condoms only sometimes and 62% never used condoms with this partner.

Forty five percent of those with a current regular partner reported using condoms on all the occasions they had sexual intercourse with a new partner met on the ship compared 60% of those who had no current regular sexual partner[6].

Discussion

The data from this study show that seafarers working on cruise ships are a sexually active group with a relatively high number of sexual partners. Thirty nine percent of seafarers in this sample reported having two or more sexual partners in the last 12 months. Comparative international data is not available, however these figures are notably higher than those reported by men and women (aged between 16 and 59 years) in the UK NATSAL study, where 6.8% of women and 13.8% of men reported two or more partners in the last twelve months (Wellings et al., 1994).

The levels of reported commercial sexual activity are also high compared to reports by the general population. EC data on (heterosexual) males between 18 and 45 years show reports of having paid for sex in the last year to be at 0.6% for UK, 4.6% West Germany, 2.8% for the Netherlands, 1.8% for Norway and 11.0% for Spain (Leridon et al, 1998). Indeed, respondents were much more likely to report having paid for sex whilst working at sea than during their time ashore in their home country. Whilst reports of commercial sexual activity were high, so too were reports of condom use. Indeed ALL seafarers reporting sexual intercourse during their last trip reported using condoms on the occasions they paid for sex. This suggests that sexual health education efforts with this group regarding the risks associated with commercial sex have been effective[7]. However, given the wide extent of commercial sexual activity and the relatively high turnover of cruise ship staff, it is vital that these efforts are continued.

These data suggested that sexual relationships do occur between crewmembers, and in a small number of cases, between crewmembers and passengers. It is well

[6] Cell sizes were too small to test for statistical significance.
[7] An alternative explanation is that prostitutes visited by seafarers have received effective health education and are sufficiently empowered to insist on condom use with all their clients.

documented that people are more likely to use condoms in relationships that they consider to be 'casual' as opposed to 'regular' and 'romantic'. Therefore, it is perhaps not surprising that levels of condom use reported with private sexual partners on cruise ships were low: less than half of those who reported private sexual relationships on their trip reported using condoms on all the occasions when they had sexual intercourse with their most recent partner. Women were less likely to report always using condoms than men. These private sexual relationships are not without risk to the individuals involved. Seafarers may be putting themselves at risk of STI's as well as at risk of unwanted pregnancy. Furthermore, these potential exposures have subsequent risks for sexual partners at home: a high proportion of seafarers reported regular sexual partners at home with whom they did not use condoms, thus STI's contracted onboard and left undetected or treated may have a route to pass to shore-based partners.

Many of the risks associated with sexual intercourse are not immutable. The risk of contracting sexually transmitted infections can be significantly reduced by the use of condoms and unwanted pregnancies can be avoided by the use of effective contraceptives. The consequences of health risks associated sexual intercourse will also be affected by access to medical care and advice. Professional medical assistance may be required for screening and diagnosis of STI's and pregnancy and may also be necessary for the dispensing of certain contraceptives such as the contraceptive pill, the diaphragm/cap and IUD (Intrauterine Device)/coil. Restricted access to such care, whether through cost, logistic issues, concerns relating to confidentiality, or perceived skills of the medical professional, will all serve to potential amplify the consequences of sexual risk.

Concurrent relationships and social and sexual mixing (including age, ethnicity and location) have been identified as important in understanding the transmission dynamics of STIs (Morris and Kretzchmar, 1997). Given the reported high levels of sexual activity within, often multi-national crews, and the fact that many cruise seafarers are involved in long-term relationships with shore-based partners, non-treatment of an STI may have significant implications for disease spread. It is important that cruise companies take steps to reduce sexual risk behaviour. Current efforts regarding educating about the risks associated with commercial sex should be

continued. Pre-embarkation and on board health education campaigns should draw attention to the potential risks associated with private sexual relationships that occur on board and advocate the use of condoms in such relationships. Condoms should be made available to both male and female seafarers in discreet locations on board. Contraceptives should also be made available through the ship's doctor. These steps that have relatively low cost to employers would have important benefits not only to the health of seafarers, but also their partners ashore.

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