



## The International Maritime Human Element Bulletin

Issue No. 12 July 2006

ISSN 1747-5015

# Alert!

## It makes sense...

The 2005 RINA - Lloyd's Register Ship Safety Award (Industry Category) has been presented jointly to The Nautical Institute and Lloyd's Register for our "work in promoting awareness and interest in the management of the human issues in all areas of the maritime industry, through the publication of the bulletin **Alert!**"

This issue of **Alert!** brings to an end the first phase of our campaign to improve the awareness of Human Element issues as they apply to the commercial maritime industry.

Our website statistics show that, so far: the number of visitor countries is 131, the top 10 of which are: the United Kingdom, the USA, Canada, Sweden, India, Greece, China, Australia, Germany and the United Arab Emirates; 40,573 copies of electronic versions of Issues 1 to 11 of **Alert!** and 6,034 centrespread diagrams have been downloaded; and a further 29,570 files have been downloaded from the database.

These statistics, together with a distribution of some 55,000 printed versions of each Bulletin, demonstrate that we have achieved a worldwide readership and that the documents held in the database are sufficient to attract the interest of maritime professionals across the industry. Indeed, both the Bulletin and the website have developed into powerful tools for promoting the importance of the Human Element in shipping.

The **Alert!** Project will be taking a short break, although the website will continue to provide access to all 12 issues of the Bulletin and to the centrespread diagrams. And, the database will be available to those who wish to upload relevant material, and will continue to serve as a reference resource for study and information.

The Editor  
**Alert!**  
The Nautical Institute  
202 Lambeth Road  
London SE1 7LQ  
United Kingdom

editor@he-alert.org

It makes sense that a ship should be designed and built with the user and the operational task in mind, taking into account the environmental conditions that it is likely to encounter during its working life.

It makes sense that experienced crew should stand by during the build to ensure that the ship and its systems are ultimately 'fit for purpose', and that the crew should be familiar with their ship well before it leaves the builder's yard.

It makes sense that the ship should be sufficiently manned to ensure its safe operation.

It makes sense for crew members to be competent to operate the ship and its systems, in accordance with the requirements of international conventions and industry guidelines.

It makes sense for those who are involved in the design, build, regulation and management of ships and their systems, to have an understanding of the 'ways of the sea'.

It makes sense to ensure that handbooks and operating instructions take into account the different nationalities, languages and cultures of seafarers; and that they are set out in a clear and simple manner, are not technically complicated and are easily understood.

It makes sense that seafarers are

able to communicate effectively in the execution of their duties; and that their knowledge of the English language is sufficient to be able to communicate safety messages both internally and externally, and during normal and abnormal situations.

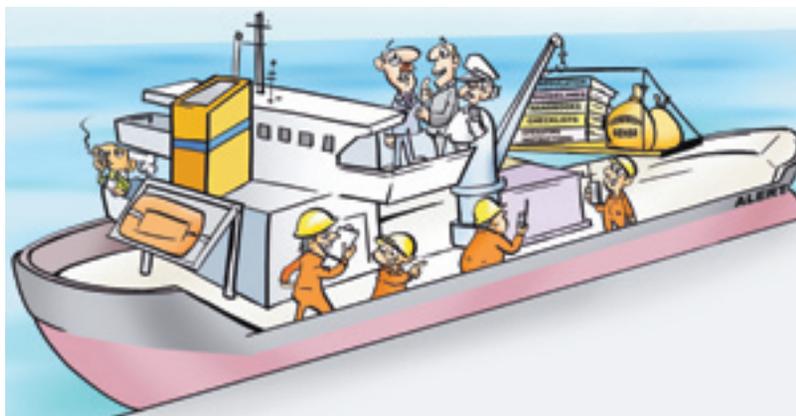
It makes sense to invest in quality not only through compliance with international conventions but also through self-regulation and voluntary commitment to industry standards and codes of practice.

It makes sense to invest in people by encouraging the highest standards of education and training and a common spirit of professionalism in the industry; and by providing the seafarer with a safe, happy and healthy working and living environment, and fair terms of employment.

It makes sense to keep the Human Element under review throughout the lifecycle of any ship to take account of changes in its role, its operating pattern, system updates, improved technology and new regulation.

It makes sense for all responsible stakeholders to work together to ensure that ultimately the master and his crew have the right tools in place, and are properly trained, to ensure the safe conduct of the ship, and the safe and timely delivery of its cargo.

### ...It's Common Sense



*Keeping the right balance with bags of Common Sense*

## 2 Inside this issue:

Recognition of competence in addressing the human element	2
Negligent or incompetent?	2
A welfare service for seafarers	3
Towards safer ship operations	3
A human element voyage	4/5
The Maritime Labour Convention 2006	6
What's new...	6
The Human Element in the work of the IMO	7
Accident investigation reports	8
Reports and Studies	8

# Alert!

The International Maritime Human Element Bulletin

Editor: David Squire, FNI

Published by the Nautical Institute, the world's leading international professional body for qualified mariners

[www.nautinst.org](http://www.nautinst.org)

Membership info: [sec@nautinst.org](mailto:sec@nautinst.org)

The opinions expressed herein are those of the editor or contributors and do not necessarily represent the views of The Nautical Institute or Lloyd's Register EMEA.

The Nautical Institute and Lloyd's Register EMEA, their affiliates and subsidiaries and their respective officers, employees or agents are, individually and collectively, referred to as 'The Nautical Institute and Lloyd's Register EMEA'. The Nautical Institute and Lloyd's Register EMEA assume no responsibility and shall not be liable to any person for any loss, damage or expense caused by reliance on the information or advice in this Bulletin or howsoever provided, unless that person has signed a contract with an entity from The Nautical Institute and Lloyd's Register EMEA for the provision of this information or advice and in that case any responsibility or liability is exclusively on the terms and conditions set out in that contract.

Design & artwork production by:  
Jacamar (UK) Ltd +44 (0)23 92410108

Printing by: Indigo Press +44 (0)23 8023 1196

Web site by: Informatic +44 (0)1243 555 108

Cartoons by: NewsLink Services  
(India Office) +91-9811649064

# Recognition of competence in addressing the human element

Ed Hansom

The Institute of Marine Engineering, Science and Technology (IMarEST)

In many parts of the world recognition of competence is a necessary professional requirement for employment, career development and, unfortunately, liability insurance. As interest in the Human Element grows, not least in response to the awareness raised by **Alert!**, there will be a need for recognition of competence in the skills related to the science and practice related to addressing Human Element issues in the marine context.

Traditional professional bodies, such as the Ergonomics Society and Psychological Societies, emphasise academic qualifications as necessary entry requirements. For such bodies, technical experience that contributes to recognition is centred on the application of particular technical skills, rather than experience in a particular sector of industry. Sector experience, in this case experience in the marine sector, is not taken into account.

In any new area of application of the sciences and techniques related to the Human Element the individuals with the responsibility and interest to

address these issues will come from a range of backgrounds including, in the case of the marine industry, ship's officers, engineers, surveyors, designers, office staff, academics, etc. A coherent professional body of knowledge may or may not emerge, depending on the depth of the requirement and the novelty of the treatment of the Human Element in the sector. What is required in terms of professional recognition is a scheme that recognises a range of academic backgrounds and gives due regard to experience and achievement.

In response professional societies are starting to offer a broader range of routes to membership and also to recognise that, where an individual can demonstrate the required professional competence, experience and commitment, the absence of 'formal qualifications' need not be a barrier to higher categories of membership. With a suitably - constructed scheme, chartered status can be offered for all routes.

[www.imarest.org](http://www.imarest.org)

## Negligent or incompetent? A need for due diligence

James Trumble  
Pupil Barrister

A seafarer will be negligent when performing any task if he does not exercise the necessary skill to be reasonably expected from somebody of that rank when carrying out that task or duty. A seafarer will be incompetent if he does not possess that necessary skill. However, he will be negligent if he possesses the necessary skill but fails to carry it out.

The STCW Convention requires that all seafarers should be properly qualified for the position that they hold on board. Additionally, shipowners are now required, through the ISM Code, to define the responsibility, authority and level of competence required of each crew member.

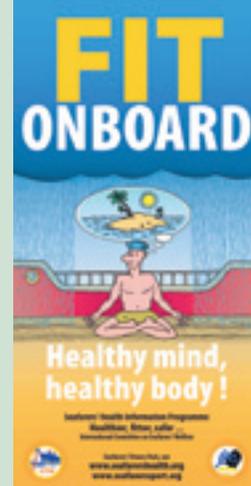
However, when considering what constitutes negligence, the courts will take into account 'industry standards'. It is vital therefore, that shipowners, operators and managers exercise due diligence in adopting these standards in respect of the recruitment and training of seafarers. Failure to do so could render the vessel unseaworthy by virtue of having an incompetent crew on board.

Most allegations of incompetence concern an inherent lack of ability or adequate training or instruction, in relation to the ship or its systems. Ships are becoming increasingly complex and owners need to adapt by implementing higher standards of seafarer training, or face the consequences.

Simply put, the shipowner's legal defence to a cargo claim and/or his hull cover can be prejudiced by the actions or inactions of his crew.

It is incumbent on the shipowners, therefore, to ensure that they comply with their legal obligations when it comes to the employment, training and certification of seafarers, and to make sure that they attain the 'standard' required of the 'reasonable' shipowner. This standard however is **not a fixed target** but has developed over time such that shipowners now have to exercise greater care than ever when it comes to keeping their seafarers trained and up to date with new developments.

James Trumble's paper - **The legal aspects of crews & crewing** - can be downloaded from: [www.he-alert.org/filemanager/root/site\\_assets/standalone\\_pdfs\\_0355-/HE00560.pdf](http://www.he-alert.org/filemanager/root/site_assets/standalone_pdfs_0355-/HE00560.pdf)



## A welfare service for seafarers

*Björn Löddén, Chairman  
International Committee on Seafarers' Welfare (ICSW)*



Over the years the Seafarer's life has changed dramatically, not least because shipping has become increasingly international. Today, different nationalities from all over the world have to work together; pressures relating to efficiency and fast turn around increase daily. The seafaring profession is one of the most challenging in the world, both physically and mentally, such that seafarers have to be 100% fit to fulfil their duties.

Seafarers need a sound and healthy lifestyle, on board and ashore to achieve and maintain the levels of fitness required to meet these physical and mental challenges. Land based workers take for granted (and often see as a fundamental human right) basic elements such as contact with family and friends, video and cinema, relaxed reading, news from home, shopping and recreational opportunities including sport and exercise. However, these opportunities are rarely available

to seafarers during their daily routine at sea, and pressures on turn around times in port make these opportunities increasingly difficult whilst alongside.

Arranging sport for seafarers represents an enormous challenge in the modern maritime environment, typified by internationalisation, minimum manning of ships, shorter turnarounds and multinational crews. The ICSW has met this challenge through a four year International Sport for Seafarers (ISS) development programme, which has seen sports activity for seafarers restored to the level achieved 20 years ago.

The Seafarers' Health Information Programme (SHIP) complements the sports programme by providing health information on 7 lifestyle related issues affecting the well being of seafarers, including *Food Safety, Safe Travel, Healthy Food, Malaria, Overweight, HIV/AIDS & STD* and *Fit Onboard*.

There is no doubt that sound welfare services are one of the key factors that will lead to safer shipping world-wide. If a crew on board ship does not have the right working and living conditions, there

is a very real possibility that the ship could be operated in an unsafe and potentially dangerous manner.

Despite major improvements in technology, maritime accidents and disasters continue to occur with monotonous regularity, leading to recognition of the need to care for the 'Human Element', a concept endorsed by the International Maritime Organisation. Whilst the need for profitable shipping is fully acknowledged, this profitability should not take its toll from the human beings on board.

Without a happy and fit crew, existing in decent working and living conditions, the shipping industry will be unable to meet its requirement for safer ships operating in clean waters.

[www.seafarerswelfare.org/ship-shop](http://www.seafarerswelfare.org/ship-shop)

[www.seafarerswelfare.org/ship-shop/fit-onboard/a5-booklet-fit-onboard-16pp-detail](http://www.seafarerswelfare.org/ship-shop/fit-onboard/a5-booklet-fit-onboard-16pp-detail)

## Towards safer ship operations and the economic viability of a company

*Captain Mohan Sivasudram  
General Manager, Safety, Security, Quality & Environment*

The International Safety Management (ISM) guidelines were developed to provide a framework for the proper development, implementation and assessment of safety and pollution prevention management.

When ISM was rolled out, many companies produced large volumes of manuals, which clouded or failed to address key issues. They hoped to raise the safety culture through the use of lengthy procedures and checklists, which did not bode well with those who were supposed to use them. Some companies then changed their strategy by first soliciting feedback and participation from those using the manuals and then writing concise, user friendly procedures. Checklists which did not serve any purpose were removed; data flow was better managed through the intelligent use of information technology; and improved transparency between the vessel and the office removed the blame culture.

Ship vetting, the needs of the ISPS Code and reduced turn-around times in port presented an added administrative burden for ships' staff, particularly where numbers had remained the same or had

reduced, resulting in increased fatigue. Some ship managers have recognised this imbalance and have taken action to redress it by:

- Placing additional deck officers and/or ratings on board for vessels on short trading patterns or difficult routes or difficult cargo handling processes.
- Recruiting Administrative Assistants to manage the shipboard administration (a role previously undertaken by the Radio Officer).
- Providing shore assistance for maintenance routines and increased dry-dock budgeting.
- Reducing the duration of crew contracts.
- Increasing onboard recreational facilities.

Although this resulted in increased operating costs, there have also been huge indirect cost savings through a reduction in accidents and incidents.

With the shortage of properly qualified seafarers, the burden of providing

additional training is becoming more evident. Training is not about just providing what is available in the market or meeting regulatory requirements. Some companies are providing training to understand company systems and internal workings. These programs are internally developed using feedback from ships' staff and applying lessons learnt from incidents, coupled with management business objectives.

Almost all shipboard systems and operations are heavily dependent on human intervention and the human link will constantly remain a weak link in this equation. Therefore the human element needs to be continuously managed and improved. In the final analysis, continued learning processes, renewed strategies in managing human capital, and improvement of work practices will form the basis for safer ship operations and for the economic viability of a company.

# A Human Element Voyage

People are important

All signs and documents are in the right language for the crew

**Ahead 2 spaces**

Your newly-joined crew are not familiar with the ship

**Astern 3 spaces**

Class surveyor reports that the equipment is well-maintained

**Ahead 1 space**

Your engineers have insufficient knowledge of the main engine control system

**Astern 3 spaces**

Full Ahead

**Throw dice**

Half Ahead

**Throw dice**

The efficiency and reliability of the seafarer will be undermined if the ship itself has not been designed and built to purpose; or if he/she has not been provided with the appropriate training and with easy to understand procedures and operating instructions in order to cope with the ship systems; or if there is no monitoring programme in terms of appraisals, mentoring and regular health checks; or if he/she is not properly maintained through a healthy lifestyle

OOW distracted by paperwork / phone calls / searching for ships on AIS

**Astern 2 spaces**

Company sends safety notices to ship in hard copy

**Ahead 1 space**

Engine room fire extinguished - no loss of life. Thank goodness for the training!

**Ahead 2 spaces**

The human element is a critical feature of all aspects of ship or system design and operation

No crew feedback into specification and oversight of new build

**Astern 2 spaces**

The process of integrating the Human Element into a complex system such as a ship starts at conception. It is a dynamic process, which must be kept under review throughout the lifecycle of the ship

You are misreporting your hours worked

**Astern 3 spaces**

The crew are well fed, well treated and well paid

**Ahead 2 spaces**

The seafarer is susceptible to failure and breakdown if he/she is not protected by standards and codes, such as STCW, ISM and the ILO Conventions

Congratulations! Your ship has won an environmental award

**Ahead 1 space**

Full away on passage!

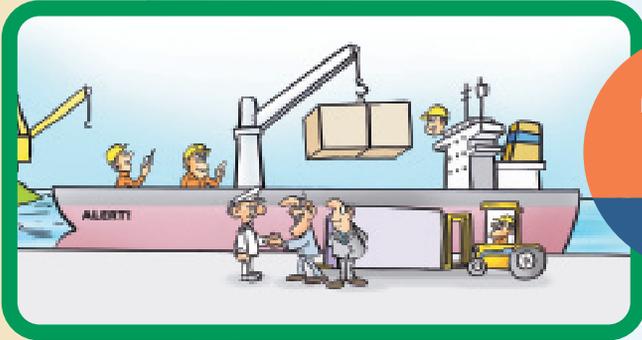
Competent people make the difference - they make the ship safe

**START - throw dice**



The education and training of designers, surveyors, trainers etc is important, not least knowing how to specify and deliver the human component of ship systems, and having an up to date knowledge of 'the ways of the sea'

Shipboard maintenance is the least-developed and weakest element in many of even the most well-intentioned companies



End of passage!

**You have arrived**

Company's corporate code of practice accepted as industry standard for CSR

**Ahead 1 space**

It makes sense... Common sense!

Near collision - not keeping a proper lookout

**Astern 3 spaces**

Half Ahead

**Throw dice**

If you don't get the ergonomics right, overall ship performance may be compromised

To regulate is to control by rule, or to adapt to requirements - whichever, it makes sense to comply!

The ship may prove to be effective and productive to the owner or operator, but how much more effective and productive would it be if it were also acceptable, safe and operable to the crew?

A quality company invests in its people, by providing them with a safe and secure working environment, decent living conditions and fair terms of employment, and by promoting a 'Company Culture', through communication and empowerment

Company makes funds available for non-slip coatings & edge-markings after report from safety committee

**Ahead 2 spaces**

The centrespread in **Issue 11 of Alert!** provides a framework for addressing the integration of the Human Element. For a little educational light relief, in this final educational light relief, in this final centrespread diagram, we invite you to play the 'Human Element voyage' boardgame, using a single dice - see if you can achieve the ultimate goal of ensuring the safe conduct of the ship and the safe and timely delivery of its cargo!

Mate falls asleep on watch due to affects of alcohol and fatigue

**Astern 2 spaces**

Dead slow ahead

**Throw dice**

Safety Management System reviewed: number of checklists halved

**Ahead 2 spaces**

P&I Inspector finds that the 3rd Engineer has a forged certificate

**Astern 2 spaces**

Your company has provided you with an extra officer to assist with administration

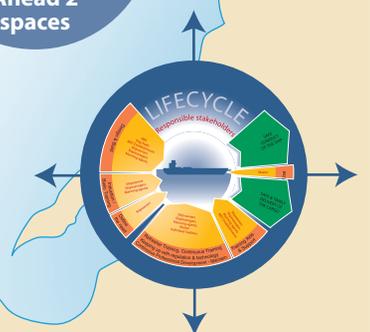
**Ahead 3 spaces**

Full Ahead

**Throw dice**

Crew complain about noise and heat in the cabins close to the engine room

**Astern 1 space**



# 6 The Maritime Labour Convention 2006



**Rear Admiral (MA) Jean-Marc Schindler**  
President, 94th International Labour Conference (Maritime Session)

At the creation of the International Labour Organization (ILO) in 1920, the maritime sector was one of the most advanced. Over the last twenty five years, globalisation, changes in ownership management and tremendous progress in social affairs for the land activities in many countries brought the maritime social sector to a very good example of deregulation.

Such a situation has created a double effect. The social partners, aware of the difficulties, decided to move towards a global and modern system and concluded in that aim the Geneva Agreement in 2001. The Governments on their own had to deal with such a variety of situations that the feeling of a need for global standardisation emerged.

It appears that there were clear grounds for a total review of the set of existing conventions. Accordingly a unique Maritime Labour Convention consolidating the 65 existing conventions

and recommendations into an integrated approach including the concept of decent work has been elaborated in a little more than four years on a tripartite process.

This 'Super Convention' establishes a solid set of principles and rights which are viewed by Seafarers' organisations as a Seafarer's Bill of Rights; it gives to parties a greater flexibility in the implementation of those principles and rights in order to facilitate ratification by States. In so doing, a large variety of situations worldwide may be accommodated - nevertheless ship owner's associations recognised that in so doing a level playing field is created.

The Convention contains strong provisions to make sure that the principles and rights are properly implemented and followed in a uniform manner; it provides a simplified amendment procedure which will enable the Convention to be updated easily according to the evolution of the sector; it has a no more favourable treatment clause, which makes the Convention applicable, by a Port State party to it and to all ships, even those of a Flag State which is not party to the Convention.

One key characteristic of the Convention is the revitalisation of the role of the States, such that the role of the Flag State is reinforced, and that of the Port State is widely extended. A new role is created for Labour supplying countries as well as countries in which seafarers are resident.

To facilitate the control of the application, a certification system is set up, by which each ship should have a Maritime Labour Certificate, delivered after an audit, thus ensuring that the Convention provisions are complied with.

At the end of the day, this Convention will be in the hands of the users, but whatever they will do, this new instrument certainly brings the protective system closer to seafarers, and gives a worldwide level of social conditions, the application of which will be improved.

Above all, it replaces the human being as the main actor of maritime activity and safety.

*Note: The Convention entered force in August 2013:*  
[www.ilo.org/global/standards/maritime-labour-convention/lang--en/index.htm](http://www.ilo.org/global/standards/maritime-labour-convention/lang--en/index.htm)

## What's new...

### **INTERTANKO and the Human Element**

The International Association of Independent Tanker Owners (INTERTANKO) Council has established a new group focusing on the human element in recognition of the crucial importance of this aspect to the tanker industry and to all aspects of the Association's technical and operational work. In addition to considering the attraction, training and retention of seafarers, this group inter alia will examine the interaction of the human element with aspects of ship design and operation, and the development of enhanced compliance cultures.

Further information can be found at:  
[www.intertanko.com/](http://www.intertanko.com/)

### **MAIB Annual Report**

The UK Marine Accident Investigation Branch has issued its Annual Report for 2005. In his foreword the Chief Inspector expresses his concern at the problem

of complacency onboard merchant vessels. He suggests that some officers ignore instructions, fail to apply basic professional principles and do not fully use their equipment to support them.

### **Seafarers' International Research Centre**

The Seafarers International Research Centre (SIRC) carries out a diverse and innovative programme of work relating to seafarers and to issues of welfare, health, and safety. Many of their research papers and articles are now available in PDF format from their website: [www.sirc.cf.ac.uk/](http://www.sirc.cf.ac.uk/)

### **The Fatigue Forum**

The Nautical Institute has set up an internet-based Fatigue Forum (<http://www.nautinst.org/en/forums/fatigue/index.cfm>). The purpose of the Forum is to allow seafarers to

express their concerns about fatigue issues, and to provide links to reports and resources concerning fatigue and its effects on the seafarer.

### **Crew Endurance Management Tools**

The US Coast Guard has made available two software tools:

**Self-Sustaining Workshop** - an interactive tool to enable trainers and operators to learn the basics of Crew Endurance Management (CEM).

Downloadable from: [www.uscg.mil/hq/cg5/cg5211/cems.asp](http://www.uscg.mil/hq/cg5/cg5211/cems.asp)

**Decision Support Software** - a CEM implementation tool that enables maritime operators to assess 15 Crew Endurance Risk Factors and subsequently develop crew endurance plans to address those areas needing improvement.

Downloadable from: [www.uscg.mil/hq/cg5/cg5211/cems.asp](http://www.uscg.mil/hq/cg5/cg5211/cems.asp)



# The Human Element in the work of the IMO

**Koji Sekimizu**  
Director, Maritime Safety Division  
International Maritime Organization



The lone figure standing atop the international memorial to seafarers outside the London headquarters of the International Maritime Organization (IMO) is symbolic of the importance that IMO attaches to the human element in shipping - the complex multi-dimensional issue that involves the entire spectrum of human activities performed by ships' crews, shore based management, regulatory bodies and others.

An analysis of 187 instances of groundings and collisions carried out by IMO's Sub-Committee on Flag State Implementation (FSI) indicates that, in 150 cases, or some 80 per cent, the human element was a contributory factor. Broadly equivalent results have emerged from similar analyses and fatigue has emerged as a significant factor in maritime accidents – along with others such as communication, competence, culture, experience, health, situational awareness, loneliness, isolation, stress and working conditions.

IMO has to date accomplished a significant amount of work in addressing the human element in shipping, at sea and ashore. In 1991, a Working Group was established on the role of the Human Element in Maritime Casualties and since then Assembly resolutions have set forth the *human element vision, principles and goals for the Organization* (resolution A.850(20) updated by A.947(23)) and requested the IMO Committees to focus their attention on "shifting emphasis onto people" (A.900(21)).

Key human element regulations include the STCW Convention – particularly the revision of the Convention in 1995 – and the ISM Code – mandatory for most ships since 2002. IMO has also developed *Guidelines for the Investigation of Human Factors in Marine Casualties and*

*Incidents*, included in the IMO Code for the Investigation of Marine Casualties and Incidents, and comprehensive *Guidance on fatigue mitigation and management* has been published.

There is also the STCW-F Convention for fishing vessel personnel, which unfortunately is not yet in force due to lack of sufficient ratifications - but this has not stopped IMO from holding a series of regional familiarization seminars around the world and developing a number of model courses for fishing vessel personnel, which are nearing completion.

Meanwhile, IMO's Maritime Safety Committee (MSC) agreed at its 81st session in May 2006 that a comprehensive review of the STCW Convention and STCW Code is needed, in order to ensure that the Convention meets the new challenges facing the shipping industry including, but not limited to, rapid technological advances today and in the future. The MSC instructed the Sub-Committee on Standards of Training and Watchkeeping (STW) to define, as a first step, the issues to be reviewed and advise the MSC accordingly, before embarking on the actual work. The target completion date is 2008.

In the light of analyses of accidents indicating that fatigue was a main contributing factor, a new work programme item on review of the principles for establishing the safe manning levels of ships has also been included in the work programme of the STW Sub-Committee.

IMO's Joint MSC/Marine Environment Protection Committee (MEPC) Working Group on Human Element continues to meet annually and MSC 81 approved MSC/MEPC circulars on: *checklist for*

*considering human element issues by IMO bodies; strengthening of human element input to the work of IMO; framework for IMO consideration of ergonomics and work environment; and the Organization's strategy to address the human element, which includes a related action plan.*

Amongst other items, the next session of the Joint Working Group on the Human Element, meeting during MSC 82 in November-December 2006, will analyse the report of a study into the impact and effectiveness of the ISM Code which was carried out by a Group of Independent Experts selected from administrations, organizations, academia and the shipping industry. Based on the data collected, the report concludes that where the ISM Code had been embraced as a positive step toward efficiency through a safety culture, tangible positive benefits were evident; and ISM Code compliance could be made easier through a reduction in the administrative process.

From the above, it can be seen that work on the human factor continues to evolve – while it remains at the heart of IMO's work. Effective implementation of the STCW Convention and the ISM Code through appropriate education and training will continue to have a significant impact on the quality of seafarers and the operational safety of ships. By focusing on the human element in general IMO is strengthening the link between management ashore and performance afloat to sustain a safety culture. The achievement of safer, more secure and efficient shipping on clean oceans will always be dependent on human factors.

*The various Conventions and Resolutions mentioned in this article can be downloaded from the IMO website: [www.imo.org/en/KnowledgeCentre/IndexofIMOResolutions/Pages/Default.aspx](http://www.imo.org/en/KnowledgeCentre/IndexofIMOResolutions/Pages/Default.aspx)*

## Loss of mode awareness leading to a near-grounding

This report from the Transport Accident Investigation Commission New Zealand features the investigation into how a 12,596gt passenger freight ferry failed to make a programmed course alteration while in automatic steering, during the approach to a narrow channel.

The report identifies a number of Human element related safety issues including: the adequacy of bridge resource management; the adequacy of training in the use of all integrated bridge systems; the adequacy of contingency planning for safety-critical situations on board; and the adequacy of procedures covering the dissemination of information from the International Maritime Organization.

The ship was being steered automatically on a pre-determined route by way of the Automatic Navigation and Track Steering (ANTS) system. The master was on the bridge, but the mate had the con. The ship did not make a planned automatic turn to port and recovery from the situation required swift intervention by the bridge team to initiate the turn manually and prevent the ship grounding. The report

concludes that the ARPA radar navigation system probably defaulted from the ANTS mode to autopilot mode without the change being noticed by the mate or master.

There were a number of reasons for the system to default to autopilot mode: it may have received an erroneous signal from an external input such as the DGPS due to aerial masking or incorrect differential signal reception; it may have received such conflicting information from the ground and water speeds of the Doppler log that the information was discarded as erroneous; or the parameters for the off-track jump limit were exceeded.

The ship was fitted with an Integrated Bridge System (IBS), which complied with international standards and IMO guidelines. The manufacturer ran courses on its IBS, and the original crew had received training in its use prior to the commissioning of the ship, some 6 years previously. But, training for the master and the mate in the operation of the IBS and of the ANTS consisted of 2 weeks'

'hands-on' familiarisation on board while the ship was in service, given by other officers experienced in the use of that equipment.

At the time of the incident, the shipowner did not have a dedicated person ashore dealing with training of sea staff in the use of the IBS, nor did it have any formalised policy to carry out this training to the standard recommended by IMO in MSC/Circular 1061 - *Guidance for the operational use of integrated bridge systems*. This Circular recommends that shipping companies establish a training programme for all officers with operational duties involving IBS.

The report also highlights: deficiencies in the ergonomics of the bridge design; poor situational awareness on the part of the mate; the risk of 'routinisation' of the passage occurring; and that neither the master nor the mate had ensured that a helmsman was standing by to take over the manual steering immediately as required by the local navigation bylaws.

The full report can be downloaded from: [www.maritimenz.govt.nz/Publications-and-forms/Accidents-and-investigations/Accident-reports/Aratere-043567-mnz-accident-report2004.pdf](http://www.maritimenz.govt.nz/Publications-and-forms/Accidents-and-investigations/Accident-reports/Aratere-043567-mnz-accident-report2004.pdf)

## Reports & Studies

### GUIDANCE ON THE DESIGN, PRESENTATION AND USE OF EMERGENCY AND ABNORMAL CHECKLISTS (CAP 676)

UK Civil Aviation Authority

Although directed at the aviation industry, this document provides guidance on the design, presentation and use of emergency and abnormal checklists. It addresses the application of good human factors principles in the design of a checklist. A Checklist Audit Tool (CHAT) has been developed to allow Stake holders to review checklists against these design principles.

Downloadable from: <http://publicapps.caa.co.uk/modalapplication.aspx?appid=11&mode=detail&id=158>

### MULTINATIONAL CREW; IN WORDS AND IN ACTION

Captain Shahrokh Khodayari  
Shipmaster

In a series of 5 very frank essays, Captain Khodayari offers his thoughts on dealing with some of the social and cultural issues that may occur with multinational and multicultural crews.

Downloadable from: [www.he-alert.org/filemanager/root/site\\_assets/standalone\\_pdfs\\_0355-/HE00530.pdf](http://www.he-alert.org/filemanager/root/site_assets/standalone_pdfs_0355-/HE00530.pdf)

### SAFETY AT SEA – APPLYING PARETO ANALYSIS

R Ziarati  
Turkish Maritime Education Foundation

This paper reports on a major European Union funded project instigating an integrated programme of education and training for merchant navy officers, using the application of Pareto analysis to identify the problems that offer the greatest potential for improvement.

Downloadable from: [www.he-alert.org/filemanager/root/site\\_assets/standalone\\_pdfs\\_0355-/HE00555.pdf](http://www.he-alert.org/filemanager/root/site_assets/standalone_pdfs_0355-/HE00555.pdf)

### IMPROVING THE DESIGN AND MANAGEMENT OF ALARM SYSTEMS

B Sherwood Jones, J V Earchy,  
Ed Fort, Duncan Gould  
Lloyd's Register

This paper describes current regulatory activity related to alarms and summarizes the issues currently facing the maritime sector and the seafaring operator. It examines sources of information for improving design and operation, and discusses the way ahead in the longer term.

Downloadable from: [www.he-alert.org/filemanager/root/site\\_assets/standalone\\_pdfs\\_0355-/HE00550.pdf](http://www.he-alert.org/filemanager/root/site_assets/standalone_pdfs_0355-/HE00550.pdf)

### HOW COMPLEX SYSTEMS FAIL

Richard I Cook, MD  
Cognitive technologies Laboratory,  
University of Chicago

A 'short treatise on the nature of failure, how failure is evaluated, and how failure is attributed to proximate cause.

Downloadable from: [www.he-alert.org/filemanager/root/site\\_assets/standalone\\_pdfs\\_0355-/HE00545.pdf](http://www.he-alert.org/filemanager/root/site_assets/standalone_pdfs_0355-/HE00545.pdf)

w: [www.he-alert.org](http://www.he-alert.org)  
e: [editor@he-alert.org](mailto:editor@he-alert.org)

This bulletin is distributed with the kind support of:  
Association of Maritime Education and Training Institutions in Asia Pacific; International Federation of Shipmasters' Associations; International Institute of Marine Surveying; Institute of Marine Engineering, Science and Technology; International Maritime Pilots' Association; Newslink; Royal Institute of Navigation; Royal Institution of Naval Architects