

The International Maritime Human Element Bulletin

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Alert!



Responsibilities come before skills. Each of the **Alert!** bulletins in this series is about defining the responsibilities of a particular stakeholder group with respect to addressing the Human Element. From these we intend to develop descriptions of the knowledge and skills necessary to discharge those responsibilities.

But, we would not be 'user-centred' if we did this on our own. Contributions from those who have already benefited from the right training and experience will be essential to ensure that we get it right. What we offer in the centrespreads will serve as a 'first draft', which we will ultimately develop through the **Alert!** website, with a view to providing a comprehensive human element skills framework for all the various stakeholders by the end of this series of bulletins. Feedback, therefore, is essential – and very welcome.

Through the **Alert!** bulletins and the website, we seek to represent the views of all sectors of the maritime industry on human element issues. Contributions for the Bulletin, letters to the editor and articles and papers for the website database are always welcome.

The Editor

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HSEQ – the essentials of an Integrated Management System

Throughout these three series of **Alert!** bulletins we have written a lot about *health, safety and wellbeing*, but not so much about *environment and quality* which, combined, make up the acronym of **HSEQ**, yet each of these can affect the safe operation of a ship and the safe and timely delivery of its cargo. Add to that the increasing problem of *security*, then we have the essentials of an Integrated Management System (IMS).

A successful IMS depends on addressing the human element. For any IMS to work effectively, you need to look at the organisation as a whole, together with the working and living environments of the people who work for the organisation, both ashore and afloat.

Regulation is required to ensure safer and secure shipping and cleaner oceans; and for the setting of common standards for ship and system design and build, for the education and training of the various stakeholders, and for operational procedures. The seafarer also needs to be protected through regulation that can provide him/her with a safe and secure working environment, decent working and living conditions, fair terms of employment and a healthy lifestyle. (Alert! Issue 10)

But, in the maritime context, it is not just about regulation, standards and operational procedures; it is as

much about nautical and engineering common sense. It is so easy to become obsessed with the detail of rules and regulations, of checklists and of statistical reports etc, that we can forget how easy it is to apply the norms of common sense, of professionalism and of good practice.

In order to maintain quality, prevent incidents or pollution, or keep ships and their crews secure, there is a need for effective systems and processes and for health, safety, security, quality and environmental awareness to be combined with good working practices. It is incumbent upon senior management to provide the resources necessary to safeguard the health, safety, security and wellbeing of all staff, both ashore and afloat, and to ensure that other people affected by the operation are aware that the company is fully complying with the appropriate health, safety, security and environmental legislation and regulations.

But these resources and procedures need to be easy to apply. This not only takes leadership and commitment from the top down; it is a continuing process of implementation, feedback, analysis and planning. Fundamental to the success of this cycle of improvement is the involvement of the User; taking a human-centred approach to HSEQ is the key to success.





Woven into the Fabric...

Captain Andrew Mitchell

More than 30 years ago as a bright-eyed Offshore Installation Manager on a North Sea Production Platform, what did I care about 'safety management'? Not a jot...! Sure we had helicopter safety briefings, bits of paper called 'permits' and I chaired safety meetings. One day we lost five people. Why? Following the enquiry I realised why. This 'safety thing' was an add-on to my operational life, almost a hindrance. It was not part of the way we did things and they had paid the price.

30 years later, having spent the majority of that as a safety management professional, I still see people at all levels of an organisation falling into the same trap. 'Safety' has not become woven into the fabric of their daily lives. It gets turned on at the safety meeting and when the auditor appears to ask the difficult question. When it does not get turned on, incidents occur.

So what turns it on? Is it the long sought after safety culture which the ISM

Code espouses, where commitment, competence, attitudes and motivation rule the day? I believe it is. Gaining the Document of Compliance is only the first step in the process; the demonstration that the company is in compliance with the legislation and has, through the safety management system, the tools in place to move forward to the next step.

Success in the improvement stage relies upon active involvement of the staff ashore and afloat, but most importantly the bridging of the ship/shore divide. It takes strong leadership, clear direction and the opportunity for crew members to contribute and not just blindly comply. If the procedures are not applicable, say so. If the permit to work is not workable, propose an amendment. A well thought out incentive scheme rewarding personal achievement and driving motivation is well placed at this stage.

Get this right and the company moves on to when the change in attitude becomes apparent. The procedures which in the

past were a hindrance now become the way of life. The permit changes from a piece of paper to a valid communication tool. The risk assessment is a chance to voice an opinion and the safety meeting an opportunity to raise a valid point. Individuals become members of a team with an identity. Having reached this point we can claim a level of success. But we have to nurture it or we will regress. The secret now becomes the drip feed of knowledge, the increased responsibilities, a word of praise when well earned.

Unfortunately our industry does not lend itself to such a process lightly. With the constant change out of crews and the movement of shore staff, the odds are stacked against the best intentions of developing a traditional safety culture. We can however influence individuals in the belief that over time the knowledge, the competence, positive attitude and motivation they have gained will result in safety management being woven in to the fabric of their daily lives ashore and on board.

The ISM Code: just an overrated tool?



Dr Syamantak Bhattacharya, University of Plymouth

The ISM Code offers a systems approach to facilitate the management of shipboard safety and pollution prevention. It lays down systems of work involving assessment and control of risk along with self-checking and self-critical measures for the purposes of verifying and improving its performance. However, its effectiveness has been the subject of much debate.

Previous studies based on Port State Control deficiencies and marine insurance claims and surveys using user perception failed to establish a clear causal relationship. Yet, everyone appears to believe that the Code can improve the industry's standards and to be keen to see it realised. The obvious question thus is: 'what is preventing the Code from reaching its potential?'

According to new research, the answer lies in our misinterpretation of the very purpose of the Code, which in reality is merely a set of tools to manage shipboard

risks. The purpose of the Code starts and ends with offering just that: a set of tools. Merely complying with a set of tools with a view to improving shipboard safety and pollution prevention is a considerable underestimation of all the determinants that support workplace risk management.

The application of ISM type management systems is common in other industries too and so is the debate on their effectiveness. In the land-based industries, academic studies have persistently shown that the effectiveness of such management systems requires a set of organisational prerequisites. In particular, it demands employee participation that contributes to the management of such systems. This is typically achieved when employees form into an organised workforce and develop a trust-based relationship with their managers. Effective trade union organisation and long-term or permanent employment are hallmarks of such organisations.

These prerequisites are neither easy to introduce nor do they offer an immediate solution to the problem. Even for the most open minded Managing Director it is difficult to explain the cost and benefit of implementing such changes to his/her Board of Directors and shareholders. For many in a traditional, hierarchical industry

like shipping, accepting seafarers as equal partners is also a strange proposition.

It is no wonder, then, that the ISM Code has not lived up to expectations and is almost doomed to remain a blunt tool. Ongoing efforts of 'experts' to sharpen it, by making it ever more detailed, are as misguided as they are naive. Excessive focus on controls and extensive 'tick box' audits are authoritarian obsessions that only make matters worse for the seafarers and force them to bypass the ISM requirements. Onboard safety, the research has shown, remains overwhelmingly the product of seafarers' seamanship skills and a reflection of the presence of the social preconditions mentioned above.

The shipping industry needs to make much greater use of evidence-based academic research to test the ISM experts' assertions about the Code's effectiveness and adapt its safety management practices accordingly. This requires a radical change of 'mindset', which is probably a bigger challenge than the difficulties of dealing with the hazards and risks inherent in shipping.

*A copy of Dr Bhattacharya's Thesis: **The Impact of the ISM Code on the Management of Occupational Health and Safety in the Maritime Industry** can be downloaded from: www.he-alert.org/filemanager/root/site_assets/standalone_article_pdfs_0905/-HE00980.pdf*

Changing mindsets

Justin Caird-Daley, Human Factors Specialist, Involve Consulting, Norway, www.involveconsulting.com



One of the fundamental human skills needed by those working in the maritime industry is that of changing mindsets.

At the core of Human Factors is the move away from blaming the personnel whose actions ultimately triggered the incident/accident. This change of mindset is potentially the most important skill to develop. Blaming and firing an individual(s) does not solve the problem. It may be viewed as being quick, efficient and convenient, but the root causes are still there, on the surface or deeply buried away, forgotten or not known about.

Changing mindsets also include viewing the human not as weak, unreliable, lazy and reckless, but as competent, reliable, capable and professional. This can only be achieved if the human is given the right training, has a chance to use his/her skills on a regular basis, is motivated and is working in the right environment - both the physical working environment and the cultural environment which includes the prevailing safety culture. We can't change the human, but we can change the environment and conditions in which

we work. But, the most experienced, most motivated, dedicated and well trained personnel can also make the worst mistakes!

The phrases 'must pay more attention', 'why can't they be more careful' and 'not vigilant enough' are often used when talking about the way people behave - such phrases do not help in any way and I would urge a move away from using these expressions. The important human skill here is to understand what is actually meant by attention and vigilance and how we perform as humans, looking at both our mental and physical capabilities and limitations.

Another important change of mindset skill is to see human error as not just the actions performed by the end user, but to understand how we are involved in all parts of a system and hence how and why 'human errors' are something that can be made by anybody involved in each part of the system. For example: During a routine crane operation in strong winds, a load slips off the pallet forks and lands on the quay narrowly missing quayside personnel. Was the accident solely due

to crane driver error or supervisor error? Could the accident have happened on another shift/watch with a different crane driver? Was the driver unlucky that it happened to him? Or was the accident due to a combination of poor equipment design and insufficient training? Was there a factor that was missed by the classification agency design rules or by 3rd party warranty surveyors during an inspection? Was there over reliance on use of procedures to control risk? Was it a scenario nobody thought could ever happen? Understanding organisational or latent factors such as these and how and why they occur is such an important skill to develop.

We are the key part of complex systems. As humans we design, build, operate, train, inspect, maintain, regulate, enforce and ultimately we punish. We design automated systems, which produce a whole set of challenges for the human operator.

Without developing all of these changes of mindset skills, existing or new safety programmes will struggle and potentially not succeed.

Investing in the human element

Matt Dunlop, Chief Operating Officer, VShips Ship Management, www.vships.com

A review of academic and industry literature reveals a reasonably consistent series of elements that combine to create a quality performance. The combination of knowledge and skills is always cited. Knowledge can be transferred in a variety of ways, including training, but also through learning from superiors, peers, and from experience. Skills are developed through the application of knowledge in a practical context. This involves consolidating previous learning, and generally leads to improvement over time.

The impact of roadblocks, or impediments to progress, is also recognised. While an element of paperwork and record-keeping is always necessary, it can sometimes become an overwhelming distraction. Over-burdensome bureaucracy, the need for frequent reporting and unnecessary duplication can all serve to mitigate positive steps in the application of knowledge and skills, frustrating the improvement we seek. The requirement for knowledge and skills in the industry is regulated by STCW, experience matrices and other tools, while roadblocks might be caused by the necessary requirements of Safety Management Systems and other regulations.

But the most significant element that contributes to performance is not only unregulated, but suffers from under-investment. The impact of attitude, behaviour and values is enormous. Attitude in particular can explain differences in performance between otherwise identical vessels, and can account for the entire culture within a company or on board a vessel. Analysing the factors that contribute to attitude is a complex issue, and there is no universal theory on attitude upon which everyone can agree.

The examples set and standards demanded by Managing Directors, Superintendents and Masters reflect their attitudes and can affect all those operating not only within the same sphere, but beyond. The critical leadership role played at many levels within organisations is fundamental to a quality operation, but the significance is often missed or not understood. Setting and demanding standards from others can be a tough job for many; surely it must be even more difficult if the individual has received no pertinent training. So through under-investment the industry is not setting itself up for success, as long as the management of this critical area is left to chance.

Whereas knowledge and skills add together, attitude can be seen as a multiplier, that is to say that irrespective of how well the knowledge and skills elements combine, a poor attitude will always drag the overall down. On the other hand, a good attitude can bring transformational improvements. For example, those who display a positive attitude are likely to be better motivated in training and improving skills and more creative at managing stifling roadblocks. They are more willing to accept responsibility and get to the heart of problems rather than to apportion blame. The path to success lies in improving this key attribute in all layers of the organisation.

A regime that focuses relentlessly and solely on that which can be objectively measured and regulated may offer a comfort zone for many. The real benefits will however remain beyond the reach of those who make this their primary focus. Imaginative steps are needed to break out of this model, and only then will the full potential of our people be realised and the undoubted benefits derived.



A human-centred approach to HSEQ

LEADERSHIP – COMMUNICATION – COMMITMENT

Manoeuvrability

Maintainability

System safety

Planning
 Resources
 Responsibilities & authorities
 Risk assessment
 Corrective action etc.

Implement
 Shipboard
 Drills & e
 Recruitment



• Occupat

• IMO Re

Analysis

Feed
 Interna
 Managem
 Acciden
 Non-confo

Survivability

Habitability

entation
operations
exercises
& training etc.

cargo

- STCW
- Investing in people
 - ILO Conventions
- Occupational health and safety
 - ISM
 - ISPS
- Resolutions, conventions & guidelines
 - Industry Guides
 - ISO 9001, 14001, OHSAS 18001
 - Corporate Social Responsibility
- Environmental awards
 - Voluntary codes
- Charterer's standards

Occupational Health and Safety

Personnel

Manning

- Accident reports
- Safety meeting minutes
- Safety reports
- Management reports
- Operational reports
- Technical reports
- Environmental reports
- Security reports
- Inspections
- Suggestions
- Crew appraisals
- Internal audit reports

Managers

DPA

Ship

- Feedback
- Education & training
- Corrective action
- Preventive action
- Safety alerts
- Security alerts
- Case studies

The principles for a human-centred approach to HSEQ

- Any changes to procedures, working practices, equipment and systems are based on an explicit understanding of users, their abilities, the expected work, and the working environment
- All aspects of the user's experience of procedures, working practices, equipment and systems are considered - from proposal to disposal
- Users are involved throughout any change
- Changes to procedures, working practices, equipment and systems are driven and refined by trials with users
- Relevant skills and knowledge are identified and applied
- Time and resources are allowed for adjustments and corrections

Training

Workability

Controllability

back
l audits
ent review
t reports
rmities etc.

The hallmarks of a good HSEQ manager

Javier Quintero Saavedra, HSEQ Manager, TMGA, www.tmga.es



For a company HSEQ policy and management system to succeed it needs to be everyone's policy and system. If the choice is to have someone at the helm of HSEQ, particularly as the management representative, then that individual needs to be everyone's HSEQ Manager. It is my view that the Board should consult across the company not only to draw up the HSEQ policy but also to appoint the one tasked with promoting and overseeing its implementation.

I believe that for a HSEQ professional to excel in any industry and certainly the maritime one, he/she needs to come from that industry and then go for HSEQ training

to manager level. HSEQ experts lacking a maritime background are welcome as external consultants and indeed they would be needed for some campaigns or highly specialised work. Integrity and sound professional knowledge and competence would arguably be among the most distinct features a HSEQ Manager should meet. It is after all, about having influence and having the respect of all, from the top management down.

A special ability to effectively liaise at all levels is crucial as it is fully realised that a HSEQ Manager has been entrusted to implement and manage the company's policy and system rather than his/her own. In order to be fully effective he/she needs to be informed of all that is going on. Communication becomes of the essence - being copied on virtually all e-mail traffic; put on notice in advance; and kept invited to regular meetings is a must since no matter, subject or business within the company keeps out of HSEQ.

Walking the 'shop floor' - the ships' decks, engineering, command and control and accommodation spaces - is vital and the HSEQ Manager would put him/herself at a disadvantage if they only visit for risk appraisals, audits and unannounced or scheduled inspections. The first duty is to be in a position to help, while on the other hand, participation and feedback comes out of getting to be known and being readily available. Promoting a no blame culture is essential as it is proposing disciplinary action when procedures are persistently ignored.

Good recruiting and training as prerequisites for continued competence of all in the company need to drive the HSEQ Manager's work. He/she needs to be on the lookout and should not hesitate to propose behavioural based safety approaches to achieve long term success, prevent HSEQ being perceived as an additional rather an integral part of anyone's job, and plan training activities accordingly.

Safety culture and the human element



Captain Sarabjit Butalia

The shipping industry is run by and for people. Human behaviour needs to be managed at all levels, ranging from ordinary seafarers to regulators developing national and international regulations. It is vital for a safe and viable shipping business to effectively manage the human element, taking account of the capabilities and vulnerabilities of humans.

Developing a safety culture with the effective and correct application of human factors plays a vital role in the implementation of health, safety and environmental protection policies. The HSEQ personnel in a company are entrusted with the task and responsibility to develop and monitor the safety culture.

Companies develop procedures, work schedules and safety standards with the implicit assumption that people are essentially alike. HSEQ personnel should understand that individuals are unique - they have different needs, different

ambitions, different attitudes and different levels of knowledge and skills. The objectives of the ISM Code to ensure safety at sea, prevention of human injury or loss of life, and avoidance of damage to the environment can be achieved by developing a good safety culture. The HSEQ team supports and guides the shipboard team through effective communication while at the same time ensuring that the decision making stays in the hands of the master and his crew.

The HSEQ team is required to manage and operate the systems and have current knowledge about the human, technical, organizational and environmental factors that determine the safety of the system. It involves creating a safety information system that collects, analyses, and disseminates information from incidents and near-misses, as well as regular proactive checks on the system's vital signs, which fits into the **informed culture** component of a safety culture. Ships' personnel are required to be open in reporting any errors and near misses, thus promoting a **reporting culture**, which includes an organizational climate in which people are prepared to report their errors and near misses. It is normal for us to make mistakes. It is also clear that wider organisational factors

play a huge part in helping to create our behaviour. These realisations have allowed a new approach to safety management to emerge in recent years, hinged on the need for safety critical organisations to shift from a **blame culture** to a **just culture** for both ship and shore personnel.

An effective reporting culture depends, on how the organization handles blame and punishment. What is needed is an atmosphere of trust in which people are encouraged, even rewarded, for providing essential safety-related information. The HSEQ team needs to have a pro-active approach in developing and establishing a safety culture within the organization. Although in some cases the root cause of an accident is equipment failure through poor design, in the majority of cases the accident is attributable to operational failures arising from the fallibilities we suffer - the human element. Therefore a clear understanding about human element issues should help in achieving the company's goals and objectives in reducing accidents.

The complete version of Captain Butalia's article can be downloaded from:
www.he-alert.org/filemanager/root/site_assets/standalone_article_pdfs_0905-/HE00985.pdf

Providing human element tools for seafarers and ship managers

Dr William Moore, Senior Vice President, The American Club & Chairman, IMO Joint MSC/MEPC Human Element Working Group
www.american-club.com

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In the mid-1990s there was a lot of interest in the human element. At that time I was with the American Bureau of Shipping (ABS) looking at how we should be addressing human element matters from a Class perspective. We recognised that one of the problems with engineers designing ships was that the human element was seen as an obscure concept; I wanted to get down to the 'nuts and bolts' and the 'deck plate' type of activity and develop the first ergonomic guide for Class societies. So, in 1998, we released the first edition of the ABS *Guidance notes for the application of ergonomics to marine systems*. Meanwhile, the US Coast Guard was pushing their *Prevention through People Program* (featured in **Alert!** Issue 3) which helped the IMO and the like to bring human element issues to light. At about the same time, a Joint MSC/MEPC Working Group was dealing with the implementation of the ISM Code and it was decided that they needed to address the wider human element outside of STCW.

At that time there were a lot of human element experts who could address issues such as behavioural science, cognitive processing and the higher level of human element related concepts, but what did that really mean for the IMO and for the industry? How could you take those concepts and turn them into actual tools? In many ways, the industry and the human element experts had failed to grasp the need to bring human element tools to bear on the industry. For example, soon after the IMO Guidelines on fatigue came into effect, at the Joint MSC/MEPC Human Element Working Group in May 2004, comments were made at the meeting that it would be beneficial to communicate important IMO documents in a format that was user-friendly for seafarers.

By this time, I had moved to the American Club, so I took this on board and by the time of our next Working Group meeting we at the American Club had produced *Preventing Fatigue*, an easy-to-read and user-friendly publication which incorporates an undercurrent of humour, while at the same time imparting a serious message, which everyone could understand and absorb (featured in **Alert!** Issue 6). We eventually followed this up with similar publications: *Shipboard Safety and Protecting the Marine Environment*. But, over time, I began to get this feeling that as a 'tool' each was useful but not useful enough because they did not look into the detail of how we should address these issues.

We needed to get away from these fancy marketing things and look into providing

tools for seafarers and ship managers that could help them in addressing the human element in a general sense and in complying with mandatory instruments. We needed to check whether the seafarers were as knowledgeable as they should be about mandatory instruments. This led to the development of our e-learning tool *Clean Seas: complying with MARPOL 73/78*, a series of web-based modules designed to familiarize seafarers with the six annexes to the MARPOL Convention. This was partly in response to the pervasive concerns of the international community as to the protection of the marine environment. The E-learning modules are designed to be 'user friendly' for seafarers, and are focused on the practical application of the MARPOL Convention onboard ship. The system also includes a secure online testing facility. Members can track their seafarers' knowledge and keep up-to-date records of familiarization training in compliance with both the STCW Convention and the company's safety management system requirements under the ISM Code.

When I first arrived at the American Club in 2003, we looked into pre-employment medical examinations for seafarers – something that other P&I Clubs were also pursuing. Too often, we were finding that people were joining their ships and a week later were dropping dead with a heart attack, coming onboard with hepatitis and with bloated livers; we also had cases of seafarers literally dropping dead while they were queuing for the airplane; and, if you were to open their bags, you would find that they had enough medicines to supply a pharmacy! We would find that the same doctor that had issued a ton of prescriptions had also stamped their certificates with a clean bill of health. We wanted to put an end to that sort of problem so we decided to introduce our own programme requirement for seafarers, who come from as many as nine nations. We thought it best to implement a programme of screening at authorised clinics, so now it is a requirement for any seafarer that joins a ship entered with the American Club to go through our pre-employment medical screening programme. Thankfully, more Clubs have begun adopting similar programmes.

Bridge Resource Management problems continue to test us, and frankly, pilotage errors and pilot interaction with the bridge team are our 'nightmares'. We have introduced a series of DVDs under the title of *Stranger on the Bridge*, which aim to enhance the awareness of seafarers in regard to bridge resource management while a pilot is onboard ship. The DVDs,

which are presented in English, Chinese and Russian, focus on the responsibilities of deck crew, and the limitations of over-reliance on marine pilotage, in preventing accidents.



Another problem that I have been grappling with for some time is slips, trips and falls, which represent about 30% of all personal injuries onboard ship, largely due to poor design. As an example, if you go down the stairs/inclined ladder of some engine rooms you can barely get your heel on to the step without having to turn sideways to get your full foot on the rung and go down. The general design of stairs onboard ship are extremely lacking; some of them might as well be a vertical ladder and it is something that needs to be addressed at the IMO, although in fairness some classification societies now have ergonomic standards for stairs, ladders and railings for tank inspections.

We also still have issues with entry into enclosed spaces – just last month there was yet another enclosed space accident aboard a ship. Yet, the IMO, P&I Clubs and others have issued circulars and notifications; we have a poster about it, we have it in our comic books on shipboard safety and we have issued member alerts – but, for some unknown reason the accidents still occur. One of the better and more active initiatives on addressing enclosed space entries has been Bob Coutie's efforts through the Marine Accident Casebook (maritimeaccident.wordpress.com).

The quality of seafarer has dropped off dramatically in recent years, and trying to find qualified people especially when the markets are doing well is difficult particularly with the number of new build vessels due for delivery in the near future pushing demand for qualified seafarers upwards. Some shipowners are trying to keep it 'cheap' which presents us with a big challenge. The markets are very bad right now so they are trying to find more ways to cut costs and 'crew' is the first place they go for because this represents a massive cost for them. We try to work with the shipowners – we talk to them about the safety issues, we suggest that they look at their claims, look at their direct costs and indirect costs. We try to get down to the dollar sign aspects of it; we can show them how and why such claims are costing so much money and then we suggest how they can prevent these claims in the future.

Steering gear compartment fire

This report features a fire that started in the steering compartment of a 1752grt anchor handling tug supply vessel. It highlights a number of human element issues, not least inter-personnel factors and a lack of trust between working groups, and failings in emergency response and preparedness.

Some 12 hours before the incident, the ship's towing pin hydraulic unit was started by the bridge watchkeeper so that he could lower the towing pins, but it was not shutdown after the pins were lowered. Ultimately, a pipe union on the hydraulic unit worked loose, oil began leaking from the union and, over time, the leak grew into a spray, which saturated the starboard end of the hydraulic unit, the electrical fittings located there and some rags that had been left nearby.

The report concludes that the leaking oil probably penetrated the connecting plug of an electrical solenoid located at the starboard end of the hydraulic unit, causing it to short circuit, which either created enough heat, or a spark, that was sufficient to ignite the oil soaked rags.

Following the fire alarm, the crew

mustered at their designated muster stations. However, no one took charge on the deck because the chief mate, the designated 'on scene commander', remained on the bridge. As a result, the crew's response to the fire was not effectively controlled or co-ordinated. The crew had not been appropriately inducted, drilled or trained in the use of the ship's emergency equipment and they were not familiar with the equipment or their roles and responsibilities in an emergency. The ship's safety management system contained procedures outlining how fire and abandon ship drills should be carried out in accordance with SOLAS and the requirements of the Flag State, but it also contained a drill schedule that provided some contradictory information.

The master and crew did not identify numerous deficiencies that existed in the ship's emergency equipment before it departed from port. While the ship had recently undergone a Flag State inspection and routine class surveys, neither authority nor the master and crew were aware that the ship was unseaworthy in relation to critical safety equipment.

The investigation found that used rags had not been disposed of correctly; instead, they had been left lying on top of chemical drums stored near the towing pin hydraulic unit, which themselves were not stored appropriately on the deck in the steering compartment.

Previously there had been disagreements over working arrangements between the master, the chief mate and members of the crew. This disharmony had increased and, because of a previous confrontation between the chief engineer and the second mate, a general feeling of distrust developed between the mates and engineers. The report suggests that these inter-personnel factors and a lack of trust between the various working groups on board may have interfered with their ability to work as a cohesive team while responding to the fire.

The purpose of this summary is to highlight certain human element issues arising from this incident; there are many other issues highlighted in this very comprehensive accident report. Those who are involved in the management and operation of ships are strongly advised to read the whole report which can be downloaded from www.atsb.gov.au/media/2895678/mo2009009.pdf

Reports & Studies

Guidelines to Shipping Companies on Behavioural Safety Systems

The Chamber of Shipping (UK)

These guidelines have been produced in response to concerns voiced by the UK Marine Accident Investigation Branch (MAIB) that complacency was becoming increasingly significant as a causal factor in marine accidents.

Note: Superseded by Guidelines to Shipping Companies on Health and

Safety: www.ukchamberofshipping.com/library/guidelines-shipping-companies-health-and-safety/

Nobody is perfect, but a Team can be (Chinese version)

The Team - Pacific Basin Shipping Ltd, Hong Kong

A Chinese translation of the full article from Pacific Basin Shipping Limited, which first appeared in Issue 25 of **Alert!**

www.he-alert.org/filemanager/root/site_assets/standalone_article_pdfs_0905-/HE00990.pdf

The human element in safe navigation

Captain Simon Pelletier, Vice President, International Maritime Pilots Association (IMPA)

This article discusses the human element knowledge and skills required of marine pilots.

Editor's note: This article was written for Issue 25 of **Alert!**, but due to a communication problem it did not arrive in time for inclusion. Apologies are due to Captain Pelletier who wrote this article at very short notice due to the late withdrawal of another potential contributor.

www.he-alert.org/filemanager/root/site_assets/standalone_article_pdfs_0905-/HE00995.pdf

Meeting diversities in maritime education

Captain Jan Horck PhD, MSc, Extra Master Mariner, Assistant Professor, World Maritime University

This thesis aims at creating awareness on dilemmas and challenges that students and faculty meet when working in a multicultural environment. In order not to have students academically suffering from environments that they are not used to, there are several issues identified, generated and discussed.

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Alert!

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