



The International Maritime Human Element Bulletin

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Too much information!

Throughout the last 20 issues of these **Alert!** bulletins, we have emphasised the importance of the human element to the safe and efficient operation of any ship, not least the need for communication between all stakeholders to ensure that the ship is 'fit for purpose'; that the requirements for a safe and secure working environment, decent working and living conditions, fair terms of employment and a healthy lifestyle for the seafarers are fulfilled; and that the seafarers are provided with the right resources for their education, training and career development. All of this serves to ensure the ultimate objective of the safe conduct of the ship and the safe and timely delivery of its cargo.

Fundamental to the successful design and operation of any ship is the importance of relevant, timely and accurate information and feedback.

Information management is about the storage, processing, transmission, input and output of information. Today, much of this is undertaken by way of Information Technology (IT) - the application of computer, communications and software technology for the management, processing and dissemination of that information. But, we should not forget that there is also a human element to every information management system.

In the maritime context, information management can take a variety of forms, ranging from: the simple, but vitally important, verbal exchange of navigational safety information between the team on the bridge, and a plethora of information sources available to them to assist with the safe conduct of the ship and the protection of the environment; machinery control and surveillance, and the gathering of data for analysis with a view to improving system performance and controlling emis-

sions; crew administration, education, training and welfare; feedback processes for improving ship and system design, training and health and welfare onboard; and even the gathering of the facts for investigation purposes in order to determine the circumstances and causes of an accident with a view to preserving life and avoiding accidents in the future.

A quick glance at the centrespread

feature in this issue will lead the reader to question whether there is too much information required of, and available to, the maritime community today. And, there is a risk that too many disparate information management systems - often with little integration or coordination between them - could be detrimental to the safe conduct of the ship and the safe and timely delivery of its cargo.

Go ahead for Series 3!

This issue of the **Alert!** bulletin brings us to the end of the second series of this human element awareness project, the aim of which has been to improve the application of human element principles in the design, construction and operation of ships.

However, this is not the end of the project. The Nautical Institute is most grateful to Lloyd's Register Educational Trust for agreeing to fund a third series, in which emphasis will be placed on identifying and defining human element competencies for all major disciplines in the commercial maritime sector. Issue 22 of the **Alert!** bulletin will be published in January 2010.

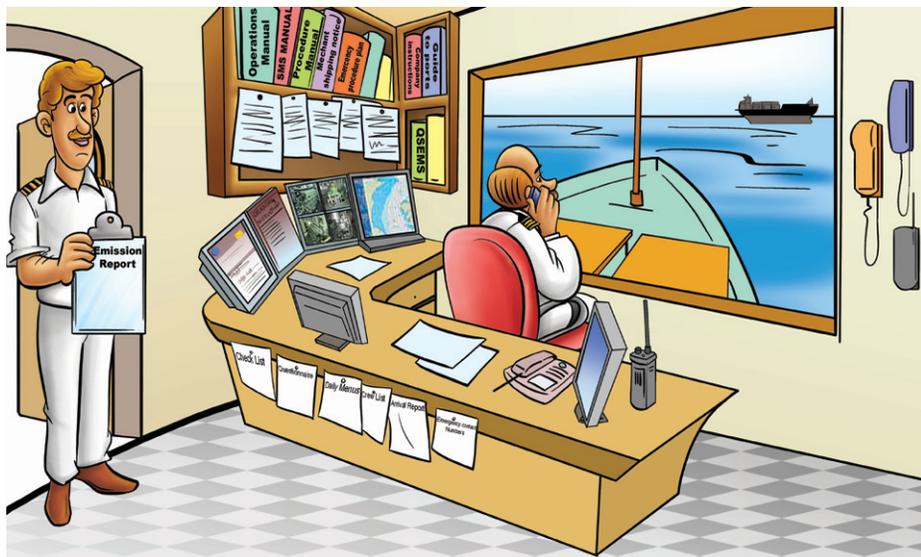
Through the **Alert!** Project, we seek to represent the views of all sectors of the maritime industry - contributions for the Bulletin, letters to the editor and articles and papers for the website database are always welcome.

The Editor

Alert!

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A radar screen is a good example of making a lot of information understandable. The screen has different indicators to tell a Master what he or she needs to know - what ships are nearby, how far away they are, and the vector to tell them where they're heading. The radar provides this information with context including the approaching shoreline and the distance range, which helps the Master to understand what they should do with this information - If he or she should change course or speed and so on.

Being involved in managing information and its processes is an important role, but the data needs to be sorted, analysed and understood properly for it to be used optimally.

How many times have you wondered why you are being asked to provide certain pieces of information, and what is done with it after you have provided it? If the person providing the information does not understand the 'bigger picture' such as the context and the end-use for the

information, then they are likely to provide it in a manner that suits their use for it, and not consider the person receiving it. With a greater understanding of the reasons, value and how the receiver will use the information, the provider can assess the information and draw attention to significant items and anomalies.

If an information receiver does not understand the context from which the information was provided, then they are unlikely to understand its significance and how to use it. For example the information provided to ships about the recent sightings of pirates could be overlooked if the subject line in the email did not use words such as 'Pirates'.

This is not just a shipboard phenomenon, the same happens ashore in the office. There is a major difference however, which is an office-based worker can simply lean over the cubicle or walk 10 meters to find out the context and other perspectives of the information.

To clarify an item sent from shore to

vessel or vessel to shore has expense and time zone issues. This, I would suggest, constricts the ability and willingness of people to provide a full context. We need to be far more explicit, and provide a real-world impact in the information we send between both vessel and shore.

The process/information bridge between vessel and shore has been a non-issue since the mid 90s. We have Inmarsat and other providers enabling this. However, given the reasons above, I would caution unnecessary use of this process/information bridge. VSAT implementations potentially, and unfortunately, can increase information clutter as any amount of data, that the pipe can support, can be sent at a fixed price. The 'we have paid for it so let's use it' attitude soon comes into play to justify the expense.

What is sent from shore to vessel, or vessel to shore, has to add explicit value to those involved. A dot on the radar screen does not mean much without its surrounding data to fill in the blanks.

Bridge team command and control Managing the navigational plan

Morgan Turrell, Vice President, Marine Investigation Programs, Princess Cruises

Alert!

The International Maritime
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In Princess Cruises we have adopted the Bridge Team Command and Control concept of the pilot/co-pilot model used in aviation, which establishes Navigator, Co-Navigator, Operations Director and Administrator roles within the bridge team. Simplified and specialized task checklists were developed to recognize these changes.

Perhaps the most important relationship is between the Navigator and Co-Navigator. The Navigator is responsible for the conduct of the vessel and executing the passage plan, while the Co-Navigator, who is the second officer of the watch in all phases of navigation, handles other functions and checks the Navigator's actions. When operating with a pilot, the pilot communicates his intentions directly to the Navigator. All communications within the team utilize closed loop communications. When an order or any vital navigation information is passed, the initiator issues the command, the receiver repeats the order, and the initiator then closes the loop with a verbal affirmation,

ensuring every opportunity to catch a human error.

The Operations Director and Administrator functions are added as the vessel enters more restrictive environments to handle additional duties. The new protocols do not preclude the Master from acting to ensure safety, but mandate a uniform framework for all officers to safely conduct a watch. Each role is assigned by the Master at a briefing held prior to each manoeuvre.

Bridge Team Command and Control has been fully implemented and will be practiced in the company's new simulator facility, which consists of two full-mission bridge simulators for procedural and human factors training, and six part-task simulators dedicated to Integrated Bridge System (IBS) training. The simulators will use the same IBS and Emergency Management Systems equipments found on the newest vessels in the fleet.

A longer version of this article can be
downloaded from:

www.he-alert.org/filemanager/root/site_assets/standalone_article_pdfs_0605-the00815.pdf

Information management can be defined as: *the skilful use of gathered facts (information) to achieve an objective.* This implies that the right information is prepared and presented at the right time to the right person in a manner that is immediately understood and relevant to the situation at hand.

Incoming information either provides information and/or instructions or requests information, such as port requirements from agents, charterers voyage instructions and requests for information from the managers. There is also the need to send out information to interested parties ashore, such as position reports, port documents, cargo and loading plans and ISPS documentation.

On the bridge there is a variety of instruments at the bidding of the master and officer of the watch (OOW) providing position, speed, course steered and made good, depth of water, rate of turn etc. Additionally, radar provides information on land and ships in the vicinity.

The ship's library consists of Flag State notices and regulations, IMO, ITU and Admiralty publications, port guides,

equipment manuals and last, but most certainly not least, the Company's Quality, Safety and Environmental Management System (QSEMS) manuals, which are required reading by the entire ship's crew.

At the heart of information management, and ISM, is a good filing system. Without this, access to information can take on monstrous and daunting proportions. There are a large number of filing systems and each one has its proponents and detractors. EST uses a paper based numerical system that encompasses around 50 deck and 21 engineering files, all detailed in the Operations Manual Standing Instructions. There is a forms list which details in a matrix, by Company recipient departments, the file number, form number, method of transmission and frequency of preparation. Certain checklists and forms are not transmitted but filed on board.

All documentation is paper based, but the Information Revolution is beginning to make itself felt. Documents are being sent as Email attachments instead of facsimile transmissions. There are a number of computers on the vessels - generally

stand alone - with document transfer by floppy disk or flash memory.

The main obstacle in changing to a computer based system is the reliability of computers and peripherals. Usually there is very limited repair and maintenance knowledge available on board. Data security is dependent on regular backup which is improving with the availability of external hard disc drives (HDD). Crew computer literacy is somewhat varied, from enthusiastic hacker to absolute novice. By far the highest risk factor is the amateur computer expert who, while trying to assist, clears the HDD or deletes the operating system, usually at the beginning of the voyage.

For the future I would like to see integrated Bridge/Navigation systems as the norm for all ships, provided they are not used to replace properly qualified and skilled navigating officers. For inventory handling, maintenance and QEMS I would like a central data base system with reliable ship/shore buffered access from the ship and good cross checks.

A longer version of this article can be downloaded from: www.he-alert.org/filemanager/root/site_assets/standalone_article_pdfs_0605-/he00820.pdf

Environmental reporting comes of age

Dale Neef, DNA Maritime LLC

Officers and crew in the maritime industry already have to deal with an overwhelming and mind-numbing amount of paper-based logs and reporting forms. The growing number of environmental regulations that will be coming into effect in the next few years will only add to that burden.

The emphasis for environmental reporting is quickly shifting from what ships put into the sea, to what ships put into the air. With the ratification of MARPOL's Annex VI and its new Emission Control Area (ECA) status, ships entering the US soon may be required to report on fuel and engine use.

So why, despite the workload, the opportunity for error, and the penalties for misreporting, do shipping companies still rely on hand-written and easily doctored logs for their environmental reporting?

Part of the reason is antiquated IMO reporting requirements for paper-based logs. But, the IMO isn't going to change unless there is pressure from the industry, and the responsibility for retaining a paper-based system lies equally with shipping companies themselves.

Electronic monitoring and reporting is not technically difficult or expensive. Onboard electronic systems these days can record exact real-time data in a multitude of areas: on engine performance, vessel speed and location, fuel usage, tank levels, ballast exchange, valve openings, oily water separator run-times, outputs from oil content monitors, and many other key indicators of a ship's environmental performance. Hand-held data entry devices, using security technologies such as Personal Identification Number (PIN) identities and time-stamped photos, can ensure verification of inspections; and satellite communications systems using broadband technologies allow all that data to be sent from ship to shore, so that the corporate office can be aware of every ship's performance - anytime, anywhere. That data can just as easily be made available to regulatory authorities electronically.

These are the types of reporting technologies that the industry needs to adopt in order to cope with the new regulatory climate. Not only does this type of electronic monitoring and reporting

reduce the crew's paperwork burden, but more importantly, by making logs accurate and unalterable, it improves behaviour. Transparency and the certainty of auditable data ensures that crews comply with company policies - protecting them as seafarers from unfair pressure to commit violations, and protecting the company officers from environmental incidents or reporting errors that can lead to their own prosecution or end up costing the company money or damaging its reputation.

With a heightened state of environmental awareness, and as regional and state authorities begin to police their local requirements independently, the time for electronic monitoring and reporting of a ship's environmental compliance performance has surely come.

*See also Dale Neef's article **Electronic Monitoring and Reporting Comes to the Maritime Industry**, downloadable from: www.he-alert.org/filemanager/root/site_assets/standalone_article_pdfs_0605-/he00825.pdf*

Information management - bringing it all together

Cargo operations

- Bills of Lading
- Cargo list
- Cargo Record Book
- Dangerous goods list
- Loading/unloading plan
- Passenger list or return
- Stevedore damage reports
- Ballast Water Data
- Tank/Pipeline/Hold diagrams
- Cargo pumping arrangements
- Checklists
- System/Equipment manuals
- Operating instructions
- Standing Orders/Instructions
- Tank Level monitoring
- Valve monitoring
- Ballast activity
- Emission reports
- Stability, loading and ballasting information
- Temperature or humidity requirements or restrictions

Health, Safety & Wellbeing

- Accident Log
- Medical/Sick-Bay Log
- Safety Posters
- Safety Information
- Safety Bulletins
- Minutes of safety meetings
- Fatigue Guidelines
- Port welfare information guides
- Family support information
- Medical advice
- Quality, Safety and Environmental Management Systems (QSEMS)
- Health and Safety Reports
- Results of exit interviews
- Staff suggestion schemes
- Confidential reporting scheme summaries
- National incident investigation body reports
- Topical health guidance (e.g. swine flu)
- System/Equipment manuals
- Operating instructions

Education & Training

- Records of Training
- Training Videos/DVDs
- 'Getting started' DVDs for new equipment
- CBT programmes
- Posters
- Magazines and bulletins

Regulation

- Official Log Book
- Garbage Record Book
- Radio Log Book
- Hours of rest records
- Ship security records
- Closing of Openings Record Book
- Controlled Drugs Register
- Muster lists
- Ship's certificates
- Certificates of competency
- Ballast water exchange log book
- ISO 9000 and 14000 records
- TMSA records
- Charterer requirements records
- Software/data version control



Ship's Administration

- Crew lists
- Stores Declaration
- Crew Agreement
- Bunker Declaration
- Standing Orders/Instructions
- Garbage Management Plan

Navigation & Communications

- Integrated Bridge System
 - Passage execution
 - Communications
 - Machinery control
 - Loading, discharging and cargo control
 - Safety and security
- Electronic Chart Display and Information Systems (ECDIS)
- Alarms
- Charts (ENC or paper)
- Magnetic compass
- Gyro compass
- Radars
- Automatic radar plotting aids
- Echo sounders
- Speed/distance indicators
- Rudder angle indicators
- Propeller direction/revolution indicators
- Rate-of-turn indicators
- Radio-direction finders
- GPS/GLONASS
- DGPS/DGLONASS
- Long Range Identification and Tracking (LRIT)
- Lorán
- Voyage Data Recorder (VDR)
- Voyage Management System
- Route planning data
- Bridge movement book
- Compass deviation book
- Deck log book

- Records of navigational activities
- Voyage analysis reports
- Checklists
- System/Equipment manuals
- Operating instructions
- Standing Orders/Instructions

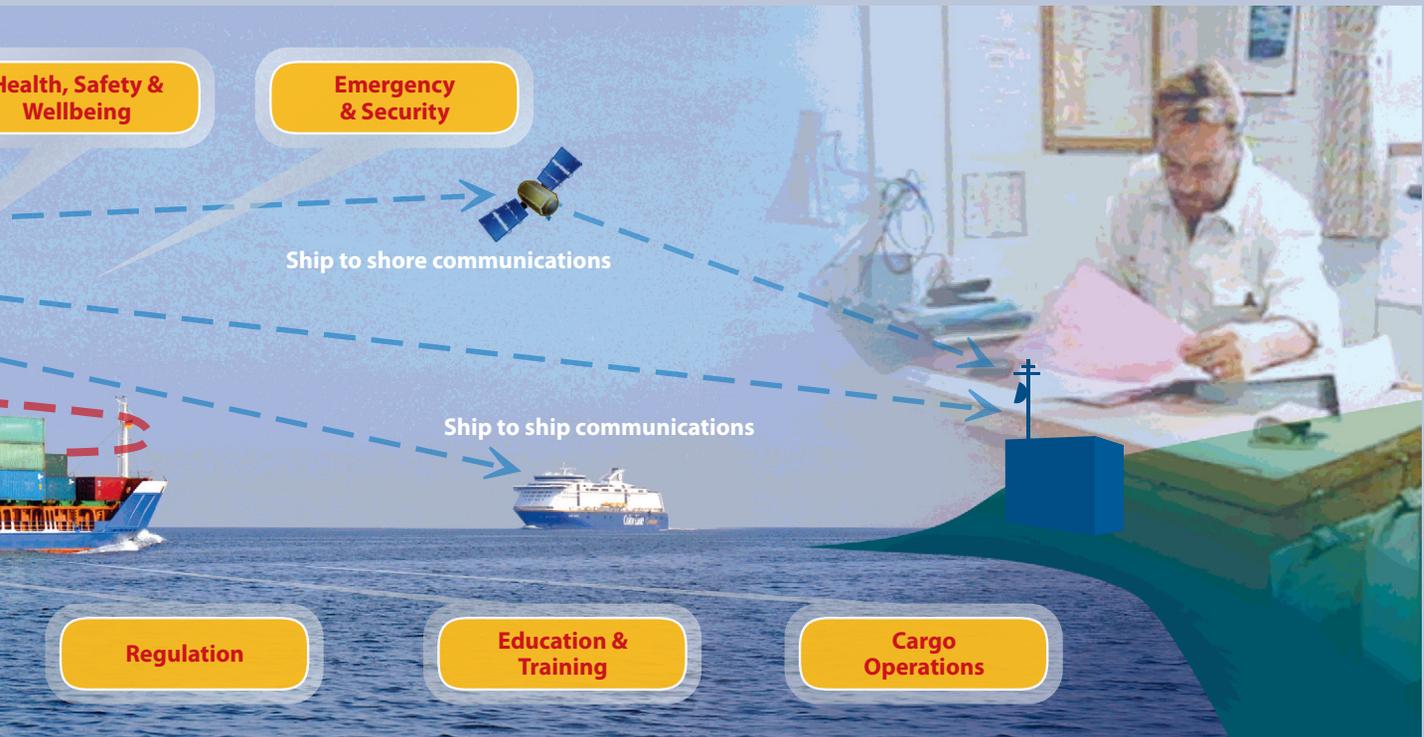
- Compass deviation curve
- Manoeuvring information
- Radar shadow sector diagram
- Ship Radio Licence
- R/T operating instruction cards

- Meteorological services and warnings
- Search and rescue services
- Ships' routing
- Ship reporting systems
- Vessel traffic services
- Aids to navigation
- Nautical charts & publications
- Life-saving signals
- Danger messages
- Distress messages
- Port Guides
- Notices to Mariners
- Flag State Notices and Regulations

Marine Engineering & Electro-technical

- Machinery control and surveillance systems
- Vibration monitoring
- Planned Maintenance
- Conditioned based maintenance
- Power Management Systems
- Survey and inspection reports

- Engine room log book
- Fresh Water Maintenance Log
- Bunker Declaration
- Oil Record Books
- Sounding book



- Bilge Sampling records
- Oily Water Separator (OWS) Performance Analysis
- Log of Fuel Oil/Lube Oil Purifier Settings
- Log of Oil to Sea Interfaces
- Checklists
- System/Equipment manuals
- Operating instructions
- Standing Orders/Instructions
- Tank Level monitoring
- Valve monitoring
- Ballast activity
- Emission reports
- Machinery and electrical space drawings

Emergency & Security

- Shipboard Emergency Plans
- Stability, loading and ballasting information
- Damage control plans
- Ship Security Plan
- Ship's drawings
- Position reports
- Port documents
- Cargo plans
- Loading/discharge plans
- ISPS documentation
- Anti-piracy guidance
- LSA manufacturer's instructions
- Confidential reporting scheme summaries
- National incident investigation body reports
- Search and rescue capability during passage
- Offship communications during emergency (Owner, SAR, Technical support...)

Personal

- Crew phone/text/email
- Crew internet
- Entertainment (DVD/CD/Games)

Communication systems

- VHF DSC
- VHF radiotelephony
- MF DSC
- Imarsat
- EPIRB
- Maritime Safety Information
- NAVTEX/SafetyNET
- Email
- Telephone
- Facsimile
- Telex
- System/Equipment manuals
- Operating instructions

Communication modes

- Person to person
- Email
- Telephone
- Facsimile
- Telex
- Mail
- Paper
- AIS
- Computer print out

Databases

- Use of information technology
- Usability of information
- Data entry
- Checking
- Usability of information systems
- Number of reporting systems
- Maintenance and management of data
- Data analysis for operational and safety issues
- Assignment of responsibility for data and information management
- Asset value of information
- Audit
- Through life cost/opportunity cost etc.

For each job/task:

- **What** set of information needs to be communicated?
- **Why** is this information being communicated?
- **Where** is it going to / where will it be stored?
- **How** will it be communicated/ understood/stored?
- **When** is it needed / how long will it be needed?

For any information:

Should it be combined with other information to add value and increase efficiency?

Aim for the following in the presentation of information (whatever the format - even spoken!):

- **Clarity** - the information content is conveyed quickly and accurately
- **Discriminability** - the displayed information can be distinguished accurately
- **Conciseness** - users are not overloaded with extraneous information
- **Consistency** - unique design, conformity with user's expectation
- **Detectability** - user's attention is directed towards information required
- **Legibility** - information is easy to read
- **Comprehensibility** - meaning is clearly understandable, unambiguous, interpretable, and recognizable

Will e-Navigation help the officer of the watch manage information?

Nick Lemon, Chairman, Australian Maritime Safety Authority

There is an ever-increasing amount of information to be managed by the officer of the watch onboard today's ships. The officer of the watch often has to assess and prioritise information, noting its source, before being able to make decisions relating to navigation safety; this is partly attributable to the often low levels of integration between navigation instruments and other equipment.

Will e-Navigation provide any benefits to the officer of the watch to help address the current information management situation? If e-Navigation is to succeed, then the answer needs to be 'yes', but how can the industry have confidence in this when we know that the effort needed to develop e-Navigation will be enormous? The scope is vast and the process of development must involve many stakeholders working in close cooperation, through various international fora.

Several positive indications have emerged from the IMO in recent years, either directly or indirectly related to e-Navigation.

The IMO's definition of e-Navigation is: *the harmonised collection, integration, exchange, presentation and analysis of maritime*

information onboard and ashore by electronic means to enhance berth-to-berth navigation and related services, for safety and security at sea and protection of the marine environment. So, it is clear that e-Navigation is meant to be all about the management of maritime information.

The second positive indication is the IMO's decision to approve the mandatory carriage requirements for Electronic Chart Display Information Systems (ECDIS). ECDIS is an information management system in its own right, which will do much to improve navigation safety. However, after ECDIS becomes more widely adopted, we are likely to only hear about the incidents to which ECDIS contributed, and not about potential incidents that might otherwise have occurred if it were not for ECDIS.

A well integrated ECDIS with the capability to assimilate other sensor information, such as from radar and AIS, has the potential to greatly improve the way that information is presented to the officer of the watch. However, in many cases the chart information displayed on ECDIS will be the same information that

exists today on paper charts. Old or minimal survey information from paper charts can be brought into ECDIS through the conversion of paper charts into Electronic Navigational Charts (ENCs). Mariners must continue to exercise the same cautions with ECDIS that they do today with paper charts.

The third positive indication is the work being done in the IMO towards improving the guidelines for Integrated Navigation Systems, and Integrated Bridge Systems. There is also a growing acceptance of the role of shore organisations in general, and Vessel Traffic Services (VTS) in particular, in contributing to the safe berth to berth movement of vessels and their cargoes around the globe. Some of the most impressive maritime information system developments are taking place in the realm of VTS. These involve the collection, management and display of multiple sensor inputs in a coherent, user friendly presentation.

A longer version of this article can be downloaded from:
www.he-alert.org/filemanager/root/site_assets/standalone_article_pdfs_0605/he00830.pdf

Employing New Technologies in Marine Accident Investigation

Joseph M Kolly PhD, Acting Director, Office of Research and Engineering, National Transportation Safety Board

During its investigations, the U.S. National Transportation Safety Board (NTSB) uses a range of computational tools to reconstruct accidents and incidents to determine probable cause and formulate recommendations for improvements to transportation safety. Increasingly, we access voyage data recorders (VDRs), engine-mounted sensors, video footage, and onboard and shore-based navigational equipment to collect an array of complex data. We then analyze these data using our collection of computational tools to explain how and why accidents occur.

One of the most significant advances in the NTSB's computer technologies for marine data analysis has been the Marine Accident Data Analysis System (MADAS), developed in conjunction with the United Kingdom's Marine Accident Investigation Branch. MADAS is a set of computational tools comprising a series of modules that parse and decode VDR and radar data, decode Automatic Identification System data, view multiple independent data sets on nautical charts, and analyze bridge audio.

Other tools include the NTSB's vehicle

simulation capability, which was originally designed for airplane accident analysis; we were able to modify this tool to precisely define the control inputs and reaction forces that determine a ship's motion.

In addition, video analysis - photogrammetry techniques, specifically - are used to obtain critical quantitative information regarding speed and motion. Computer animations are generated to integrate the results of these analyses into a real-time display of a vessel's motion, allowing viewers to readily comprehend the dynamics of the accident sequence from various perspectives.

During the investigation of the 2007 allision of the containership M/V *Cosco Busan* with the San Francisco-Oakland Bay Bridge, the VDR provided a range of information invaluable in piecing together the events of the accident. Investigators used MADAS to create a real-time animation that coordinated a variety of VDR information.

To understand the dynamic forces causing the 2006 *Crown Princess* heeling event, NTSB investigators needed to measure

the heel angle accurately, but found that the vessel's VDR neither captured nor was required to capture heeling angles. Investigators turned to the ship's security video cameras positioned around the ship, and used photogrammetry techniques to determine the maximum heeling angle. We then generated a computer simulation to re-create the motion of the ship. VDR data, including speed, turn rate, rudder deflection, pitch angle, and prop shaft RPM, were input into the simulation, along with the heeling angle determined from video analysis. The simulation was successful at determining an accurate time history of the details of the ship's significant response to the rudder commands as the heeling accident unfolded.

We believe that as these technologies evolve, our ability to understand transportation accidents will grow, further increasing our positive impact on transportation safety.

A fuller article, complete with images and practical examples of how these techniques were used in the investigation of the two particular accidents, can be downloaded from:
www.he-alert.org/filemanager/root/site_assets/standalone_article_pdfs_0605/he00835.pdf

Shipboard IT and communication systems

Keeping the crew happy

7

Prasanth Tatineni, Systems Administrator, Gulf Energy Maritime (GEM)

The number of PCs we have on board is close to 13 – well above the average for many other companies – which in itself shows that we look at making things more convenient for those onboard. The standard configuration is that we have one PC for communication on the bridge, one each for the master and chief engineer, 3 in the Ship's office (one stand-alone), one in the crew smokeroom and 2 in the ECR; and on some ships we provide one for the chief officer and one for the second engineer in their cabins. All but one are linked to the ship's network.

Before the senior officers join their ships they pass through every department in our office, during which time we brief them on what is on board, on the procedures, how the communication works and on some 'dos' and 'don'ts'. The crewing department will maintain a record of when a person was last in the office and when briefings have been given, and this is signed off by each department.

Feedback is generally good, but a few feel that we have too many restrictions in place. For example, we have recently been experiencing a lot of problems with virus infections on board the ships, so we have started restricting usage of USBs to specific machines, where it can be monitored. We do not restrict anybody from using the PCs for that data but it has to be under the supervision of either the master or the chief engineer. It is not really a problem; when we are doing our briefings in the

office, we explain why we are doing it, and the crew become aware that it is more of a problem for them if they have a virus – because the day to day operations can be hampered. Most of them understand this.

We are a very forward thinking company. We try to do our best to keep the crew happy, not least because a happy ship performs better

We also have a stand-alone PC in the ship's office, which is not on the ship's network, with no restrictions - everything is enabled - so the crew are free to use it for anything they want. For visitors to the ship in port, we strictly advise them to use that machine because if it goes down we can help the crew to set it up in 2 hours. It therefore does not affect any of their regular work because it is a standalone PC and the network is not affected in the process.

We also provide an Iridium unit on board which is connected to the PABX – the ship's telephone system - so that crew members can make telephone calls from any of the telephones on the ship. They

do not have to stand on the bridge and wait there to make a call. Additionally, we have implemented Blue Ocean wireless for Crew Calling which enables the crew to make calls from their cabins. They have a dedicated number in case their families want to call them back. A lot of crew members are now using this pre-paid phone system, because it gives them more privacy, either by using the telephone or SMS - Short Message Service.

We are working towards providing a full internet facility onboard the ships; however, Blue Ocean have also advised us that they will be upgrading their equipment to provide pre-paid internet onboard.

Even on a personal front, if a crew member has a need for any IT equipment – from a laptop to an iPod - they can just pick up the phone, and tell us what they require; we will go to our regular vendors and get a quote for all available models for the product they have asked for. We then make some recommendations based on the price and configuration and send it back to the vessel. The crew member makes his selection and we buy it and then ship it out to the vessel. Crew members pay us back either through the payroll, or when they pay off they send the money back to the office.

We are a very forward thinking company. We try to do our best to keep the crew happy, not least because a happy ship performs better.

e-Maritime - Its contribution to the human element

Gerry Trant, Managing Director Nautical Enterprise

The EU's e-Maritime Initiative will raise the overall standards of maritime transport over the next ten years to levels of the very best current services by introducing the most efficient technology-led management and operational processes into the shipping industry.

The Initiative will be shaped by policies and strategies, including those of shipping regulators, national legislators and international organisations and by technological innovation.

While a key aim, in the words of the European Commission, is to 'enable maritime transport actors to seamlessly and effortlessly exchange information', it

is important that its impact on people participating in the maritime transport and logistics industry is taken into account.

The main areas where the human element will be affected will be improving many aspects of ship operations and in providing ready access to knowledge sources that will assist people working in the maritime industry, especially in the provision of up-to-date information and support relating to their work, their careers and their leisure.

e-Maritime will help bridge the chasms between maritime operations and international logistics. Through e-learning programmes and the active participation

of colleges, institutes and professional organisations, seafarers will be able to plan for more open-ended careers, with the highest levels of professionalism in their maritime work and the options to move confidently into related activities ashore.

In brief, e-Maritime will provide a framework and support platform for regulatory compliance, for ship and port operations and for the efficient operation of logistics chains, and, in particular, it will support the professionalism and career advancement of European seafarers.

For further information on e-Maritime go to: www.eskema.eu/defaultinfo.aspx?areaid=44&index=2

Grounding of a container ship

A 90,449 GRT container ship ran aground on the Varne Bank in the English Channel. The investigation report highlights some inadequacies in voyage management system skills and errors of judgement resulting from a disregard for conventional navigation.

The ship was set on a course to pass south of the Varne Bank, in accordance with the Voyage Plan. At 0410 the OOW altered course 6° to port due to the traffic situation and, 15 minutes later, 8° to starboard, so as to meet the old course line. Subsequently, the lookout reported a light from the Varne lightship and an object crossing into the fairway from the port side. The OOW then planned a 12° to starboard evasion manoeuvre, which took the ship between the east and west cardinal buoys marking the Varne Bank – which he interpreted as moving fishing vessels.

While approaching the Varne Bank - and subsequently running aground - approximately 15 to 20 different acoustic signals were heard, which the OOW interpreted as a problem with the engine system. It went unnoticed for some time that the ship was aground and that there was no longer any speed over the ground.

The ship was equipped with an Electronic Chart Display and Information System (ECDIS) but it only had the status of an Electronic Chart System (ECS). The report notes that too often, the distinction between the various operating modes of an ECDIS are not clear enough, and that the term 'Voyage Management System' tends to be used if no specific operating mode should be set.

It adds: *'In all operating circumstances, a Voyage Management System (VMS) is used to facilitate the fulfilment of the navigational tasks of the officer of the watch on the bridge. This generic term covers types of systems that differ with regard to handling and functionality and the core purpose of which is always essentially to display chart information on a computer screen.'*

Ultimately the ship ran aground as a result of the crew's inadequate voyage management system skills and resultant incorrect settings, particularly in relation to depth contours, chart alarms and the depth alarm settings; and, errors of judgement on the part of the chief officer and/or the bridge team in disregarding conventional navigation.

The report concludes that errors made by the OOW in the handling of the VMS and the interpretation of the chart display could have been avoided with navigational due diligence. Although it was not possible to determine whether navigation was carried out using the paper charts, the report assumes that during his bridge watch, the OOW relied too much on the 'ECDIS' displays and navigated solely 'according to the computer'.

The report suggests that it is imperative that the operators of nautical vessels check and clarify which on-board systems and electronic charts currently fulfil ECDIS status and whether these systems have been accepted by the relevant administrative bodies of the flag country as fulfilment of the regulations relating to equipment. It adds that crews must be instructed unequivocally on how the on-board navigational systems and equipment should be used.

The full report can be downloaded from: www.bsu-bund.de/SharedDocs/pdf/EN/Investigation_Report/2009/Investigation_Report_01_08.pdf?__blob=publicationFile (Investigation Report 1/08)

Reports & Studies

SYMPOSIUM 2009

Seafarers International Research Centre (SIRC)

The SIRC Symposium is held every two years with the intention of feeding back their research findings to those across the sector who may find them of interest, and use, in forming policy, in reaching decisions about strategy, and in considering operational matters. The six papers that were presented are included in this single document, including: **Patterns in injury reporting** (Michael Bloor); **Making sense of differences in perceptions of risk** (Nick Bailey); **Investigating and Reporting Accidents at Sea** (Mohamed Ghanem); **Supply chains and best practice in the management of health and safety at sea** (David Walters); **Vessel design and the wellbeing of seafarers** (Neil Ellis); **Training and technology: potential issues for shipping** (Lijun Tang). Downloadable from: www.sirc.cf.ac.uk/Uploads/Symposium/Symposium%2009.pdf

HAS THE 'GLOBAL VILLAGE' INFLUENCED THE SAFETY OF OUR SHIPS?

Captain Valerio De Rossi MSC, MNI

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Professor Reza Ziarati

General Coordinato
TUDEV Institute of Maritime Studies

A report on the outcome of the MarTEL (Maritime Test of English Language) Project being developed by several European countries within the framework of the European Union Leonardo da Vinci educational programme. The aim of the project is to establish international standards in Maritime English to improve safety in the shipping world. Downloadable from: www.he-alert.org/filemanager/root/site_assets/standalone_article_pdfs_0605-/he00845.pdf

MANAGEMENT ON BOARD

Captain Shahrokh Khodayari

The subject of management on board like any other system requires a planned approach. There are various patterns which are used to manage a collection of people working in a group or in a company. In this latest essay from Captain Khodayari, he offers some thoughts on the supervision and leadership that is needed to be practiced especially by the master on board.

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THE HUMAN ELEMENT - AN INTRODUCTION

Lloyd's Register

This introductory booklet to the Human Element has now been translated into the Chinese and Turkish languages. Chinese version downloadable from: www.he-alert.org/documents/published/he00855.pdf Turkish version downloadable from: www.he-alert.org/documents/published/he00860.pdf

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