There are many factors that can affect the ability of the master and his crew to ensure the safe conduct of the ship, and the safe and timely delivery of its cargo, and one such factor is that of ineffective communication.

So, today I am going to talk about the importance of effective communication to the human element of ship operations - that is, the seafarer.

Although this human element has been with us since time immemorial, the issues are not constant. It is the humans, systems and machines that have changed, not only through an increase in technology, but also because of a reduction in manning scales and the employment aboard ships, of multi-national, multicultural and multi-lingual crews.
Multi-national crews

Commonly used language onboard may not be the native language of the majority of the crew

Communication problems

Unwillingness to admit difficulty in understanding & communicating

It is now fact that multi-national crews are a common feature aboard more than 65% of the world’s merchant ships, where the commonly used language onboard may not be the native language of the majority of the crew. This inevitably leads to communication problems, which may be exacerbated by the unwillingness of individuals to admit their difficulty in understanding and communicating.
Furthermore, misunderstandings can occur when communicating externally by use of radio, or internally through the ship’s public address system, if the native language of the intended recipients is not the same as that of the person who is delivering the message.
This global maritime industry is now one in which standards of education and training vary and where technology is revolutionising the way in which we do our business.

Indeed, it would appear that awareness, common sense and basic seamanship and engineering skills, all of which require effective communication skills, are taking a back seat to increased automation and a plethora of electronic decision support systems.
The objectives of the International Safety Management Code are to ensure safety at sea, prevention of human injury or loss of life, and avoidance of damage to the environment.
Not surprisingly, therefore, within the ISM Code, the need for effective communication manifests itself in several forms, not least:

• For instructions and procedures to ensure the safe operation of ships and protection of the environment.
• For lines of communication between, and amongst, shore and shipboard personnel.
• For appropriate orders and instructions to be set out in a clear and simple manner.
• For procedures to ensure that new personnel and personnel transferred to new assignments related to safety and protection of the environment are given proper familiarization with their duties.
• For all personnel involved in a company's safety management system to have an adequate understanding of relevant rules, regulations, codes and guidelines.
• For relevant information on the safety management system to be given in a working language or languages understood by the ship's personnel.
• For ship's personnel to be able to communicate effectively in the execution of their duties.
• For procedures for the preparation of plans and instructions, including checklists as appropriate, for key shipboard operations.
We also have the International Convention for Standards of Training, Certification and Watchkeeping for Seafarers (STCW)
It contains a number of references to communication, such that:

• Communication should be clear, concise and understood.
• Communications should be consistently successful.
• Correct communication procedures should be followed.
• Communications should be effective and comply with established procedures.
And, even what is being hailed as the ‘fourth pillar’ of the international maritime regulatory regime, the ILO Maritime Labour Convention 2006…
Maritime Labour Convention 2006

- A language which the seafarer understands
- The working language or languages of the ship and in English
- In an appropriate language
- Take account of the different nationalities, languages and cultures of seafarers
- English-language translation where it is not in English
- Knowledge of ... the English language
- Access to ship-to-shore telephone communications, and email and Internet facilities

...requires that, for example:

- Information on the amount of wages or wage rates should be made available to each seafarer in a language which the seafarer understands.

- Shipboard working arrangements should be tabled in a standardized format in the working language or languages of the ship and in English.

- There should be available to seafarers a copy of the applicable national provisions regarding repatriation written in an appropriate language.

- Occupational safety and health protection and accident prevention publicity should take account of the different nationalities, languages and cultures of seafarers.

- English-language translation of certain documents should be provided where they are not in English.

- Those who are authorized to inspect seafarers’ working and living conditions should have knowledge of the English language.

And, in a slightly different vein, in respect to the provision of crew recreational facilities aboard ship, the Convention recommends that there should be access to ship-to-shore telephone communications, and email and internet facilities.
Communication

The transmission of information through a common system of symbols, signs, behaviour, speech, writing, or signals, by physical, mechanical or electronic means.

One dictionary definition of communication is: ‘the transmission of information through a common system of symbols, signs, behaviour, speech, writing, or signals, by physical, mechanical or electronic means.’
Communication

The ability to properly convey information, by word of mouth and/or written communication is important to the safety of ships’ crews, visitors and passengers.

Clearly, the ability to properly convey information by word of mouth and/or by written communication is important to the safety of ships’ crews, visitors and passengers.

Language barriers at sea can lead to misunderstandings which can cause accidents. But it is perhaps inevitable that if the majority of the crew are of one nationality then they will communicate in their native language, regardless of the presence of others who may not speak that language.

But, of course, its not just onboard communication that poses a problem, because it would seem that the standard of English of some seafarers is so bad that they have difficulty communicating not only between themselves but also with agencies outside the ship.
In 2001, the IMO adopted the Standard Marine Communication Phrases (SMCP). This replaced the Standard Marine Navigational Vocabulary (SMNV) which was initially adopted as far back as 1977 and was developed for use by seafarers, following agreement that a common language - namely English - should be established for navigational purposes where language difficulties arise.

According to the IMO, the SMCP was developed as a more comprehensive standardized safety language, taking into account changing conditions in modern seafaring and covering all major safety-related verbal communication.

It includes phrases to cover the more important safety-related fields of verbal shore-to-ship, ship-to-shore, ship-to-ship and on-board communications. Its aim is to get round the problem of language barriers at sea and avoid those misunderstandings which can cause accidents.

Sadly, from the evidence of accident investigation reports and from the Nautical Institute’s Marine Accident Reporting Scheme (MARS), there is little evidence of the SMCP being used at sea.
Here are four examples of language related problems that have been highlighted in recent accident investigation reports.

• Communication between members of the bridge team was conducted in a language unfamiliar to the pilot
The coastguard had difficulty understanding the content of the transmissions from the ship because of the poor quality of the spoken English. The Ukrainian crew were expected to speak English. The technical manager had no concerns about the competency of the master before the accident, although he considered his standard of English could have been better.
Although the official language of the crew was English, the captain and chief engineer were conversing in Greek
The rescue coordination centre attempted to get medical advice to the master, but language difficulties prevented this from happening.

Valerie Short, a well known lecturer in maritime English in south-east Asia, suggests that the rapid increase in crews from countries where English is a second or foreign language, has presented a number of problems. Indeed, she says that it has often not been addressed adequately during training, and adds that “seafarers, often excellent seamen in every other respect, have gone to sea lacking this vital skill.”
Sadly, there is another problem that is increasingly being encountered at sea. Many manufacturers’ handbooks and ship system operating procedures can be technically complicated and difficult to understand, even if they are written in the native language of the reader – which may not be the case.

In his recent Lloyd’s List article titled ‘Manual labour that can promote safety’, Michael Grey starts off with the words:

“Some years ago a friend who was a shipmanager told me of a valuable lesson he learnt when a new crew he had hired failed completely to take his tanker to sea because they were unable to start the engine.

For some four days this crew which, on paper, seemed to be suitably qualified, struggled to get the ship up and out of the Caribbean repair port where she had been lying, but eventually failed.

They were greatly handicapped, he said, by their inability to speak any known language and were completely unable to understand the ship’s manuals.”

It should be noted that Michael Grey is referring here to an incident that occurred ‘some years ago’, yet there is not much evidence to suggest that the situation is any better today.
Here are some comments from recent accident investigation reports:

• Machinery instruction books were found written in the German language not understood by the chief engineer.
The Safety Management System on board was written in English. The native language of the crew was Russian.
The main engine training manual only provided an overview of the system, and the operation manual was insufficient for the needs of the engineers.
Michael Grey quotes the technical director of a company that writes operations manuals, as saying:

“Proper operations manuals are about far more than familiarisation and training, although they are crucial for both. They are vital tools in the operation of the ship along standard, approved procedures in day-to-day operations besides being invaluable for safe performance of infrequently done operations.”
You could not possibly imagine the sort of scenario in which an unfamiliar crew could not work the ship they had joined.

He adds:

“You could not possibly imagine the sort of scenario in which an unfamiliar crew could not work the ship they had joined.”
The preamble to the International Association of Classification Societies’ Recommendation 71…
Handbooks & Operating Manuals

A technical manual is an essential part of the product and its usability has considerable importance for the ship operators.

Accordingly, the provision of suitable shipboard manuals should be recognised as a major responsibility area.

…which provides guidelines for the development of shipboard technical manuals, says that: ‘A technical manual is an essential part of the product and its usability has considerable importance for the ship operators,’ and that ‘Accordingly, the provision of suitable shipboard manuals should be recognised as a major responsibility area.’

In summary, the key to improved communication at sea, in this multi-national crewing environment, is in recruitment and training – recruitment of seafarers who have some understanding of the English language; and, training of those seafarers in the art of effective communication, and in the correct use of the English language in the maritime environment.

And, manufacturers’ handbooks and ship system operating procedures must be written in the native language of the reader and they should not be technically complicated nor should they be difficult to understand.
Too much/too many...

- Paperwork
- Questionnaires
Another important aspect of effective communication is the ability to exchange ideas, information and knowledge between parties, both in the written form and verbally.

We live in what has become known as the paperless society, yet today there seems to be more paperwork than ever. But, increasing paperwork can sidetrack the seafarer (especially the master or the chief engineer) from his primary purpose of working the ship.

Electronic paperwork (especially e-mail correspondence) seems to have increased the burden on the ship’s master. Indeed it is not unusual for him to spend 3 to 4 hours a day on sending and receiving information by e-mail.

He may also have to complete several pre-arrival and pre-departure questionnaires for the likes of the owner, the charterer or the harbour authority.

He also has to undergo a variety of ship inspections, at which, as one master put it to me: “the inspectors are looking for checklists.”

Of course, any checklist, if properly used, can be of considerable assistance as an aide-memoire for ensuring that nothing has been forgotten when carrying out, for example, a safety critical procedure. But, it is so easy to use them as a substitute for thought. They can lead to a ‘tick in the box’ culture that in turn can breed complacency. Checklists are not foolproof, but it seems that on board ship they are on the increase. For example, you can find 20 or more checklists for assorted bridge, deck and cargo operations, which begs the question whether there is now a need for a checklist to check the checklists!

On a more positive note, the use of software programs for activities such as routine administration, recording ISM Code non-conformances, the management of spare parts and routine planned maintenance, can cut down the amount of paperwork, but only if it is used wisely and if proper IT training is provided.
The effects of Regulation

The most obvious, and most commented and reported on effect of Regulation on the Human Element is the massive increase in on-board administration, resulting in a remorseless and never ending escalation in time and resource-consuming paperwork and record keeping.

One shipmaster, writing in a recent issue of Alert! comments on the massive increase in on-board administration resulting, he says, “in a remorseless and never ending escalation in time and resource-consuming paperwork and record keeping.”
Unfortunately, breakdowns in communication and teamwork are common factors in many accidents at sea. Time and again, accident investigation reports cite ineffective or poor communication as causal factors.
I’ve already spoken about language barriers at sea having an effect on safety, but poor communication and teamwork also can have an impact on the safe conduct of the ship. Here are some examples from accident reports:

• The chief engineer did not communicate the gravity of the problem to the master
Breakdowns in Communication

Poor communication between the captain and the third officer with regard to taking command of the bridge and division of bridge team responsibilities

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Breakdowns in Communication

The Master possessed the personality traits so historically valued in the maritime community such as confidence, self-reliance and strong leadership.

Unfortunately, those qualities served to promote the evolution of this casualty by undermining the principles of good bridge resource management such as open communications, planning and teamwork, which caused ambiguity among the navigational watch standing team members.

USCG report on the grounding of the Monarch Of The Seas on 15 December 1998

• The master possessed the personality traits so historically valued in the maritime community such as confidence, self-reliance and strong leadership. Unfortunately, those qualities served to promote the evolution of this casualty by undermining the principles of good bridge resource management such as open communications, planning and teamwork, which caused ambiguity among the navigational watch standing team members.
Modern technology has undoubtedly revolutionised the way in which we all do our business.
Let me relate a simple home business analogy:

I use a laptop, but mainly as a word processor and as a web browser, and for sending and receiving e-mails. I think I am computer-literate; I am self-taught but probably spend more time trying to find out how to do this or that than actually using the system.

I am on my third laptop since I started this project three years ago. I began with a ‘cheap and cheerful’ model that was simply not up to the job, so I moved on to one where I had provided the supplier with a very broad specification. The trouble was that it was too big and too heavy to cart around the world.

Then, the Nautical Institute very kindly offered to provide me with one. We very carefully considered the specification for this one. Yes, it is very portable and ‘state of the art’, but some of the keys are in a slightly different position to my other laptops. For example, I keep pressing the delete key instead of the page up key.

We thought that we had covered everything in the specification but we forgot about infrared connections and the machine doesn’t really have sufficient USB ports to cover my needs.

I recently acquired a Personal Digital Assistant (PDA). It holds all my contact addresses and telephone numbers; it serves as my diary and as notebook; I can record short messages on it and I can download MP3 music files to it; I can play games on it; it also has the facility to incorporate a GPS receiver, so that I can find out where I am!

It is very handy but it takes me three times as long to write a note or make a diary entry as it does to do the same thing in a paper notebook or diary – and I have to remember to keep the battery charged.

I have a mobile phone – not only does it allow me to talk to someone but also I can record and send voice or written messages, write notes, send and receive e-mails, browse the world-wide web, keep a diary and play games; and it allows me to take and send photographs. Again, I have to remember to keep the battery charged otherwise it will be of no use to me. It has the latest infra-red and Bluetooth technology. I don’t fully understand the technology, but all I know is that each provides a means of communicating with other hardware, as long as I have the correct software.

I’ve recently acquired a GPS navigation system for my car, so that I can now find my way from a to b. It works quite effectively – most of the time.

I use each of these systems independently of the other, although I am mindful that they can be integrated and that one can back up the other. I have been made acutely aware of their vulnerabilities: I have lost work on my laptop, for no apparent reason; I have accidentally deleted hours of painstaking work at the touch of a key; I have ‘lost’ e-mail messages, both incoming and outgoing; I have lost all my diary and contact entries because I pressed the wrong key when I was synchronising my PDA with my laptop; and, on another occasion when the battery on my PDA failed. My mobile phone invariably loses its signal in mid-conversation or when I really need to use it! On, occasions, there is no GPS signal on my navigation system, and it seems that every time it gets ‘lost’ I am directed to ‘turn right at the next roundabout and take the fourth exit’.

Whether it be a PC or a laptop, a PDA or mobile phone or an in-car navigation system, there is an abundance of such systems available on the market. I had the option of purchasing one of a number of operating systems, each with different switches, control keys, displays etc. I am able to ‘customise’ each of them, albeit within the constraints set by the software supplier; I have a choice of internet service providers,
A plethora of information, from a variety of stand-alone systems having differing user interfaces, with the potential for confusion and information overload.

But of course, very advanced technology and integrated systems are being put into ships with the risk of over-saturating the untrained seafarer with information that may be replicated through different means.

The seafarer can therefore be presented with a plethora of information, from a variety of stand-alone systems having differing user interfaces, with the potential for confusion and information overload, particularly if he is not properly acquainted with the operational parameters of any one of those systems.
There is an increasing tendency for some mariners to become over reliant on electronic systems with scant regard for the vulnerability of those systems.

There is also a tendency for some ship’s officers to become over reliant on electronic systems with scant regard for the vulnerability of those systems in terms of their accuracy, reliability, availability, and integrity.
Sadly, nearly every ship collision or grounding is put down to ‘a lack of situational awareness’ – which basically means that the officer of the watch was so absorbed in technology that his awareness of the situation around him was confined to the display rather than looking out of the window.
There is a natural tendency for manufacturers to add their own features, in an attempt to make their equipment ‘user-friendly’. But it is not just the technology that is giving cause for concern. It is the systems themselves, because of a natural tendency for manufacturers to add their own features, in an attempt to make their equipment ‘user-friendly’ or made distinct within the market. For example, the seafarer can be faced with either: joystick, trackball or menu-driven controls, depending on the equipment fit in the vessel in which he is serving.
A need for commonality of symbols, switches and control keys, together with appropriate education in the basic principles of new technology.

Yet, the different nationalities and cultures of seafarers dictate a need for commonality of symbols, switches and control keys.
Modern Technology

If designers of Marine equipment and software could achieve a common standard for basic operations such as operating ECDIS it would go a long way into making all our lives easier as we move from ship to ship.

Source: Master of a AHTS

One shipmaster suggests that if designers of marine equipment and software could achieve a common standard for basic operations such as operating the Electronic Chart Display and Information System (ECDIS) “it would go a long way into making all our lives easier as we move from ship to ship.”
Modern Technology

There certainly could have been more thought when placing certain items such as the GMDSS radios which have alarms that appear to have eyes and ears on the bridge. As soon as a navigational situation becomes critical these alarms go off and you have to listen to the alarms until you have a chance to run to the forward console, aft console and radio station to cancel them all. In the good old days when we just had 2 or 3 radios on board we had a Radio Operator – but now we have over 20 communication systems, and we just have the OOW to cope with them. The number of operating and technical documents associated with the equipment is immense.

Source: Master of a AHTS

The same shipmaster offers a few more thoughts on the impact of modern technology

“There certainly could have been more thought when placing certain items such as the GMDSS radios which have alarms that appear to have eyes and ears on the bridge. As soon as a navigational situation becomes critical these alarms go off and you have to listen to the alarms until you have a chance to run to the forward console, aft console and radio station to cancel them all. In the good old days when we just had 2 or 3 radios on board we had a radio operator – but now we have over 20 communication systems, and we just have the OOW to cope with them. The number of operating and technical documents associated with the equipment is immense.”

The tendency for seafarers to move from one ship type to another, where each has different equipment fits, makes it impractical for them to be properly trained in the use of different manufacturers’ equipments.
Modern Technology
Such is the concern within the IMO about how mariners interact with technology, that the Maritime Safety Committee has issued MSC Circular 1091 - *Issues to be considered when introducing new technology on board ship.*

It serves to remind stakeholders of the various aspects to be considered with respect to how seafarers interact with the technology and of the issues to be considered when assessing their training needs.
Modern technology

- Issues to be considered when introducing new technology on board ship
  - Issues to consider for the training of seafarers
    - Standardization
    - Challenges in training for technology
  - Taking the human element into account when introducing new technology

Specific areas of advice include:
- The effects on non-standardization of controls and displays
- The challenges in training for technology
- The need to take the human element into account when introducing new technology

This Circular invites member governments to bring this advice to the attention of all concerned. It is a useful document; it must be essential reading for those who are involved in the introduction of new information technology into ships.
Training must be an integral part of the introduction of new technology and equipment and must be defined by statute.

Training therefore must be an integral part of the introduction of new technology and equipment and must be defined by statute.
Concerns are now being raised about the use of mobile phones aboard ships and the subsequent interference with navigation.

Such interference is not related to difficulties of a technical kind but rather to the effect of mobile phones on the navigation of the vessel - particularly during the critical periods of entering and leaving harbour and berthing and unberthing - thus demanding the attention of bridge personnel at inappropriate moments.

One ship grounding in UK waters two years ago was attributed to the master who was not paying attention to the navigation of the vessel, and was distracted, whilst using the ship’s mobile telephone.

Another one that beggars belief concerns a grounding that occurred six years ago where the investigation found that the significant unsafe act that resulted in the grounding was the inattention of the mate on watch who was distracted by his wife’s telephone call to their family overseas.

The mobile phone has made communication between ship and shore so much easier, but at times it has resulted in excessive demands being placed on the master and his officers who have to deal with enquiries from a wide range of organisations and individuals who have business with the ship, such as shipowners, operators, charterers, chandlers, port officials and shipping agents.
Breakdowns in communication and teamwork are common factors in many major P&I claims.

Today, there is no place for the autocratic shipmaster nor for the autocratic shipmanager – they need to support each other, and to gain the respect and support of the crew to ensure the safe conduct of the ship and the safe and timely arrival of its cargo.

Good communication therefore, is the key to the successful operation of any ship. But, communication is not just about conveying information or exchanging ideas, information and knowledge – it is about empowerment, inclusion, leadership and teamwork.

Earlier in this presentation, I referred to that part of the ILO Maritime Labour Convention which recommends that there should be access to ship-to-shore telephone communications, and email and internet facilities.

Now, it may seem strange to include crew welfare under the heading of effective communication but there is an aspect of communication that I call ‘sharing and coming together’. It is in fact an important step towards the development of a company culture.

Seafarers must be able to communicate with their families at home and so it is incumbent upon the shipowner or shipmanger to provide the appropriate onboard facilities to allow this family contact. Furthermore, crew members may wish to improve their education, through computer based training, for which they will need access to the worldwide web. It is also good practice to keep them informed about what is going on in the company, and by far the best method is through the medium of a Company newsletter.

However, such newsletter should not be overly technical and they should be written in a style that will be easily understandable by the workforce. They don’t have to be lengthy, but in order to reach out to non-native English speakers, and working on the premise that ‘a picture is worth a thousand words’, cartoons, photographs and diagrams can be used to inform, illustrate and entertain.
Finally, effective communication lies at the heart of good leadership, and that is why, in developing its standards of training in leadership for sea and shore staff, the Nautical Institute has set a specific standard for effective communication.
Effective communication is the key to the successful operation of any ship.
http://www.he-alert.org/