Getting the whole ship's crew on board

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Working Together, Living Together
Taking ships to sea is risky business and it is primarily the role of officers – in both deck and engine departments – to manage these risks. Traditionally there were cultural differences between the deck and engine departments, leading to sayings such as ‘oil and water don’t mix’. Sometimes this banter was friendly – other times not.

Today, ships are far more integrated, both technically and culturally, and deck and engine officers need to work together like never before. They are highly trained professionals with huge responsibility to the company for commercial viability, to society for safety and environmental protection and to themselves and their families for a professional career.

More key onboard skills are shared than not. All officers need to manage risk, human resources, commercial demands, safety, security, integrated Information and information communication technology (ICT) – and, of course, they must be able to work together seamlessly in the case of emergency response. Even the specialist subjects of navigation and engineering need a common understanding. Deck officers should understand the limitations of propulsion and power supply, while engineers should have an appreciation of vessel positioning to understand environmental zones and predict the effects of shallow water on operations.

The Ship’s Officer will explore these similarities and differences to build an understanding of the integrated ship and help strengthen the essential bond between departments.

It’s not only ship operations that officers have to master, but also a joint approach to life at sea. All officers must manage a work/life balance whilst living on board for long periods, often with little access to land-based services or affordable communication.

The Ship’s Officer will offer advice on the unique challenge (and rewards) of life at sea: how do you manage communication? Manage finances; send gifts and maintain health and wellbeing? How can officers travel efficiently, safely and make the most of their time on board?

We hope to make The Ship’s Officer an interactive experience. The magazine will be distributed to seafarers around the world, on paper and electronically, and we hope that you will share your views with us. We hope each issue will lead to discussions on board, and that you will feel free to share these ideas with officers of any rank in any department. Most of all we hope that the issues we explore in The Ship’s Officer magazine help you develop as a maritime professional.

David Patraiko, Director of Projects, The Nautical Institute
Keeping fit to succeed

Physical exercise plays an essential role in health and wellbeing at sea. But you don’t need expensive equipment or lots of space to keep fit.

Lifestyle choices directly impact our health, for mariners as for everyone else, with a key part of this being exercise, according to a report on seafarer wellbeing by The Standard Club (October 2018).

Dr Abaya of Health Metrics Inc. stresses that keeping fit and staying healthy can be difficult for seafarers, considering the labour required for daily tasks. When the opportunity for downtime arises, relaxing offers a much more tempting option. However, exercise releases ‘happy hormones’ in the form of serotonin and endorphins. These work to promote a sense of wellbeing and contentment and provide a welcome mental break from the working day – quite apart from the health benefits of staying fit.

Dr Abaya suggests seafarers engage in at least 40 minutes of exercise per day. But that needn’t mean a complicated workout routine – a basic cardio workout which increases heart rate and improves muscle tone will do. You can also try a team game that involves the whole crew such as basketball, tug of war or ping pong.

Spend 45 seconds on each exercise, with a 15 second break in between then repeat the circuit.
When I step onto the gangway as a chaplain at one of the Delaware River terminals, I carry in my shoulder bag a hotspot - a portable Wi-Fi unit. Hotspots are about the same size as a typical smartphone and the technology inside them is similar. A SIM card (Subscriber Identification Module), inside the hotspot enables a connection to the local cellular phone system. They are designed to create a local area network using their built-in wireless capability. Up to ten users can log in with the hotspot’s user ID and unique password.

At the head of the gangway, I check in with the AB on security watch and meet the duty officer to present my ship visitor credentials. One of my first questions is: ‘Do you have internet access on board?’ The usual response is a shaking of the head. Then they ask me if I have SIM cards for sale. My reply is ‘No, but I do have Wi-Fi hotspots with me that are free, and you can use them while you are in port’. The reaction to this news is enthusiastic smiles.

Before hotspots became available, we used to sell SIM cards providing unlimited data for $50 each, valid for 30 days. On some ships we would sell as many as ten SIM cards, with almost half the crew wanting to activate their smartphones. I would provide assistance to activate the SIM cards, which required calling a special number and following the voice prompts, entering the SIM card number when requested. However, I felt uncomfortable knowing that most seafarers would only be able to use those SIM cards for around 24 or 48 hours while they were in port. SIM cards do enable internet access, but they come at a very high cost. As seafarers came to understand how hotspots worked, we stopped selling SIM cards.

As soon as I remove my jacket and hard hat, my first task is to get the hotspots out of my bag. I explain to the duty officer, usually the third officer on the morning watch, how to connect. News of Wi-Fi hotspots arriving on board travels quickly, and within minutes there is a small group gathered around me, smartphones and tablets in hand and eager to know the SSID and password.

Most of the crew on ships that I visit have limited access to the internet, and some owners charge a fee per crew member to connect to the ship’s system. A
few owners provide sufficient bandwidth for email, but there is a real need for more connectivity. This is so important for the welfare of seafarers. They clasp their smartphones and tablets in the hope that my hotspot will enable them to make a VOIP (Voice over Internet Protocol) phone call using an app such as WhatsApp or Facebook Messenger. Today’s technology takes communications one step further with the use of video apps like Skype, Facetime and Zoom creating unique moments through which families and loved ones can see each other and share their emotions.

We leave the hotspots onboard during the stay in port. This can be anything from twelve hours to a month, or even longer when a tanker is chartered in to provide temporary tank storage at one of the local refineries. The service is free to all seafarers and the ships that call regularly become familiar with the use of Wi-Fi hotspots. Crew eagerly await the arrival of the hotspot units as soon as they have the gangway out. Before each ship leaves, we pick the units up or the duty officer hands them to the ship’s agent before sailing. If time is really short, they pass them to the river pilot before they head out to sea. Seafarers recognise the value of this free service and are diligent about making sure we receive the units back safely, knowing that they are needed for their fellow seafarers.

When shore leave is possible and transport can be arranged, there are free Wi-Fi services available at places like McDonald’s and Starbucks, while many shopping malls also have Wi-Fi, and some cities are now making public Wi-Fi available. This raises an obvious question: why can’t port terminals, both public and private, do the same for visiting seafarers? Cruise ship terminals are already providing Wi-Fi to meet the needs of passengers. The port of Montreal pioneered the way forward for seafarer guest Wi-Fi. The port of Antwerp attempted to establish a Wi-Fi network but the initiative was set aside and is no longer operational. Seafarers need port authorities and private terminals to support them by opening up their Wi-Fi networks for guest use. Such access should be a priority consideration for discussion by Port Welfare Committees.

Meaningful minutes

Even a few hours of internet access can make a difference. On a bulk carrier, I met a second officer who was worried about his family at home in the Philippines. He had not been able to make contact with his wife, and there were some issues with his pay not arriving on time. My hotspot enabled him to reach his wife to reassure her. I observed the change in his behaviour. Before the call he seemed stressed, but after it he smiled and we laughed together as we shared stories. On a car carrier due to sail in sixty minutes I met the captain at the quarter ramp. He was stressed and asked me if I could help him make an urgent call home to the Ukraine. I told him that I had my Wi-Fi hotspot with me and suggested we walk over to my van so that he could make a call away from the noise of the final batch of cars streaming down the ramp. He made the connection to the Ukraine using WhatsApp, and five minutes later he was relaxed and smiling. I gave him my latest copy of Seaways to share onboard.

I experienced the power of connectivity again on board a tanker. I was sitting in the officers’ messroom and the second engineer came in, appearing tired and depressed. He sat down near me, staring at the iPad in his hands. I asked him if he would like to join my Wi-Fi hotspot. Immediately he brightened up and said yes. He wanted to speak to his wife in Russia. Within a minute, he was chatting away in Russian to his wife in Nakhodka. I observed their conversation, and while I do not speak Russian, I can read body language. My hotspot had just made a big difference to the wellbeing of this second engineer and his wife. I even got a chance to say hello to Victoria, the lady in Nakhodka. Another case of hotspot happiness.

News of Wi-Fi hotspots arriving onboard travels quickly, and within minutes there is a small group gathered around me
Making the SMS work across the whole ship

Is it time for a new approach to safety management systems? Nippin Anand PhD FNI considers how we can make procedures reflect the reality of life on board.

Bringing a ship into port isn’t easy. It involves a long list of procedures including pre-arrival notifications, contacting port control and harbour pilots, notifying the engine room, reminding the galley crew not to dispose of garbage and preparing the deck for mooring. This leaves plenty of room for mistakes. For example, regulations on garbage disposal in ports, not clearing the anchor lashings prior to entering the breakwaters, not housing the stabilisers before entering the harbour or leaving the gangway hanging out whilst coming alongside.

Safety management systems (SMS) provide a clear procedure, checklist and instructions for most of these activities. This is intended to help us avoid errors and improve efficiency. However, what is missing is an understanding of why these errors happen in the first place. Why did the able seaman forget to display the flags? Why did the second officer not house the stabiliser?

There is a strong link between the procedures on board a ship. Things don’t simply go wrong because someone made an error or violation. Rather, they go wrong because the functioning of one activity affects the functioning of another – everything is interconnected.

For example, late arrival in port can affect the time available for testing of engines, or the absence of a reminder from the bridge may result in the galley crew disposing of garbage in a prohibited area. Taking the time to understand these vital connections, and how all these things depend on each other, can help us move towards an error-free working environment.

The illusion of killer checks

We often hear terms such as ‘killer checks’ – that is, identifying and checking the areas that are the most critical and therefore need more focus. Less critical areas can then be given less attention. These definitions can be useful when writing procedures and checklists. However, things aren’t always so straightforward.

Not testing a window wiper before departing port may seem like a trivial check – but if it starts to rain, functioning wipers may suddenly become the most crucial requirement for safe navigation. So, what is important can change depending on the situation.

A user-friendly approach to SMS?

The ISM Code requires plans, procedures and instructions to be established for operations. However, it is not always easy to specify the order in which things should happen. Take the example of procedures for mooring operations. It sounds like this should be a single set of actions in a set order, but in fact procedures for mooring a vessel interact with a whole range of procedures, including:

- Embarking the pilot,
- Loading the cargo,
- Securing the cargo,
- Testing the engines,
- Maintaining a gangway watch,
- Last minute ballasting,
- Making fast the tugs.

Many of these activities involve the same resources and information, but often lack a clear order. We may try to neatly separate these activities in our SMS, but there are still only a few seafarers to perform...
these operations and there is little point in creating procedures that fail to resemble the reality of work. If we cannot design procedures which truly reflect life on board, how can we expect seafarers to follow those procedures properly?

Perhaps it's time for the maritime industry to rethink its approach to safety management systems. There are alternative approaches that take into account the connections and interactions between different activities, reflecting the way things happen in real life. One example is the Functional Resonance Analysis Method (FRAM) developed by Professor Erik Hollnagel, a leading expert in industrial safety. Acknowledging the links between activities creates a culture of collaboration and mutual support.

Modern technology allows us to turn this approach into a real time, workable solution (as opposed to a static document which is inaccessible and impractical). What is critical in one situation may not be critical in another situation. ‘Killer checks’ can be changed to suit the circumstances and the whole system becomes a lot more flexible.

The captain becomes aware that the engine room team is waiting to test the engine and the messman gets a notification that garbage disposal is prohibited once the vessel enters into port limits. All this leads to collaboration and much needed support across departments and functions. Accountability no longer rests just with the captain, but is shared across the whole team. As a result, the purpose of the SMS changes from ‘Who do we blame when something goes wrong?’ to ‘How can we support each other to get the job done?’

UNDERSTANDING HOW DIFFERENT DEPARTMENTS WORK TOGETHER CREATES A CULTURE OF COLLABORATION AND MUTUAL SUPPORT
Will zero carbon shipping ever become a reality?

The initial CO₂ reduction strategy from the IMO shows a clear push towards phasing out greenhouse gas (GHG) emissions from international shipping by the end of this century.

“We need to put the brake on deadly greenhouse gas emissions and drive climate action. The world is counting on all of us to rise to the challenge before it’s too late,” said United Nations Secretary General, Antonio Guterres.

The targets agreed in the IMO initial strategy cannot be met using fossil fuels, so research and development will be crucial to success. Zero carbon ships must become more attractive, and there must be more investment in sustainable technologies and alternative fuels.

Which new fuels will be needed?
Alternative fuels and energy sources for international shipping will need to be made available around the world if we are to achieve the ambition of reducing GHGs from shipping to zero. There is room for all options, including electric and hybrid power, hydrogen and other fuel types.

There is also a lot that can be done to improve energy efficiency of ships through operational measures. The Global Industry Alliance (GIA), a group linking the IMO, shipowners, and other industry members, is looking at how barriers to just-in-time ship operations can be removed. Currently, many ships spend hours or days waiting outside ports – running their diesel engines unnecessarily. Just-in-time operations could significantly reduce these emissions.

Further information can be found at: https://bit.ly/2Q0bn11

FOR THE SHIP’S OFFICER TO CONSIDER:
• How will this reduction affect officer training?
• Will there be new types of engineer in the future?
• Will shiphandling be different?
• Will the change in logistics affect life at sea?
• If the world starts using less oil will we still need tankers? Will they carry fresh water instead?
Cyber threats

The growing use of connected technology in the maritime sector is expected to have a positive effect on safety and reduce insurance claims, according to a report from Insurers Allianz Global Corporate & Specialty (AGCS). Electronic navigation tools, ship-to-shore communications and the greater use of sensors have the potential to improve navigation and help avoid groundings and collisions. Sensors could also reduce machinery claims through performance monitoring and early intervention, and help mitigate cargo losses. However, the increasing use of connected technology also means cyber risk is a big concern for shipping. As more systems require connectivity with the shore, vessels will become more vulnerable to cyber attack.

In 2018, COSCO Shipping Lines was hit by a cyber attack affecting terminal operations, while the ports of Barcelona and San Diego were targeted in separate ransomware attacks. The sector is also being increasingly targeted by cyber extortion attempts and business email compromise attacks – a hacking group known as Gold Galleon tried to steal almost $4 million from ports and shipping companies in 2018.

In 2017, the International Maritime Organization adopted a resolution which requires ship owners and managers to incorporate cyber risk management into the ship’s Safety Management System by 2021. Shipping bodies and classification societies are also providing guidance on cyber security. The third edition of the industry’s cyber risk management guidelines, The Guidelines on Cyber Security Onboard Ships, published in December 2018, outlines a clear cyber risk management approach.

“The IMO’s cyber security requirement is set to come into force in 2021, however the risks are prevalent today, and shippers would do well to do more in the interim,” the report said. “A cyber attack against a ship’s navigation system or industrial control systems could cause a grounding or a collision. It does not require much imagination to find scenarios where cyber can pose a danger to shipping, crew or cargo.”

Digital disruption

The potential introduction of autonomous ships, which could eventually operate with no crew on board, has been raising a great deal of discussion in the maritime industry. In October 2018, the International Chamber of Shipping (ICS) released a new study which looked at the potential effects of autonomous ships on seafarers and the global shipping industry. The study, conducted on behalf of the Hamburg School of Business Administration, sought to separate fact from fiction. It aims to give an in depth assessment of risk and opportunities provided by automation in ship operations.

Encouragingly, the study indicates that there will be no shortage of jobs for seafarers, especially officers, over the next two decades. While the size of crews may evolve in response to technological changes on board, there may also be considerable additional jobs ashore which require maritime experience.

However, while automated shipping may create opportunities for the maritime industry which do not exist today, much more work must be done, particularly on the regulatory side, to address concerns about the impact of increasingly automated ships on seafarers worldwide. With over 1.6 million seafarers currently estimated to serve on merchant ships trading internationally, this requires thorough consideration.

The findings of the study suggest that the role of personnel on board and ashore will need to be redefined both operationally and legally. Reviewing and understanding how these roles may evolve is also identified in the study as an important aspect to assess and address how autonomous ships will affect seafarers.

The IMO is currently undertaking a two year exercise looking at how its existing regulations can be used to ensure that autonomous ships are safe, secure and environmentally sound, and what will need to change. This is a complex task, expected to affect many different areas, and just the first step in what will be a long process.

Read the full report: https://bit.ly/2Ir6Ms
Working together, living together

Captain André Le Goubin FNI, a Mooring Master working off South America, talked to deck and engine officers on board the oil tanker *Captain Charles* during a ship to ship (STS) operation off the coast of Uruguay. After the STS was completed, the crew were bound for Chile via Cape Horn.

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**4th Engineer: Emmanouil Paraschakis (r)**

What attracted you to a life at sea?
The opportunity of a career in the shipping industry.

What do you enjoy most about living and working on board a ship?
The different things that you experience.

Is there anything you find particularly stressful about your role?
The only thing that I find stressful is being away from my family and friends for a long period.

How do deck and engine officers work together on board your vessel?
Deck and engine officers on my vessel always work as a team.

What challenges do you experience working together and what do you think could be done to bring deck and engine departments closer?
The cooperation between deck and engine officers in our company is already at a really good level, so I don’t think that we could do anything to bring the two departments closer.

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**3rd Officer: Ramirez Lopez (l)**

What attracted you to a life at sea?
Life at sea is exciting and adventurous, irrespective of any economic slowdowns in the maritime industry. It gives me the opportunity to develop my skills and increase my knowledge, and at the same time the chance to travel around the world and get paid for it.

What do you enjoy most about living and working on board a ship?
People on board have one thing in common and that is a love for the sea. I get to learn from experienced staff and make new friends. It’s interesting to learn about different cultures and languages.

Is there anything you find particularly stressful about your role?
Yes, the main thing is a lot of time away from my family, especially now that I am a father.

How do deck and engine officers work together on your vessel?
On board, we have a good relationship between officers and engineers, even when we are from different countries. All of us are very professional and when in doubt we help each other.

What challenges do you experience working together and what do you think could be done to bring deck and engine departments closer?
When you are on board for the first time, the challenge is to understand the equipment, but then you start to learn about the basic function of each one. To bring deck and engine departments closer, I suggest joint training and meetings on board, even if the main topic is for the deck department and vice versa.

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**LIFE AT SEA IS EXCITING AND ADVENTUROUS. IT GIVES ME THE OPPORTUNITY TO DEVELOP MY SKILLS AND KNOWLEDGE, AND TRAVEL AROUND THE WORLD**
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WE’RE LISTENING

A career at sea is a unique experience. Whether you’re an engineer or deck officer, we want to hear your stories about life on board; what do you enjoy most? What challenges you? What inspires you?

Send your thoughts to: theshipsofficer@nautinst.org