

# Time Pressure in the Maritime Industry

## Port/Terminal Guide



**HEiG**  
Human Element  
Industry Group



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# Foreword

Time pressure is present in maritime shipping in many ways. Like all industries, working and delivering on time plays a crucial factor in activities within maritime shipping.

Unfortunately, this means that time pressure can sometimes be a contributing factor in the cause of maritime incidents. This focussed guide aims to highlight the presence of time pressure to stakeholders in the maritime sector.

The aim of this guide is to:

- Promote awareness of time pressure within the maritime community.
- Improve understanding of different types of time pressure, including self-induced time pressure.
- Emphasise the importance of addressing this issue from top of the leadership chain and developing a visible management commitment to maintaining a safety culture.
- Develop guidance on the importance of repair and maintenance strategy, planned maintenance systems in managing resource issues.
- Emphasise the effect that time pressure can have on safety and well-being on board.

In our daily lives we often recognise the effects of time pressure. When in a hurry we may take risks that we otherwise would not, sometimes even unconsciously. Time pressure has an effect on the way we think. It tends to make us neglect our deeper knowledge and training, and sometimes may lead to potentially lethal consequences. It makes us cut corners, both literally and figuratively. One model used to describe this

is 'Fast and Slow Thinking'<sup>1</sup>. An example of this can be seen in enclosed space incidents where one seafarer collapses in an enclosed space, which may have a hazardous atmosphere, and their colleague rushes to assist without thinking about the consequences. This has resulted in many deaths. Another model is the 'Efficiency Thoroughness Trade Off'<sup>2</sup> (ETTO) which suggests that, with limited time available, some tasks may be overlooked or compressed.

Time pressure leads to stress and as with most forms of stress, there is a balance. There is nothing wrong with setting a realistic timeframe to complete an action or task. It is when the timeframe is unrealistic that 'excessive' time pressure becomes a problem.

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<sup>1</sup> Kahneman, Daniel. *Thinking, Fast and Slow*. New York: Farrar, Straus and Giroux, 2011.

<sup>2</sup><https://erikhollnagel.com/ideas/etto-principle/>

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# Introduction

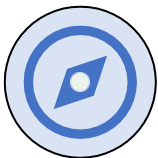
The varied and conflicting demands on our time, from professional commitments to domestic responsibilities, push us to squeeze the most from every minute (Hochschild, 1997; Perlow, 1998, 1999).

Modern innovations like fast food drive-throughs, mobile telephones, microwave ovens, productivity applications etc. continually increase our ability to get more done in less time.

Organisations strain to make the most efficient use of their employees, laying off those who can be spared and pushing those who remain to do more in fewer hours (Schor, 1991).

Experts such as Hochschild and Schor recognize the pressure that companies are under and highlight the impacts that can be felt by their employees such as constraining cognitive capacity and impairing performance. The maritime shipping industry is not exempt from these effects.

Ships are capital intensive assets and operating costs or expenses have a major impact on how the ship is run. Time pressure is a feature of many areas of ship operation and there are numerous high-profile examples including (but not limited to):



## **Navigation:**

The request to meet a 'challenging' Estimated Time of Arrival/departure (ETA/ETD) can lead to shortcuts being

taken or insufficient time available for voyage preparation.

Some of the best-known examples include the *Titanic* sinking, the capsizing of the *Herald of Free Enterprise* and more recently the grounding of *Rena*<sup>3</sup>.



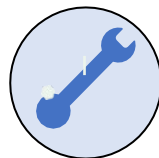
## **Mooring/unmooring:**

There be may pressure to berth a vessel or to unberth to clear the berth within a certain timeframe. The *Hoegh Osaka* capsizing is a supporting example<sup>4</sup>.



## **Cargo operations:**

Pressure to prepare tanks, holds or cargo itself may lead to incidents in cargo spaces. Incorrect or incomplete lashing of containers plays a part in the eventual loss of containers overboard. There has been a trend of increased container losses in recent years.



## **Maintenance:**

Pressure to complete repairs may result in rushed repairs causing damage to critical equipment or injury to crew.

<sup>3</sup> <https://www.taic.org.nz/inquiry/mo-2011-204>

<sup>4</sup> <https://www.gov.uk/maib-reports/listing-flooding-and-grounding-of-vehicle-carrier-hoegh-osaka>

Given that the existence of time pressure in general is beyond doubt, and that there is no formal recognition of time pressure within the maritime industry, there is an opportunity to provide industry stakeholders with insight on the subject.

To establish effective management of the risk associated with time pressure, there is a need to:

- Recognise where excessive time pressure is influencing behaviour.
- Identify where existing safeguards may be used to avoid incidents.
- Evaluate where help should be available under ISM.

This guide will detail situations, issues, and subjects to give the reader an understanding of time pressures in the maritime industry and share recommendations on how to manage them.

# Time pressure

Time pressure is a form of stress that may impair a person's ability to make safe decisions. It can be a form of 'commercial pressure' and businesses may struggle to find the balance between maintaining safety on board and maximizing the commercial performance of the ship.

In other words, there is a fine balance between conducting operations safely and efficiently. Tilting the balance in favour of one may negatively affect the other.

It may not be apparent to individuals (or stakeholders) that their actions and/or instructions may result in time pressure being applied to staff further down the communication line.

In other words, any person directly or indirectly involved with ship operations has the potential to exert time pressure.

Examples include:

- Agents
- Authorities
- Charterers
- Colleagues
- Ports and terminal managers
- Port and/or cargo workers
- Shipboard managers
- Shore based managers.

## Why does time pressure happen?

Some examples of why this happens include:

- Excessive administrative demands
- Imbalance between resources and workload
- Poorly constructed or non-existent procedures
- Weak safety culture
- Lack of awareness of the effect that instructions and messaging can have on people

- Reluctance to challenge real or perceived authority
- Structure of reward programmes for seafarers

There are three different types of time pressure, discussed below.

### Explicit time pressure

This is sometimes called direct time pressure. A formal instruction, which is time bound, is given by a party with apparent legitimate authority that creates a pressure on the receiving party to carry out the instruction within the assigned time.

In some cases, this formal instruction is recorded. The situation is, therefore, visible during audits and investigations.

***Example:** A voyage instruction is sent from a charterer to a shipowner with a tight schedule for a ship. An instruction is sent from the office to the ship to prepare the cargo hold for the next cargo - however the time allowed is not sufficient.*

### Implicit time pressure

This is sometimes called indirect time pressure. In communications between parties, times are not explicitly mentioned, but are

implied in the way the communication is carried out.

**Example:** An instruction to carry out repair work is sent out from the technical department of a shipowner to a ship with no mention of time. However, in most other cases, such an instruction is carried out with the highest priority.

In this case the recipient individual's decision-making is shaped by implicit messages in the communications and processes. Sometimes, this affects people's perceptions of what the organisation wants.

Implicit time pressure is not easily visible or recordable and will seldom be visible in an investigation or audit.

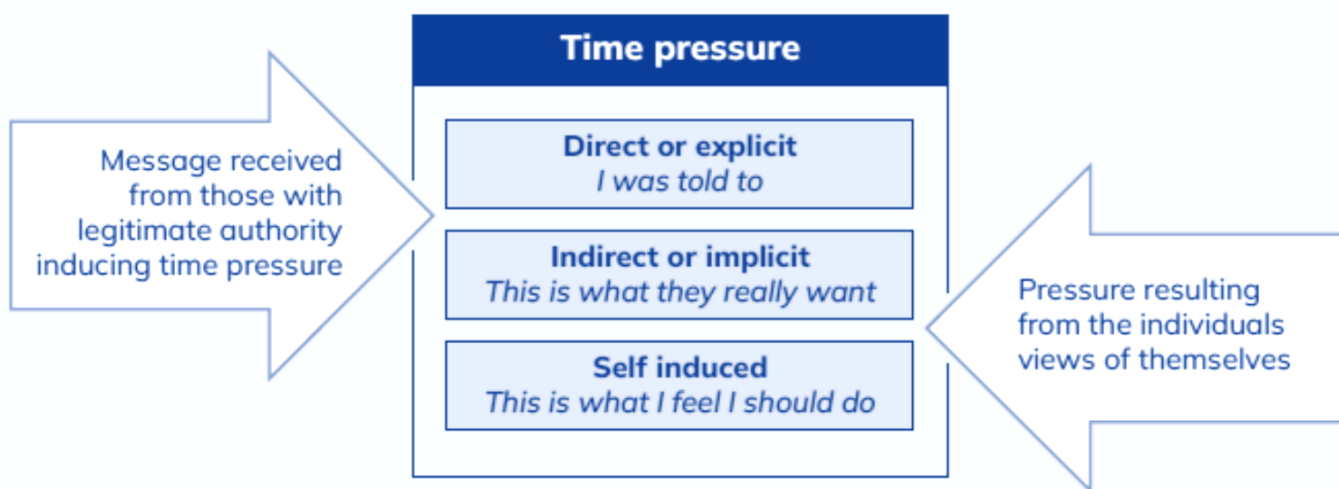
### Self-induced time pressure

This type of time pressure does not originate from a third party but from one's own self. It is the perception that a task needs to be carried out within a particular timeframe determined by the individual, which is usually shorter than the desired timeframe.

**Example:** A vessel/technical manager who must leave the office to complete an important personal errand may choose to approve a safety work permit from the ship slightly more quickly than usual, paying more attention to the time taken to do the job than to the risks involved.

Resources<sup>5</sup> are available from charities or mental health professionals on self-induced time pressure (stress). While self-induced time pressure can occur in any part of the organisation, it is mostly found on ships, as ship's staff are the ones that carry out the sharp end of the tasks. Although self-induced time pressure can occur in the shore side of any organisation, this has not been very visible in this analysis as most of the time it has either been a direct or an indirect time-pressure that affects the shore staff the most. Of course, there are difference in personalities in people and this can lead towards time pressure.

**Figure 1:** Types of time pressure



<sup>5</sup> <https://www.seafarerswelfare.org/seafarer-health-information-programme/good-mental-health>

<https://www.itfseafarers.org/en/health/managing-stress>

<https://www.mind.org.uk/information-support/types-of-mental-health-problems/stress/what-is-stress/>

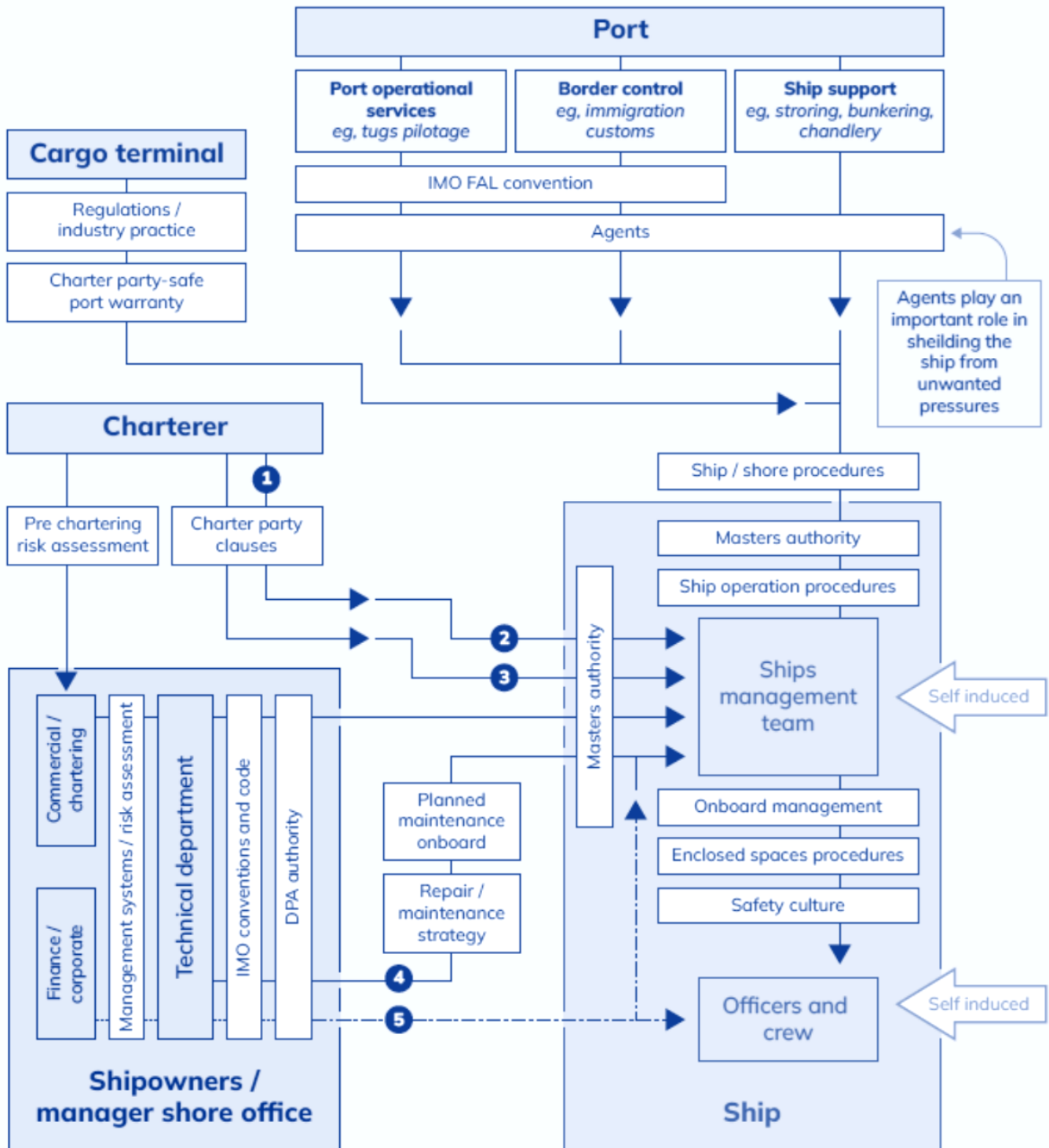


## Sources of time pressure in the maritime industry

In a typical shipping company context, time pressure can arise from different sources.

An analysis has been carried out to identify the various sources of time pressure and how they interact with the ship and ship-owner. The result is summarised in following model.

**Figure 2: A model of the sources of time pressures in the maritime industry**



- ① Charter with tight deadlines    ② Time charter revises time charter eta's    ③ Charterer revises spot eta's  
 ④ Excessive time pressure from repair and maintenance requirements    ⑤ KPI's bonus performance management

In the model, the grey box represents the shipping company's shore office, and the blue box represents the ship. Arrows indicate the flow of communication - and in turn, time pressure.

Continuous arrows represent direct time pressure, broken arrows represent indirect time pressure travels. The red boxes represent existing safeguards or barriers

regulating time pressure within the system. It is important to stress that time pressure can originate from within the line of responsibility and from other outside sources.

Time pressure can arise from within the 'Company' (as defined in the International Safety Management Code (ISM)) or from an outside source, which then affects the company both ashore and on board. Time pressure can arise from charterers in the form of tight deadlines. A common source of time pressure is amending the time required to arrive at a port or berth, or a request to change cargoes and therefore tank/hold combinations on a tight deadline.

Ports and terminals also create time pressure on the ship – for example, by giving a ship at anchorage waiting for a berth a very short time to prepare and come alongside. If the ship requests more time, the port may assign the berth to another ship and ask the waiting ship to continue waiting for another berthing opportunity.

### **What does time pressure look like?**

Stress due to time pressure can manifest differently between people. While some may show many physical signs, others may show only some or no signs at all.

Physical signs may include decreased energy and insomnia, headaches, weight change and change in appetite, frequent sickness, rapid heartbeat, and sweating.

Non-physical signs may include irritability and generally acting differently or changed mood. Increased complaints and grievances are another sign that may be an effect of time pressure.

### **Preventing time pressure**

Preventing time pressure and managing expectations can go a long way to mitigating circumstances that can cause incidents. Below is a list of mitigations that can be put in place to reduce the adverse effects of time pressure.

- Understanding the sources of time pressure
- Knowing the visible signs of time pressure
- Planning and prioritising work
- Having an accessible safety management system
- Confident leaders and a healthy safety culture
- Having a strategic view of workload
- 'STOP the job' practices.
- Supporting the master's authority
- Strong and open communication
- Challenging time pressure (P.A.C.E<sup>6</sup>)

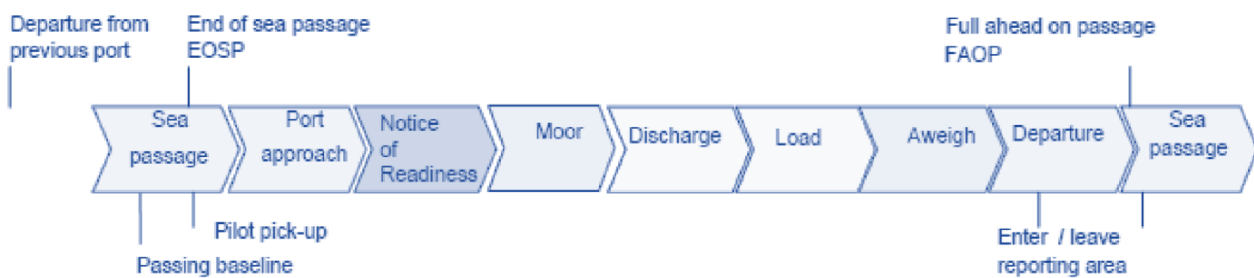
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<sup>6</sup> Refer to Annex A for further information.

# Ports and Terminals Guide

In common with the ships that use them, ports and terminals are increasingly capital-intensive assets, their earnings a function of the number of ships that visit, and the volume of cargo handled. Put simply, the less time a ship is on the berth, the greater the profitability of the port, and the higher the port's ranking on global efficiency league tables

**Figure 3:** Loading and discharge cycle



Any delay in completing a ship's loading and/or discharge cycle (see figure 3), commonly known as demurrage, represents an additional, and often disputed, cost for the stakeholders involved. The overriding commercial imperative is to reduce port time, even in those circumstances where this has minimal, if any, impact on the overall length of the voyage cycle. Instead, ships may be rushed through operations in the port itself, only to then spend extended periods at anchor.

The resolution of demurrage claims is an everyday battleground for ship owner and charterer alike, although this tends to affect tramp operations – particularly dry bulk - more than liner operations. For the dry bulk trades, port and/or terminal time pressure is recognized by IMO as a significant risk factor.

The Bulk Load Unload (BLU) Manual requires, among other things, that ship and terminal management agree a load/unload plan, with timings, prior to commencing cargo operations.

Given the ever-present demand to increase port/terminal cargo throughput, particularly but not exclusively the handling of containers, time pressure has been cited as a causal factor for incidents involving a wider range of ship types. These include Ro-Ro loss of stability and loss of containers overboard following a failure to stow/secure in compliance with IMO standards.

This indicates there is not sufficient time to ensure cargo operations can be safely undertaken, and/or the that the ship is seaworthy prior to port departure.

Due to limitations on storage, tugs, pilots, channel tidal and navigation limits etc., any delay to a ship's departure can rapidly escalate, causing potentially critical disruption to the 'just in time' supply chains that characterise logistics.

In the context of operations, therefore, demurrage may become a target to reduce which, within limits, is deemed acceptable. Beyond these limits, ships may be pressured to berth in marginal weather or directed to reduce their time on berth. In short, the 'design for operation' philosophy that informs port design is flawed as it is 'operating to design' with margins reducing over time. Much of the time pressure related to port operations may, consequently, be viewed as a means to the end of minimizing demurrage and/or CAPEX. In practice, this increased pressure/workload principally impacts ships' crews.

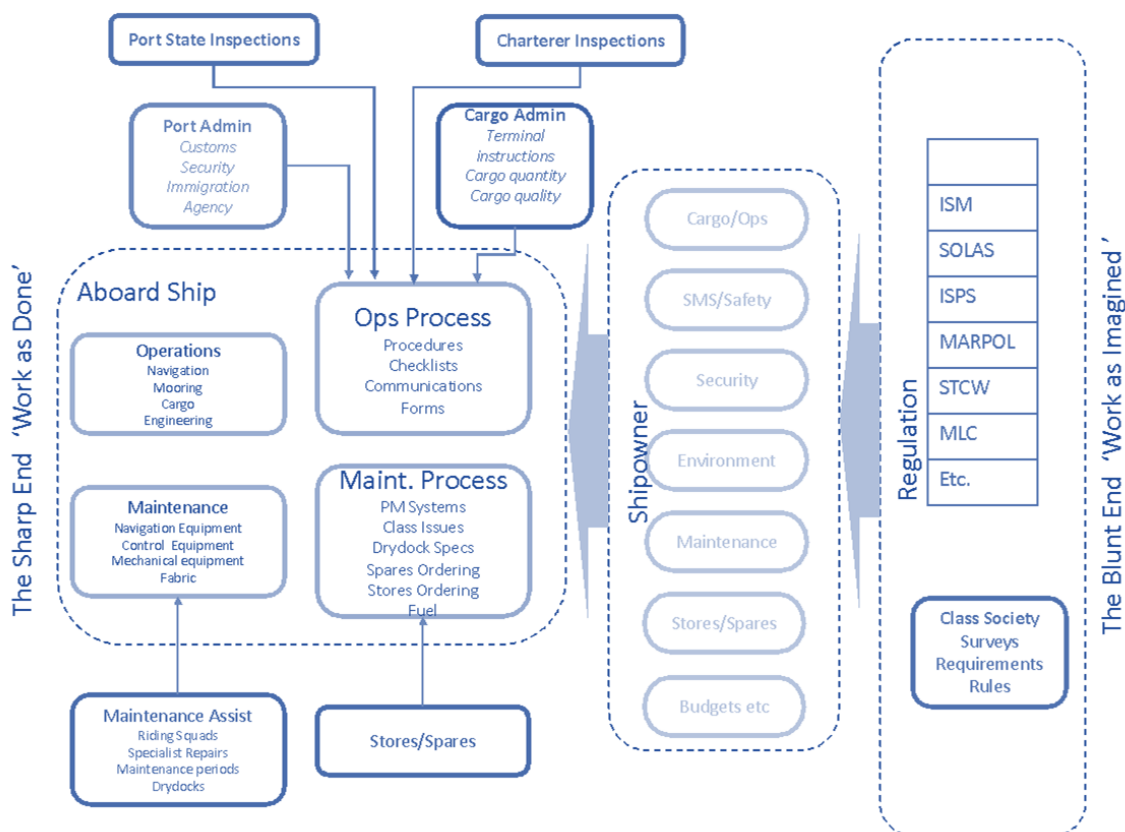
It shapes their behaviour and decision-making, crowding out essential safety-related tasks established in regulation and/or best practice, such as completion of a ship-shore checklist and other pre-arrival information exchange between ship and port/terminal staff. This may also impact the safety of shore-based personnel who board the ship in port.

Port stakeholders commonly presume that ships' staff have access to all information necessary to plan the port call. However, the information in pilot books and port entry guides or other sources of public domain information may often be out of date or limited. Nonetheless, a ship is expected to operate at peak efficiency throughout the port call with little regard from the port authorities as to how this can be achieved without the most basic and essential information. Without access to the relevant information, there is potential for a lack of understanding of local culture and practice on both sides. This is an often-overlooked aspect of safety in port operations.

### Direct Time Pressure in Ports

In port, pressure is exerted on a ship's crew by a diverse range of stakeholders, each driven by their own agenda. A small army may descend on the ship demanding the immediate and undivided attention of senior staff (Figure 4).

**Figure 4:** Direct time pressure in ports



This includes: -

- Government bodies - police, immigration, customs, and health
- Port State Control Inspectors
- Cargo inspectors/agents - to inspect tanks / holds in readiness to receive cargo or affirm the cargo has not been damaged in passage
- Berth operators - subject to their own time / commercial pressures to turn around ships in fulfilment of time critical 'efficiency standards' established by international trade bodies, and increase their ranking on league tables established by said trade bodies
- Owners - who may have requirements for repairs, superintendent visits etc.
- Classification society surveyors
- Loading stores, spares, bunkering, and
- Agents
- Stevedores and other port personnel

In days past, additional staff such as the Catering Officer/Purser and/or Radio Officer were available on a ship to meet with port personnel. These roles have long since been dispensed with, and the burden of handling port/terminal bureaucracy largely falls on the Master alone, particularly if agent support is reduced. This may represent a security, and health and safety management challenge for the Master, who is responsible for their wellbeing at all times, particularly if port personnel seek to access enclosed spaces without issue of a Permit to Work (PTW) by the ship or fail to comply with the conditions of the PTW, and/or are exposed to fumigated or other hazardous cargo.

Typically, oversight of stevedores etc. is discharged by the chief officer, in addition to their functions of stability management and cargo storage/securing – even though they may have been on duty many hours before berthing and require rest.

## Understanding ship/port operation

The first step in a successful port visit is to understand how the ship works. A number of important factors need to be understood in the way that a ship operates and is regulated

### **The ship is governed by the laws of its Flag.**

A ship is governed by the laws of its flag state. However, while in port, local port regulations will also apply to the conduct of the ship and its crew.

### **The Master is in control of the ship and access to the ship.**

Even in port, the Master exercises overall responsibility for the safety and security of the ship, including the access of all shore personnel and all cargo-handling activities performed by stevedores or other port / terminal personnel. The Master – or, in practice, the chief officer - should be able to control access via a security watch at the gangway and establish a briefing and / or proactive monitoring regime for shore-based staff who require access to the ship for cargo operations.

It is the prerogative of the ship's Master and staff to determine when shore personnel are permitted to board. This may include delaying the landing of the gangway until the ship's crew are ready to take on their responsibilities in supervising access.

### **Permit to Work - Locked access to holds / tanks**

While on the ship, shore staff are subject to the jurisdiction of the flag state/Master together with the regulations and standards of the IMO, notably the International Ship Management (ISM) Code and the Safety Management System of the ship established in compliance with the Code.

Among other things, shore staff must not access holds, tanks or other 'high risk' enclosures other than in accordance with the ship's ISM Safety Management System (SMS), which may include a Permit to Work (PTW) issued on behalf of the Master. It is unlikely that shore staff will understand and adopt the ships PTW systems and the requirements of that document/system need to be translated into understandable actions and restrictions for shore staff. This may be by means of supervision, restriction of access, signage or locking access to these spaces until they are considered safe for access.

### **Fatigue management**

International regulation in principle requires ships' masters and other critical staff to prioritize rest to mitigate and manage their fatigue. That a ship has recently arrived in port does not remove the need for statutory rest, even where it is expedient to commence cargo operations as soon as possible.

There have been cases where a port agent handling crew changes is pressured by the owners' manning agency, possibly operating under a fixed-budget contract, to send crew onboard direct from the airport without accommodation and proper rest to avoid additional hotel charges. This is contrary to IMO recommendations on fatigue management.

### **Safe manning**

Safe manning regulations and associated guidance require a ship to be sufficiently, effectively, and efficiently manned to provide safety and security of the ship, safe navigation and operations at sea **and** safe operations in port. By extension, they mandate sufficient resource for ships' staff to maintain statutory rest hours without compromising the safety of port operations. Safe manning does not, however, mean

unlimited resources are available for simultaneous labour-intensive operations.

For example when the ship is moored 'all fast,' the crew will require time to ensure working areas are tidied and made safe before allowing visitors to board.

### **Ship/Shore Safety Checklist**

No port-related operations should be undertaken without a detailed exchange of information between ship and port/terminal operator prior to arrival and commencing port operations. This is required by IMO regulation for certain ship types, and best practice otherwise. The exchange of information includes completion of a ship/shore safety checklist duly signed by representatives of port and ship.

Prior to the commencement of cargo handling, and the deployment of stevedores, a ship/shore safety meeting should be convened. This should include a final review and confirmation of the arrangements for, among other things, hold or other enclosed space access. It ensures each side is fully briefed and aware of their respective responsibilities towards one another.

### **Tanks/Hold Properly Ventilated Before Berthing**

In general, there is an expectation that the ship is cargo worthy prior to loading, i.e., all hatches or tanks are fit to receive the nominated cargo. This would normally require the crew to perform cleaning in the time available between discharge and loading ports, without compromising the timing of issuing the Notice of Readiness (NOR). This is often a critical condition of the contract between ship owner and charterer in terms of determining costs incurred. In bulk cargo discharge operations, the removal and environmentally compliant disposal of cargo residues is part of the 'ventilation' process,

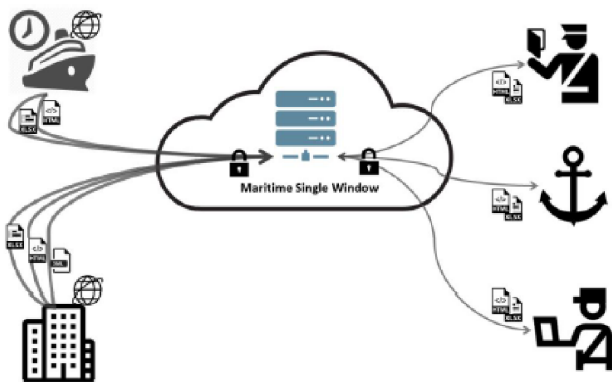
and when holds are full access trunks may not have been ventilated.

### IMO Facilitation Convention

Among others, the purpose of the Facilitation Convention (FAL) is to simplify formalities, documentary requirements and procedures on ships' arrival, stay and departure from port.

The FAL Convention mandates the use of modern information and communication technology for ship-shore information exchange, ideally using electronic data interchange (EDI) through a Maritime Single Window (MSW) (Figure 5), which serves to ease the burden on ships' Masters in particular. Furthermore, the use of a MSW removes the need for government / port personnel to physically attend the ship other than for direct operational reasons. Instead, all information exchange between ship and port is finalised during the sea passage by the agent or Master as the case may be.

**Figure 5** - Maritime Single Window Conceptual Model (Source: IMO)



### Agency

The first and perhaps key point of reference for Masters of ships is the port agent. The agent fulfils an essential role, ensuring the ship is registered in the port system in good time, communicating relevant information to the port authorities, terminal and relevant government officials.

The agent should have the latest information regarding all aspects of the ship's call, not simply act as a go-between/communications-conduit, as is too often the case.

The agent, too, is under pressure. If the agent additionally serves the interests of the charterer / shipper, they may not be in a position to prioritize the requirements of the owners and crew. By contrast, where owners appoint their own protective agents or husbandry agents, they will exercise better control of their requirements. The owner's agent may be granted delegated authority to sign statutory shipping documents such as the bill of lading on behalf of the owner without the need for the involvement of the Master/chief officer.

### Charterers' Safe Port Warranty

Depending upon the nature of the contract (charter party) between the ship owner and cargo interests, the latter is subject to warranting the safety of the loading/unloading ports.

There are no formal regulations or standards applicable to the 'safe port warranty'. When the issue has been raised in court, the meaning is determined on the merits of the individual case. While the term is largely considered to relate to the physical geography – or hydrology – of a port, there is nothing per se that excludes 'soft' issues from the warranty. Best practice advises that charterers should undertake due diligence on the port operator/terminal to verify compliance with all safety regulations, for example the BLU Code, and confirm the management of the ship-shore interface is fit for purpose and in compliance with the FAL Convention etc

## Specific time pressure issues

### ETAs and ETDs

The first obstacle is arrival and departure notification times. There is a misunderstanding in many quarters as to what the 'E' stands for in ETA and ETD. The correct meaning is ESTIMATED and not 'Exact' as many agents and other parties seem to believe. An estimation is an approximation, not an absolute value or quantity. A ship's ETA or ETD is the approximate time that something is expected to happen, not the time that it will happen. Definitive timing arrangements should not be made based on an estimate alone unless there is an associated time envelope, e.g., an allowance of an hour or more unexpected delay that can be accommodated without penalty.

In practice, many – but not all – ports and terminals use ETAs or ETDs to make both provisional and firm bookings for services. Some ports offer little if any resilience in the provision of pilotage, with the ship subject to a 'use-it-or-lose-it' policy if it fails to present at the agreed time, whilst others engage arguably non-productive resource to offer 'windows' of several hours to accommodate last minute ETA / ETD variation. Lack of specific information about these policies can create unnecessary stress and pressures on board.

Similar situations apply to the availability and operational time envelopes for tugs and linesmen. Particularly in busy ports, tugs and linesmen may be in great demand and so are programmed for periods sufficient to perform the required operations in normal circumstances. If there is flexibility on changes to booking times, or if restrictions and late notice penalties apply, then this information needs to be available to the ship's Master in advance of the port call.

In planning the port call, all regulations and policies concerning early arrival or delayed departure, to undertake on board operations, facilitate statutory rest periods etc. should be unambiguously available to the Master before arrival.

Where ships' Masters and personnel are of the belief that all scheduled times are absolute, with financial penalties imposed on the ship if they fail, this can lead to over-enthusiastic operational practices on board with associated corner cutting. They may dispense with or circumnavigate safe working practices and protocols, leading to accidents or undesirable incidents. Much of this can be avoided by simply ensuring that the Master is properly and comprehensively advised of all operational restrictions and where appropriate liberal facilities available to the ship during its call. Ports that invest to offer greater service flexibility and / or effectively communicate with ships should not be penalized or otherwise viewed to be less efficient than those that cut time and resource to the bone. Quite the opposite; in the context of determining whether or not the port can meaningfully be assessed as 'safe' through a process of due diligence, they should benefit from this investment

### Master's and senior officers' workload in port

Port arrival may involve long passages under the guidance of a pilot. In compliance with local port regulation, and most likely the SMS approved by the Flag State / Classification Society, the Master and/or other senior staff are required to be present in the wheelhouse throughout the pilotage. They are likely to have been on duty for a substantial period prior to the pilot's embarkation, i.e., to navigate the congested waters that typify port approach.



Port compliance with the FAL Convention, in particular the obligation to accept only electronic documentation for regulatory clearance, is patchy at best. In many, if not, most ports, it is expected that the Master, in the absence of support staff, must personally deal with port authorities, who continue to come onboard regardless.

Throughout cargo handling operations, the chief officer is expected to be on call. Depending on the nature of the cargo, and whether the operations involve loading or unloading, or both, they must, among multiple other tasks, dynamically evaluate stability and verify cargo security, without breaching the port's deadline for departure. The perception is that failure to meet the deadline will invoke severe censure / personal financial loss for the chief officer. Misguided professional pride may also be a factor in self-imposed pressure to meet external deadlines.

On completion of cargo operations, by convention and practice the Master may be 'required' to personally endorse cargo-related documentation, e.g., bills of lading, notwithstanding international shipping rules do not require this; the task can be delegated to an agent.

International maritime law empowers the Master to delay port departure if they— or other key member of ship's staff - feel unduly tired and unfit for duty, or they are not assured that the ship is regulatory compliant/seaworthy. Should this power be invoked, however, in addition to the perceived or actual censure of the Master personally, demurrage costs on the ship owner will inevitably result. There may also be a wider impact if delayed departure prevent the arrival of the next vessel scheduled to discharge at the berth.

## **Weak compliance**

A comprehensive regulatory framework has been established by IMO, and others, to address the risk associated with port/cargo operations. This includes, among others,

- the Code of Practice for the Safe Loading and Unloading of Bulk Carriers (the 'BLU Code'),
- the Manual on loading and unloading of solid bulk cargoes for terminal representatives (the 'BLU Manual')
- the Code of Practice for Safety and Health in Ports issued by the International Labour Organization (ILO).

However, like the failure to comply with the FAL Convention, the safety culture and enforcement regimes for ports are reportedly weak, particularly in developing countries.

Nor are ports alone guilty in failing to comply with regulations related to the port-ship interface. A recent submission to the IMO following a concentrated inspection campaign by the Port of Rotterdam established that 67% of the ships inspected violated SOLAS regulations relating to the loading and securing of containers prior to port departure. In the opinion of the report's authors, low financial margins, and the need to 'work as efficiently as possible' puts time pressure on ships' crews and others (e.g., stevedores), increasing the likelihood of errors and deficiencies.

## **Insufficient staff available to control access**

IMO safe manning standards require, among other things, sufficient personnel on the ship to undertake port operations – without specifying what functions must be discharged and / or the workload involved.

Maintaining control of ships' access requires there be sufficient staff on – or at the behest

of - the ship to carry out an effective gangway watch. Access by one person may mean access for all and stevedores, for example, may gain access and attempt to access holds without the Master's consent, which is required under the ISM Code. With multiple other functions to be performed, in practice the ship may not have the personnel to control gangway access, which may also be seen as a requirement of the International Ship and Port Security (ISPS) Code. However, there is nothing to say that those controlling access must be drawn from the Safe Manning Certificate cohort. Contrary to the widely held belief of many port authorities, perhaps, responsibility to protect a ship from port-sourced security risks, such as unauthorised access, rests with the port not the ship.

### **Lack of understanding of ships and shipboard responsibilities**

On a similar theme, shore staff may have little understanding of ships and how they operate. This is notwithstanding regulation and standards that require, among other things, shore staff interfacing with ships – including casual staff engaged as sub-contractors – receive subject matter training. Anecdotal evidence is few port / terminal operators have formalized training in ship awareness, albeit there are notable exceptions, e.g., Chile.

### **Agents**

Most ships now have access to broadband communications through satellite. Port agents come at cost. Owners may see engagement of the latter serves no purpose if the functions of port bureaucracy can be performed directly by the ships' staff, which in turn potentially increases the pressure on the ship, particularly if the port operations are not routine for any reason.

### **Power/Power distance**

Ships' staff can be at the wrong end of hectoring by officials who demand time and access as well as threatening to delay the ship if suitable 'accommodation' is not forthcoming. This is a complex area of behavioural science, though it may be resolved to a clash of culture between port and ships' personnel, or a simple misunderstanding of each other's culture. The outcome may be misunderstandings regarding responsibilities for safety and potentially unrealistic expectations of timescales to complete a task.

### **Design**

The design of access to ships' holds or other facilities used for the storage / transport of goods, notably bulk carriers, may create a risk of trapped hazardous atmosphere. This issue is addressed in some depth by the ILO Code of Practice. The ladder or other means of hold access are an area of particular concern – notably the so-called 'Australian ladders'.

### **Ambiguity of safe port warranty**

The degree, or depth, to which the safe port warranty is given effect is purely a contractual matter between ship owner and charterer. Such is the nature of the power balance between parties; it is not necessarily in the favour of the charterer. The owner may fear the pressure (risk) of losing the contract through asking questions in relation to the efficacy of the port(s) nominated by the charterer outweighs the potential risks involved. For the charterer, carrying out due diligence on a port is a potentially resource intensive activity for little reward if insurers remain content to cover the risk that the port is not safe, including time management.

## Good Practices

There is only marginal gain to be achieved through amendment of international regulation and standards as these are already comprehensive in scope and detail. However, some good practices may be considered are detailed in this section.

### **Establishing 'Protected Periods' in port operations**

As shown in Figure 3, there is a finite period between a ship berthing and commencing cargo operations, and subsequent completion of cargo operations and 'aweigh'. Both generate time pressure on ships' staff.

The establishment of 'protected periods' is an option to depressurise the situation. That is, ensure sufficient time is established in contract, be that between the ship and charterer or charterer and port / terminal, to prepare the ship for cargo operations. This should include time to complete the associated bureaucracy, and critically, to secure the ship for the forthcoming voyage before leaving the berth on completion of cargo operations, for example, complete ballasting and stability calculations, and secure the cargo in compliance with IMO standards etc. The aforementioned periods should be excluded from the port time/demurrage.

In some US ports handling containers, a formal joint 'walk round' of the deck is required prior to the cargo area being used by shore staff. This would appear to be a good model.

### **Improve understanding by shore staff of ships and shipboard responsibilities.**

Shore staff should be briefed, before boarding, on the ship and any hazards. They should also understand that they should not interfere with ships equipment and should

follow the instructions of officers and crew about entry to enclosed spaces

### **Tighten access to ship using agents to control 'appointments'.**

Access to ships has been tightened during the COVID epidemic. Ports are responsible for access to the berths. Gangway watches should prevent visitors boarding the ship unless they are on a list of approved visitors. The agent should control this list.

# Annex A

## **The PACE model and assertiveness**

Assertiveness from more junior team members could potentially lead to conflict if it is not used in the correct manner. However, if the assertiveness is graded, the risk of confrontation within a team can be minimised.

The PACE model is a way of using graded assertiveness in shipboard operations to help someone reconsider the instruction that they have given. It comprises of four steps, although it may not be necessary to use all of them. An example is given below for explanatory purposes.

### **PROBE For better understanding**

Chief Officer: OK, Bosun, please could you enter the freshwater tank and start cleaning it.

Third Officer: Chief, why are you asking the Bosun to enter the freshwater tank before we have tested the atmosphere inside?

Chief Officer: The tank only had fresh water in it, and it is now empty. It will be safe in there.

### **ALERT To the potential consequences if the instruction is carried out as intended.**

Third Officer: But if we don't test the atmosphere, there may not be sufficient oxygen and the Bosun may be unable to breathe.

Chief Officer: The tank doors have been open already for 12 hours for ventilation, so it should be fine, besides, we only have a couple of hours to finish this work. We need to hurry up.

### **CHALLENGE Offer an alternative solution.**

Third Officer: As per procedures, we should not enter any space before testing the atmosphere and completing the pre-entry checklist.

Chief Officer: Departure is in two hours; we don't have time and we need to get this tank cleaned and closed up before then. I don't want any delays.

### **ESCALATE Contact higher authority.**

Third Officer: OK, I don't think this is safe, I am going to contact the Master.