

Chapter 1

Before leaving home

Rules and regulations governing watchkeeping

Just about everything to do with a ship and the people who operate it is governed by a series of regulations. These are:

- International
- National
- Regional
- Local
- Industry sector
- Company.

Most international regulations are laid down by the IMO and are set out in conventions, sometimes called the pillars of the IMO. Conventions are usually known by their initials and the main ones are:

- SOLAS – International Convention for the Safety of Life at Sea
- STCW – Standards of Training, Certification and Watchkeeping
- MARPOL – International Convention for the Prevention of Pollution from Ships.

The main maritime regulation from the International Labour Organization (ILO) is the MLC – the Maritime Labour Convention 2006.

The national laws that apply to you are those of the flag state of the ship. The flag state incorporates into its national law those IMO conventions it has approved. From that stage it is compulsory to follow them. Each flag state periodically inspects its flagged vessels to confirm that they are adhering to all regulations.

Some coastal states, individually or regionally, pass legislation that applies to ships operating in their waters. These are generally aimed at protecting that country's resources. Local regulations also cover ports and may include rules governing the speed and anchoring of ships within port limits. Coastal states verify that international, regional and national laws are being followed by carrying out what are known as port state control (PSC) inspections.

Different sectors of the industry have also developed special rules governing safety and environmental protection. For example, tankers and terminals must comply with rules produced by the oil and gas industry.

Finally, companies issue rules to be followed by all employees operating their ships.

Your obligation to follow these rules is contained in your MLC contract of employment, and in some cases you must sign to confirm you will observe all these regulations. You will also sign the Master's Standing Orders (see later), which also require you to confirm that you will follow these rules.

To aid understanding of the many of the rules that cover bridge watchkeeping, companies draw up their own onboard bridge watchkeeping procedures in the safety management system (SMS) in simple format.

Where do you fit in?

Responsibility and authority on board ship can be divided into three main levels:

- Management
- Operational
- Support.

The management level consists of Master, CO, Chief and Second Engineers. On passenger ships the Staff Captain, Safety Officer, Staff Chief Engineer and Hotel Engineer are present in addition. The operational level consists of all other officers such as second and third officers, third and fourth engineers and, where carried, electrical officers. The support level is made up of the crew: ABs and OS on deck; motormen, fitters and oilers in the engine room; cook and messman in the galley.

Management level officers take higher level decisions and issue instructions to both the operational level officers and support level crew members. Operational level officers will take decisions within the guidelines provided by the SMS and management level instructions and issue instructions to the crew. Support level crew are responsible for carrying out instructions issued to them by management and operational level officers and reporting back to them when tasks are completed.

As an OOW you will have duties in port and at sea. During both your time on watch and outside your watchkeeping duties you will work with ratings and give them instructions or orders. You will also receive orders from senior officers and the Master. You will have to manage the activities of your subordinates and lead them in specific tasks. They will look to you for leadership.

The key navigation activities undertaken on the bridge during a watch at sea are:

- Collision avoidance
- Executing and monitoring the passage plan
- Steering the ship
- Lookout.

The person who issues all the engine and helm orders to ensure the safe conduct of the ship is said to have the con. When conditions are uncomplicated and the workload is light,

either during deepsea or coastal navigation, the OOW will have the con. As the workload increases, they will need the assistance of another officer; in most cases this will be the Master. The senior officer on the bridge will usually assume the con in such circumstances.

The con must never be confused with the word command. Masters never relinquish command of their vessels. They may hand over the con of the vessel to pilots, but they can retake the con at any time, especially if they are not satisfied with a pilot's performance.

**IMPORTANT**

Know and understand the difference between con and command.

Workload

The navigation workload may increase for various reasons. Navigation increases in complexity with the number and proximity of fixed navigation hazards such as shoal patches, offshore structures, routes near small islands and traffic separation schemes (TSS). There may be several turns to implement in the passage plan, or increased risk of collision from heavy traffic or concentrations of fishing vessels.

Meteorological conditions can have severe effects. The weather may deteriorate so you face reduced visibility. This will make small targets difficult to detect. A deterioration in the weather could also make it difficult to maintain course.

The navigation workload will also increase if you are responding to distress calls or participating in search and rescue (SAR).

There will be occasions when a pilot must be on board the ship and incorporated into the bridge team. Usually, they will be handed the con. The Master remains responsible for the safe navigation of the ship and will thus adopt an overall monitoring role – in some companies known as Director of Navigation.

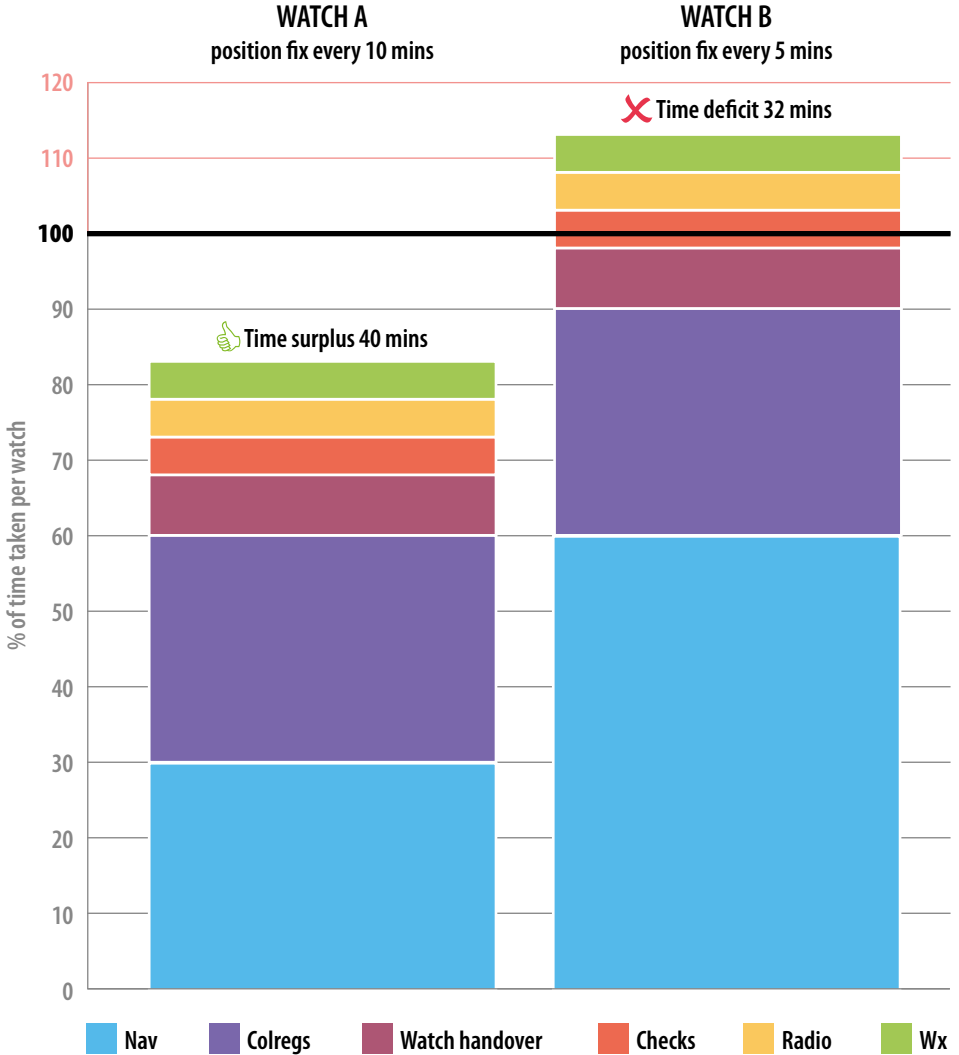
**REMEMBER**

The pilot may have the con but the Master keeps command.

Working conditions on the bridge can also increase workload if the OOW needs to move around the wheelhouse to plot the ship's position, read marine safety information (MSI) messages and view the GPS receiver etc. The workload will be less on modern ships with integrated systems and workstations with multiple functions. In the absence of an integrated bridge, situational awareness can be lost, especially at night, and assistance will be required to maintain a safe watch.

The table here shows how the workload can increase as a result of simple changes in the necessary activities. Consider the amount of time taken by plotting the ship's position every 10 minutes. If it takes 3 minutes for each fix from taking the first bearing to plotting on the chart, this adds up to 18 minutes every hour or 72 minutes every four-hour watch.

The left-hand column shows a surplus when the watchkeeper is on a four-hour watch undertaking many watchkeeping activities including applying Collision Regulations (Colregs), watch handover, equipment checks, GMDSS, weather observation (Wx) and forecasts. It also includes recording navigation activities and additional work. The right-hand column shows a 32-minute deficit, representing 13% of the watch.



Watchkeeping occupied time. Left-hand column shows a time surplus; right-hand column shows a time deficit

If the position must be fixed every 5 minutes, the task becomes more time-consuming, occupying 36 minutes every hour or 144 minutes every four-hour watch. The next table illustrates very clearly that the OOW will rapidly become overloaded and will not have enough time to attend to all tasks.

The surplus of 40 minutes in the first column has now become a deficit of 32 minutes, as shown in the second column. A similar situation would arise if the ship encountered heavy and continuous traffic that required more time to be dedicated to collision avoidance. As the workload reaches 100% then it is time to call for assistance or, as it is now termed, to increase the bridge watch condition (BWC).

Different navigation circumstances call for different BWC and the watchkeeping duties each person undertakes will also change as this table shows.

Navigation conditions	BWC	Director	Con	Collision avoidance	PaxPlan	Lookout	Helm
Deepsea	1		OOW	OOW	OOW	Rating	Auto
Deepsea	2		Master	Master	OOW	Rating	AB
Coastal 1	1		OOW	OOW	OOW	Rating	Auto
Coastal 2	2		Master	Master	OOW	Rating	AB
Coastal 3	3		Master	Master	Senior OOW	Rating	AB
Pilotage	P	Master	Pilot	OOW	OOW	Rating	AB

Basic navigation conditions and key duties

BWC 1

Applicable in deepsea and coastal waters with no circumstances leading to increased workload.

OOW

Undertakes the con, collision avoidance and passage plan execution and monitoring duties.

Lookout

Maintains a lookout and normal duties as outlined in this book.

BWC 2

Applicable in deepsea or coastal waters if a deterioration in the weather or visibility or encounters with dense traffic increases the workload.