For the bridge team it is the master who sets the tone. It is critical that every master understands this and considers how their behaviour affects the bridge team. Think about how you want your bridge team to act and how best you can encourage an open, supportive and professional team culture that includes all ranks and best assists you in doing your job well.

Bridge watchkeeping officers should think about their role within the team and what the master expects from them. The more junior you are the more remote and powerful a master might seem. Always remember that the master has experience of your role, make sure you assist them and always speak up if you think something is wrong or you are unsure.

It is in everyone's interest to ensure that the bridge watchkeepers and the master function as a team. Encourage the right kind of behaviour, get everyone talking and stick to the tried and trusted company routines. It is not all serious work though – teamwork can benefit greatly from on-board social activities.

As master you will be ultimately responsible for the safe navigation of your vessel, even when you are asleep. As a watchkeeping officer you are responsible for the safe navigation of the ship, both when on watch in open waters and when acting as part of the bridge team during coastal navigation and under pilotage.

UNDERSTANDING CULTURAL ISSUES

Every culture has its own typical set of behaviours. Sometimes cultural preferences can support team working and on other occasions they may undermine it. Knowing your own cultural preferences and those of your colleagues can help you become a better officer. There is a lot of material published on cultural preferences and you might benefit from doing some research on your own and your ship mates' cultural preferences.

The only way to overcome unsupportive cultural issues is to understand them in yourself and others, and to work to develop a professional way of acting and communicating when working as a team that reduces the likelihood of cultural preferences negatively affecting operations. This is also something that companies might explore during training ashore.

SUMMARY

If the master and bridge watch-keeping officers can function effectively as a team, then the risk of a vessel having a navigation incident is much reduced. Effective teams will also properly control their vessel while under pilotage. Ensure that any potentially unsupportive cultural issues are understood and appropriate allowances made.

Case Study 7

Scenario

A deep-draught vessel was navigating in a busy traffic-separation scheme. The bridge team consisted of the master, OOW and helmsman, all of whom were of different nationalities. The master took over the con from the OOW and changed course, thereby leaving the planned route, to avoid an area of high traffic density.

The new track was checked by the OOW, who was aware that there were areas on the new heading with draught restrictions for the vessel. The OOW asked the master if he was 'satisfied' with the new track, to which the master nodded. The vessel continued along its track towards the area with a draught restriction, the OOW remained silent, the master continued to focus on collision avoidance.

A few minutes later the vessel ran aground.

Questions

- What went wrong in this incident?
- How could the master have acted differently when communicating with the OOW?
- How could the OOW have acted differently when communicating with the master?
- Could these small changes in behaviour have avoided this incident?
- What cultural factors may have been in play to stop the OOW being more assertive?
- Do you need to work on your bridge team communications?

Chapter 8

SITUATIONAL AWARENESS

Many marine accident reports refer to a 'loss of situational awareness' as a contributory or causal factor. Perhaps the simplest definition of situational awareness is 'knowing what is going on around you'. If you do not know what is going on around you, both internal and external to a vessel, then you are not in a position to assess correctly the potential risks to the vessel and to execute a safe voyage.

It is obvious that to keep the ship safe you must know what is going on around you at all times. But sometimes there are barriers to situational awareness. The US Coast Guard identifies six barriers to situational awareness:

- perception based on faulty information processing
- excessive motivation
- complacency
- overload
- fatigue
- poor communications.

Although any of these barriers may contribute to an incident, common factors in many groundings and FFOs are overload, complacency, fatigue and poor communications.

INFORMATION OVERLOAD

Your brain is subject to many limitations. One such limitation is in relation to 'working memory'. Research has shown that the average person's working memory can only hold around seven separate pieces of information at any one time. In effect, when in complex navigational situations, a navigator may start to lose situational awareness due to the

volume of information that has to be processed.

This can easily be demonstrated by considering just some of the information that the master may have to process during an approach to a busy port

- monitor the pilot
- monitor tugs
- monitor traffic for collision-avoidance purposes (this in itself can be difficult and confusing)
- communicate with officers at mooring stations
- monitor VHF
- monitor the helmsman
- monitor engine movements
- monitor the vessel's position
- monitor effects of wind and tide on the vessel.

That is nine different things going on, which is two more than your working memory can cope with. And there are others.

Each of the points above will involve several separate pieces of information, so it is easy to see that the volume of information that needs to be taken into account when approaching port can far exceed the ability of any one individual to process the information properly and understand what is going on around them.

Information overload is why we use bridge teams when approaching port and in other critical navigational situations. A team approach spreads the information around and allows critical information to be filtered out and communicated to the master.

Often the master and bridge team can be distracted by unnecessary information coming from inside or outside a vessel, such as the cook asking about menus, or phone calls from the agent. Strict protocols in relation to access to the bridge and telephone communications during critical navigation periods should be in place. For example, mobile phones should not be used. You already have enough to think about.

COMPLACENCY

Complacency stems from the assumption and feeling that everything is under control, particularly when carrying out routine tasks such as entering a familiar port. Complacency will affect the level of vigilance employed by individuals. Think about how you feel when entering a new port for the first time. You will typically be more on edge, more vigilant and more ready to react than you would be when entering a familiar port.

However, the risks associated with entering a port for the first time and the tenth time do not change appreciably – it is only the team's perception of the risks that changes. Good procedures that are tightly controlled help to reduce the effects of complacency. Try to reassess the risks periodically when entering a familiar port; this helps to refresh your vigilance.

FATIGUE

Fatigue affects performance and judgement. Research suggests that mental fatigue affects working memory. This means that if fatigued you will have more difficulty than normal in processing information and knowing what is going on around you.

If extremely fatigued you may fall asleep and have zero situational awareness; this has been the cause of many groundings. Manage your fatigue in line with company policy (see Chapter 9).

POOR COMMUNICATION

Good communications with the bridge team, the pilot, the tugs and others such as vessel traffic services (VTS) or other vessels is vital to ensuring that you know what is going on around you. Poor communications means a reduction in your situational awareness. It is important that the bridge team trains together so that they are practised in understanding what is required of each individual and when and how to communicate.

SUMMARY

Situational awareness means knowing what is going on around you, which can be achieved if you do the following.

- Work in teams – teams are better able to handle the complexities of the situation and overcome the barriers to situational awareness than individuals.
- Train the bridge team – and encourage open communication.
- Follow strict procedures – especially when you are approaching port or a critical navigation area.
- Do not get distracted by unnecessary information – when on watch do not be distracted by carrying out administrative tasks.

Always be aware of a vessel's position in relation to its surroundings. It is your responsibility to keep your vessel safe.

Case Study 8

Scenario

A large container vessel is navigating in a busy traffic separation scheme (TSS) following the previously planned route. The bridge team consists of the master, chief officer and a helmsman. The bridge team is informed by VTS that three vessels will be entering the TSS from a nearby fairway and is asked to slow down.

The master, who had the con, misinterpreted the information from VTS and misidentified one of the vessels. He continued to monitor the traffic situation very closely visually and using ARPA. He took action to avoid collision which resulted in the vessel leaving the planned route.

The chief officer was monitoring ECDIS and was aware that the new track now had the vessel running towards a shallow area but was confident in the master's actions as they had sailed together several times and did not alert him to the potential danger. Warnings from VTS were also ignored.

The master continued to concentrate on collision avoidance until the vessel grounded.

Questions

- What factors lead to the master losing situational awareness in this incident?
- Was the master overloaded with information?
- Was effective use made of the bridge team?
- Were communications effective?
- Was complacency a factor?

(You can find the full report of the incident on which this case study is based on the UK Marine Accident Investigation Branch website: http://www.maib.gov.uk/publications/investigation_reports/2010/maersk_kendal.cfm)

Chapter 9

FATIGUE

If you are asleep on watch your ability to safely navigate the ship is **zero**. You have failed in your responsibility to keep the ship and the crew safe.

Fatigue is common at sea and arises from many causes including long hours, difficulties sleeping due to noise, vibration, and ship movement, and the interrupted rest/work patterns sometimes experienced.

Some level of fatigue is almost inevitable while at sea and usually the effects of fatigue can be minimised by adopting good working practices and adhering to hours-of-rest regulations.

As discussed in Chapter 8, fatigue can affect a seafarer's ability to process information and therefore their decision making. This has been cited as a factor in many incident reports.

Fatigue and fatigue management on board can be complex and many different strategies to manage fatigue can be adopted by seafarers and the company. It is important that company procedures are well designed and implemented to control fatigue.

The most hazardous form of fatigue for a vessel is the inability of the watchkeeping officer to stay awake. There have been numerous vessel groundings where ships have run straight into land at full sea speed as a direct result of the watch-keeping officer falling asleep on the bridge, with no lookout present, and the bridge navigation watch alarm system (BNWAS) disabled. The lessons from these incidents are many but it is clear that two simple steps would have prevented most of them.

- Never try to keep watch singlehandedly at night.
- Never disable the BNWAS at sea.