

Good situational awareness is about how you perceive the environment around you, how you understand it and how you are aware of the ways in which that environment will change with time. Good situational awareness is important to humans at all times, but it is especially important to mariners, and navigators in particular. Critical decisions for your own safety and the safety of the ship rely on your having good situational awareness.

For the best situational awareness, it is important to use all your senses: sight, hearing, smell, touch – even taste. Some would argue that good situational awareness also includes an elusive ‘sixth sense’, where a ‘gut feeling’ based on experience can offer real insights. Not all senses are used equally but they must all be taken into account to help us recognise, organise and understand our environment. One report suggests that 30% of our brain cortex is devoted to seeing, 8% to touch and 3% to hearing.

On an individual basis, all mariners should use all their senses all the time. Observing the weather will give an indication of predicted ship movement and risks. Hearing an odd sound may give an indication of cargo coming loose – the absence of sound has certainly woken me from sleep (ship blackout)! Smells can warn of burning or leaks, while even taste can be used to identify a contaminated water tank.

On the bridge, situational awareness is crucial for safe navigation and collision avoidance. Sight is used both externally (out the window) and internally (Radar, ECDIS, etc.) and is backed up by the sounds of alarms and VHF and the feel of vibrations, for example when running into shallow water. Changes in smell can indicate problems with cargo.

No ‘I’ in TEAM

When things get busy, it may not be possible for one person to maintain good situational awareness alone. There are just too many things to take account of. Instead, the task must be shared among the team. It may be necessary to have people focused solely on lookout, navigation, communication and collision avoidance. In these cases, all members of the bridge team need to communicate effectively so the officer in charge can maintain overall situational awareness. For example, if the ship is picking up a pilot or approaching a dock, is someone monitoring the other sectors to ensure there are no surprises?

Many accident reports cite loss of situational awareness as the root cause. Good situational awareness is not a state of being; it is an activity that needs to be focused on, discussed, and even trained for. It has many enemies, including boredom, distraction and overload. Most ships ban personal mobile phones for this reason.

Situational awareness is a very human activity involving perception, comprehension and projection. Technology can aid us by offering additional sources of information. However, it can also become confusing if too much emphasis is placed on adding more and more technology for its own sake. Today’s ship’s bridge bristles with more information sources than ever before. Automatic plotting, weather/tidal overlays, MSI and even decision support systems for collision avoidance all aim to help navigators improve their situational awareness. Sometimes they do, but sometimes they can distract.

The amount of data and information will only increase, with some ships already using tools like Lidar, sonar, infrared, low light

optics and Augmented Reality (AR) to try to ‘improve’ mariners’ situational awareness. The challenge for the industry will be to develop these systems so they are fit for purpose, and then ensure mariners are well trained in their use and understand their strengths and weaknesses.

Check your understanding

It is important for navigators to focus on ensuring good situational awareness, and to recognise signs of its loss in themselves and others. One positive indicator is that team members are cross-checking systems with other systems or observations. What might this look like in practice?

Do members of the bridge team share information and try to ensure that they have a shared ‘mental image’? For example, when a lookout observes a light, does the OOW check the radar (or vice versa)?

Does everyone try to anticipate risk and compare ideas about contingency plans?

Do bridge officers monitor the weather against forecasts and try to anticipate how a change in the weather may affect other departments on board and the seaworthiness of the vessel?

Situational awareness, and the lack of it, is not limited to the maritime sector. Most car accidents can be traced to poor situational awareness and most industries have some sort of guidance on best practice. However, good situational awareness is vitally important to mariners in all departments for all tasks, even when asleep.

Take any opportunity to consider how you can increase your own situational awareness, how you can check your understanding of your environment and risks, compare event forecasts with reality and reflect on any differences you may find.

SITUATIONAL AWARENESS IS A VERY HUMAN ACTIVITY INVOLVING PERCEPTION, COMPREHENSION AND PROJECTION



TAKE 10

Ten top tips for improving and enhancing your situational awareness on board

1

Most important

Situational awareness is absolutely critical to navigators. You need to be aware of your environment at all times, understand it and then act correctly.

2

All available means

Use all available means, all your senses (eyes, ears, touch, nose etc...) and all available tools (Radar, AIS, GNSS, radio, etc...)

3

Always question

Always seek to test your understanding of the environment by cross checking. Try never to trust just one sense or tool.

4

Share with others

Share your observations and interpretations with others in your team, never assume that they have seen something as well, or that your interpretation is the best.

5

Overburdening

It is easy to become distracted and lose situational awareness on the bridge of a ship. Know how to spot it in yourself and others and have a plan to deal with it.

6

Under burdening

It is possible to lose situational awareness when things become quiet. Find ways to keep yourself focused and alert. Unforeseen events at sea can be devastating!

7

Fake news

Not all information is correct. Chart data can be inaccurate, AIS data can be wrong and, in this cyber age, misinformation can be given.

8

Be aware on board

Situational awareness is just as important off the bridge. A good mariner is always alert to unexpected smells, vibrations, noises, and ship movements. Learn to trust your sixth sense and don't ignore the sense that something just isn't right.

9

Learn from others

Poor situational awareness is often cited in accident investigation reports. Learn from these reports, whether they are from The Nautical Institute in MARS, other industry schemes such as Maritime CHIRP, or national reports such as the UK MAIB, US NTSB or Australia's ATSB.

10

Mentoring

Situational awareness can be continually improved and taught to others. Work with your team to improve your skills. Experience is key to making sense of your environment and making good decisions.

LIKE OUR TOP 10 TIPS?

Find more in your own language at www.nautinst.org/NavInspire

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