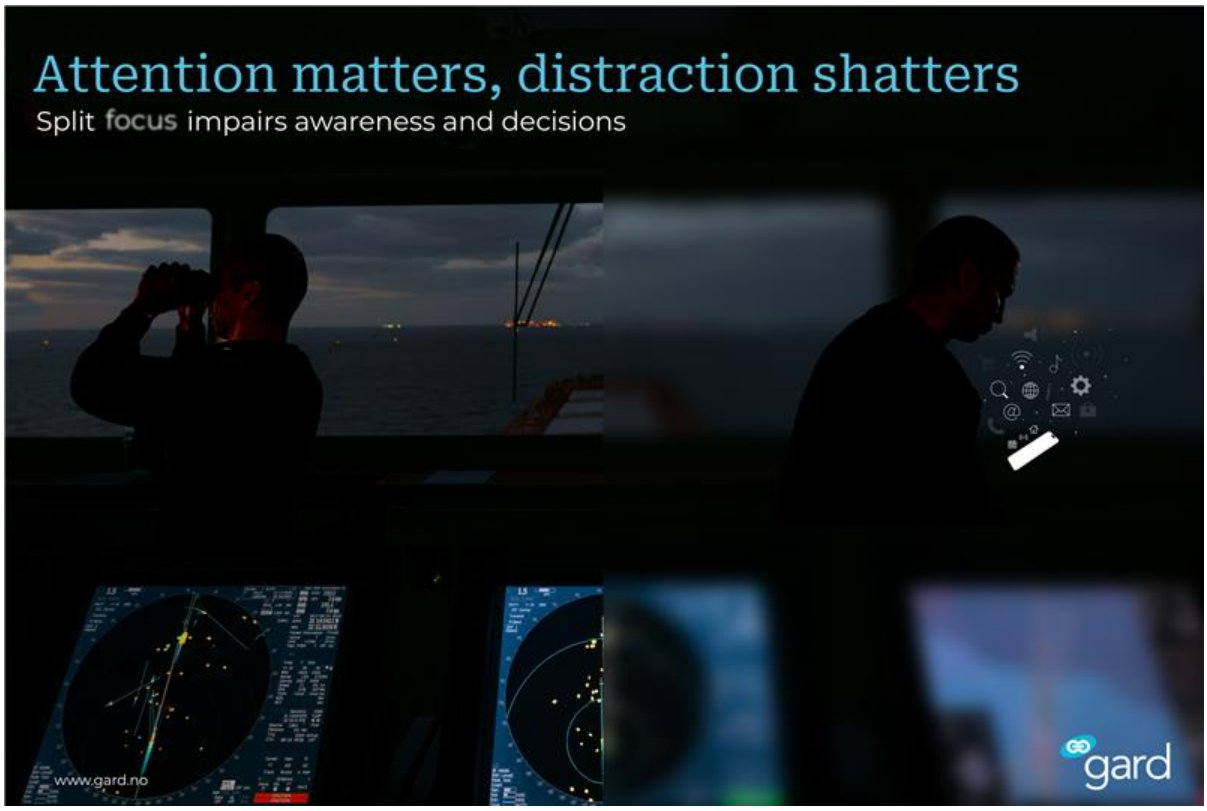

From habit to hazard: Personal electronic devices can be a workplace distraction

Seafarers regularly perform tasks requiring constant situational awareness. This is crucial for both the vessel and crew safety. While increased digitalization and internet connectivity on ships have improved crew welfare, they also risk diverting the attention away from essential operational duties.

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Constant use of personal devices

Despite being known risks factors in safety-critical industries like shipping, the constant use of mobile phones and other personal devices persists due to ingrained connectivity habits, the urge for instant responses, and the mistaken belief that individuals can effectively multitask while operating personal devices and performing critical duties. The psychological pull of notifications can be particularly strong, making it difficult for individuals to resist checking their devices.

This persistent behaviour is underscored by the numerous maritime accidents over the years linked to mobile devices, such as collisions, groundings, personnel injuries, pollution, and even tragic fatalities, some of which are mentioned below.

It's also crucial to note that the safety risks associated with personal electronic devices extend beyond the ship's crew. Ship pilots in many ports frequently use mobile phones and portable devices for essential navigation and real-time communication with tugs and shore authorities. While these devices can be deemed essential for their duties in some instances, a detour towards personal use can also occur, as highlighted in the third case study below.

Case study 1

In a fatal incident on a ro-ro freight ferry, the officer was focused on his mobile phone whilst standing on the stern ramp, when he was fatally injured after being struck by a semi-trailer. The investigation revealed that by engaging in a conversation on his phone, the officer significantly increased his risk of being struck by a moving vehicle due to a loss of situational awareness.

Case study 2

During a collision incident, the officer on one of the vessels altered the course at a planned waypoint without checking the surrounding traffic. This resulted in a collision with another vessel, which subsequently capsized, leading to the tragic loss of its two crew members. The investigation found, among other things, that the officer was distracted throughout his watch by the continual use of a tablet computer.

Case study 3

A vessel under pilotage ran aground when outbound from a port. The subsequent investigation identified the pilot's significant distraction from extensive personal mobile phone use prior to the incident as the primary cause. This preoccupation with calls, text messages, and drafting emails severely impaired the pilot's situational awareness, directly leading to the critical navigational error, according to the investigation report , alongside other contributing factors.

The myth of multi-tasking

The notion that we can effectively multitask, for instance, by using our mobile devices while simultaneously performing a critical task like watchkeeping on a ship's bridge, is largely a misconception. Although it may seem like we are being productive by handling emails, social media, and various apps on one hand, whilst maintaining a navigation watch on the other, our brains are not processing these activities in parallel. Instead, we rapidly shift our focus between them, a phenomenon called **task switching** . This division of attention, rather than genuinely multitasking, distracts from the primary task and ultimately reduces our ability to engage fully and effectively with either activity.

Undesirable outcomes of frequent task switching

Switching between tasks that are cognitively demanding, i.e. require a significant amount of mental effort, such as using a mobile phone while navigating, consumes significant mental energy. Both activities require focused attention, working memory, and decision-making. This constant mental juggling of demanding activities overburdens our cognitive resources, diminishing our concentration and capacity to process each task effectively. Consequently, this impacts our situational awareness and slows down our reaction times, especially in dynamic environments.

Key learning from studies on mobile phone use when driving

Numerous studies have explored how phone use, both handheld and hands-free, affects driver behaviour. These findings, some of which are mentioned below, offer valuable insights for seafarers, highlighting the potential risks of phone use while performing critical tasks on board, akin to the dangers observed when driving. Professionals in other safety-critical sectors, such as aviation and healthcare, have also extensively studied and recognized the significant risks associated with distraction from personal electronic devices during critical operational tasks. Understanding these parallels is crucial to raising the awareness among seafarers about the potential for similar impairments and risks to safety when using phones during shipboard operations.

Slower to react

Worse than legal intoxication: Drivers using mobile phones (handheld or handsfree) had 30% slower reaction times than drivers impaired by alcohol at a 0.08 blood alcohol concentration, which is the legal intoxication limit in many countries.

Prolonged night vision impairment after mobile phone use

It typically takes about 5 minutes for your eyes to adjust to night driving after using a lit phone screen, and it can take up to 30 minutes for full adaptation, allowing you to see objects in the dark. This is especially important to consider for crew members on watch who might use their phones at night.

Sending or reading a text takes your eyes off the road for 5 seconds. At 55 mph (88 kph), that is like driving the length of an entire football field with your eyes closed.

Increased risk of accidents: a tangible consequence

The combination of slowed reaction times, impaired vision, cognitive distraction, and reduced vehicle control directly translates to a significantly higher risk of being involved in an accident. Studies consistently demonstrate a substantial increase in collision rates for drivers using mobile phones compared to those who are not.

Cognitive tunnelling: conversations hijack focus

Drivers are particularly distracted by a conversation which encourages them to visualize what they are talking about. This type of conversations led to 'cognitive tunnelling' and deteriorated driving performance, suggesting that it is the conversation itself that distracts the driver from the driving task.

Key recommendations

For further information on this subject, shipowners, managers, and seafarers should consult the 'Guidelines for the management of distraction-causing devices on board ships' , a collaborative effort by BIMCO, IMAREST, The Nautical Institute and InterManager. Below we reiterate the risk control options discussed in these guidelines and circulars published by various governmental bodies.

• Raising awareness among seafarers of how personal electronic devices can lead to distraction is vital. By comprehending the mechanisms and potential dangers, they are more likely to avoid using these devices during operational periods.

• Restricting/prohibiting the use of personal distraction-causing devices by key personnel in key working spaces.

• Restricting the use of personal distraction-causing devices during working hours, irrespective of location.

• Restricting the use of such devices by non-key personnel in key working spaces. This can limit the distraction caused to key personnel.

• Limiting the use of these devices for business during working hours and from working spaces.

• Looking into the onboard communication systems setup and optimising it for crew members in order to limit distractions.

• Strategic placing of computers in key working spaces to ensure that working with these devices is kept within a safe limit.

• To prevent bridge team distraction during critical port approaches, restrict the use of mobile devices in designated zones like pilotage waters, and refer to this in the vessel's voyage plan. Areas like the mooring station, cargo control room, engine control room can also be designated as such.

While establishing procedures and processes, and raising awareness among the crew is important, it is crucial to emphasize that this alone may not be enough. Companies must also prioritize raising crew awareness regarding the distracting potential of these devices and verify that the established procedures are being followed.

Useful links:

• UK MCA's
MGN 638 (M+F)
on 'The fatal dangers of mobile phones and other personal devices when working'

• AMSA:
Use of mobile phones—advisory notice

• Gibraltar Maritime Administration's
Shipping Guidance Notice – 091
on 'Use of Mobile Phones & other Personal Devices'

• Isle of Man Ship Registry's
Technical Advisory 006-20
on 'Mobile Devices and Other Distractions in The Workplace'

• USCG's
Findings of Concern 018-22
'Distracted Operations'

• Code of Safe Working Practices
(2024 edition), Section 3.15

A Loss Prevention poster on this topic is now available. It aims to raise awareness of safety issues and preventing accidents on board ships. You can find all our Loss Prevention posters on our dedicated Loss Prevention posters webpage .