

RISK ALERT



NAVIGATION SAFETY-LOOKOUT



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Introduction

The Club regularly experiences claims arising from collision or other navigational error, some of them large, where failure to maintain a proper and effective lookout often features as a proximate or contributing cause. The risk associated with the lack of an effective lookout, is a subject that has been covered in many publications in the past and particularly by the Club in the loss prevention DVD “Collision Course” and its associated series of Posters on [Collision Avoidance](#). This Risk Alert intends to revisit the importance of maintaining a proper **all-round lookout**.

COLREGS – Rule 5 - Lookout

“Every vessel shall **at all times** maintain a proper look-out by **sight and hearing** as well as by **all available means** appropriate in the prevailing circumstances and conditions so as to make a full appraisal of the situation and of the



risk of collision.

As the COLREGS state in: Part B, Section 1, Rule 5 is applicable to vessels in all conditions of visibility.

Considerations

Situational awareness is key.

Sight and hearing are generally the most relied upon **physical senses** in the context of lookout. However, dependent on the circumstances of a particular situation, other senses might also add value to the quality of lookout - for example a change to the vessel's motions in response to sea state may be indicative of an approach to shallower water, and a fall in temperature or increase in wind speed may herald an approaching squall which could impair visibility.

Everyday workplace distractions such as the operation of communications equipment, email systems, navigational protocols such as completion of logs, record keeping, correction of charts and publications, routine testing and maintenance of bridge equipment etc., can all be detrimental to undertaking safe navigational duties and impair the quality of lookout. Other distractions could include the use of mobile phones, personal computers, domestic radios, CD players, television sets etc.

Watch composition should have due consideration to the anticipated navigation situation including factors such as weather, visibility, traffic density, proximity of dangers to navigation, traffic separation schemes, design and layout of the bridge, arcs of visibility and limitations of the fitted navigational aids. Additional assistance should be available immediately if needed, especially if there should be a single watchkeeper on the bridge, with the company SMS and Master's Standing orders being very clear in this regard.

Consideration also needs to be given to the **location** of the lookout and whether there are blind or shadow sector(s) from cranes, the minimum visibility line, the view in the horizontal and vertical planes or other factors such as weather which could impact the effectiveness of the lookout. The lookout may therefore need to regularly move to a different observation point or utilise alternative equipment to fulfil the requirements of maintaining an effective and proper lookout.

Remember to **look astern** - you may be the privileged vessel, but collision avoidance is your responsibility too.

The correct use of all available **instruments** such as binoculars, azimuth ring/mirror, sextant or inputs from electronic instruments (**aids**) such as the anemometer, echo sounder, radars and cross referencing with the charts and available publications can assist in making an accurate and full appraisal of the situation.

Understanding concepts such as opening and closing bearings of a target, relative speed and aspect can add further valuable insight into how a navigational situation is developing.

Time permitting, **accuracy** of an observation should also be **verified** through cross checks with other watchkeeper(s) or alternative navigational aids.

Correct identification of land-based objects and navigation marks is essential, particularly when close to shore (through characteristics such as lights - colour and phase, shapes, sounds, signals, colour codes, etc) and is helpful in making a full and quick appraisal of the vessel's position. A similar understanding of the characteristics of signals such as lights, shapes, sounds, pennants etc displayed by proximate vessels is helpful when considering parameters such as safe speed and safe distance before enacting the appropriate manoeuvre.

An accurate assessment of a vessel's position requires preparation and study combined with an adequate time for **overlap** between the watchkeepers at the handover of a watch to allow for **information exchange** between watch keepers, to study charts and key features expected to be encountered during the upcoming watch, adjusting to night vision and for the incoming watchkeepers to be fully appraised of the navigational situation before taking over of the watch. Watchkeepers before formally handing over the watch, should ensure that the relieving watch keepers are suitably rested, fit and confident to take over the watch.

"If in doubt – Call Master"

Due consideration should be given to the peripheral aspects of watchkeeping such as **watch composition**, **fatigue management** (adequate rest hours before a watch) and Drug & Alcohol policy as these could all be contributory to the efficient performance of watchkeeping duties. Watchkeepers should be encouraged to highlight any issues that they consider may limit their ability to maintain effective and optimum performance. Watchkeepers should also be educated on the risks of **self-induced fatigue** and its impact on the performance of their watchkeeping duties and the overall safety of their colleagues and the vessel itself. **Mental well-being** touches all aspects of a seafarer's life at sea, particularly at times of critical activity such as Navigational lookout.

Collateral benefits of a good lookout

Good lookout can be an effective tool for mitigating a wide range of risks not directly related to routine navigation activity, such as:

- Early detection and mitigation of piracy
- Other security threats (such as from suspicious activities near the vessel).
- Stowaways
- Man overboard (MOB) and recovery
- Search and Rescue (SAR) operations. The success of SAR operations is often reliant upon a good lookout ability (in relation to very hard to detect targets).
- Pollution incidents

- Fire on board - Early detection of fire outside of areas normally monitored by fire detection systems.

Case study

The following case extracts are intended only to draw attention to, and highlight, the interesting aspects of possible poor watch-keeping and appraisal of a developing situation, where a proper lookout could have possibly averted the incident. It is not the Club's intent to make any comment or judgement on the causation as determined by the investigators or the presumption of any liability.

Case 1 - Landfall during ocean passage

Bulk carrier MV Oliva went aground on Nightingale Island (Tristan da Cunha) on 16 March 2011 while on loaded passage from Santos, Brazil to China.



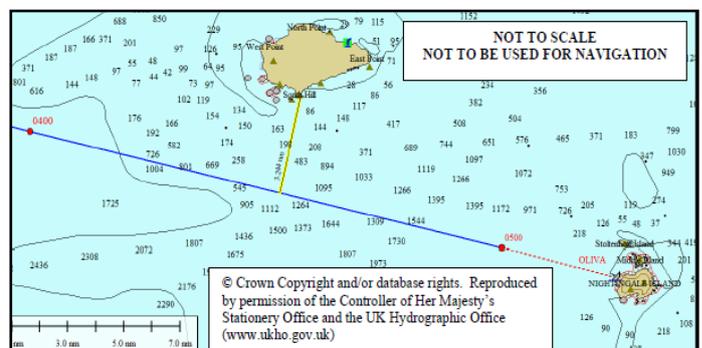
TM 14/2012 – MV Oliva (aground)

At 0340, 2/O calls C/O for 0400 watch.

Just after 0400, the 2/O noticed a **large defined echo on the radar screen**, about five nautical miles, passing clear down vessel's port side and **assumed it to be rain clouds or an iceberg**; believing the vessel to be within iceberg limits according to the routing chart he has seen.

C/O arrives on the bridge at 0420.

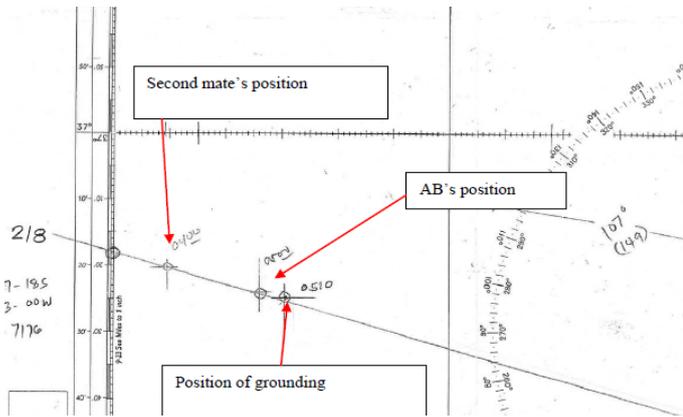
2/O hands over to the C/O **advising him the course is set on autopilot and leaving the bridge at about 0425 without telling the C/O of the radar echoes as they had passed clear of the vessel, neither did he tell him that the vessel would be passing close to land during his watch.**



TM 14/2012 – Extract of BA Chart 1769 showing vessel's position

The vessel passed **Inaccessible Island to port within 3.25 nm** at about 0430, at which time Nightingale Island would have been right ahead approx. 9.9 nm. **At about the same time the AB reported a white light forward of the port beam, which he assumed was a fishing vessel. The C/O, now sitting in the pilot chair, responded that he**

could see it but did not get up to investigate.



TM 14/2012 – Extract of plotting sheet in use

Just after 0500, the C/O noted that the AB had plotted a position on the chart. Returning to the pilot chair he noticed a large echo on the radar screen, very close ahead, assumed it was a heavy storm cloud and thereafter felt the impact of the vessel running aground.

MARINE SAFETY INVESTIGATION REPORT NO. 14/2012, TRANSPORT MALT

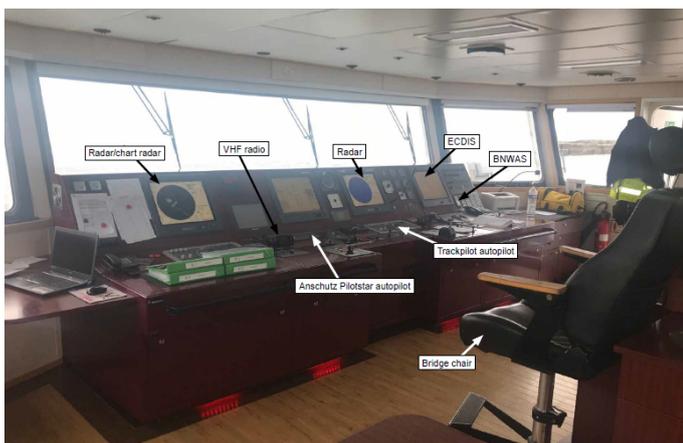
Case 2 – Distracted by a Mobile Phone

General cargo vessel *Priscilla* ran aground on Pentland Skerries in the eastern entrance of Pentland Firth, Scotland on 18 July 2



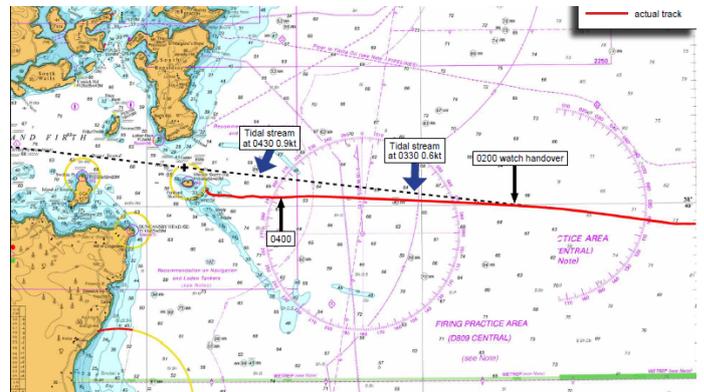
MAIB 12/2018 – Priscilla (aground)

Approaching Pentland Firth, *Priscilla* was set to the south of the planned track, but this was not observed because the OOW failed to monitor the vessel's progress for about 2 hours; instead, he sat in the bridge chair and watched videos



MAIB 12/2018 – Priscilla Bridge

The OOW responded to verbal warnings of the danger ahead from both the Orkney Vessel Traffic Services Officer and the Shetland Coastguard Operations Centre. However, the action taken in response to these warnings was not effective and indicated that he did not have adequate situational awareness to understand the gravity of the vessels position and turn away from danger.



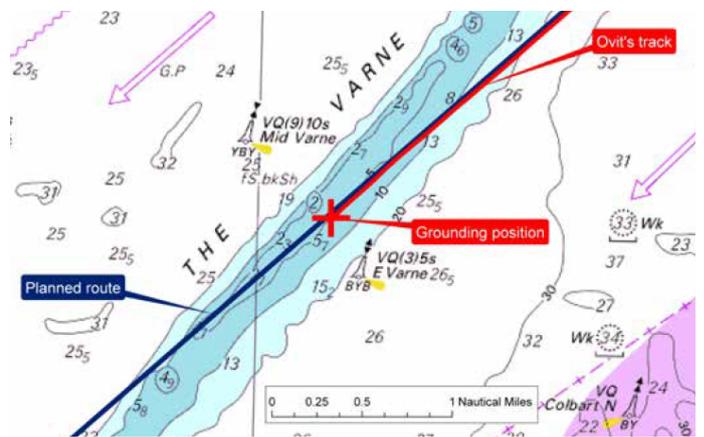
MAIB 12/2018 – Planned and actual track prior to grounding

The vessel was badly damaged and remained aground for several days until the cargo had been removed and sufficient tugs were available to haul it off the rocks.

MARINE ACCIDENT INVESTIGATION BRANCH (MAIB) REPORT NO 12/2019

Case 3 – Passage over shallow patch - Hazard lights seen by lookout but not understood / reported

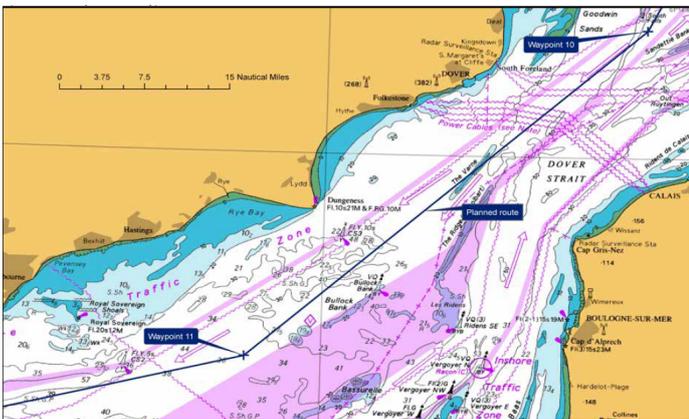
At 0434 hours on 18 September 2013 Maltese flag Chemical Tanker *OVIT* ran aground on the Varne Bank in the Dover Strait while on a loaded passage from Rotterdam, Netherlands, to Brindisi, Italy



MAIB 24/2014 – Ovitt Grounding position – The Varne

The intended route through the Dover Strait was prepared using the ship's ECDIS by an inexperienced and unsupervised junior officer; the plan was not checked by the master before departure or by the officer of the watch at the start of his watch – route passed directly over the Varne Bank.

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MAIB 24/2014 – Detail of Dover Strait passage plan

As *OVIT* approached the Varne Bank, the deck cadet, using binoculars, became aware of flashing white lights ahead. He did not identify the lights or report the sighting to the OOW.



MAIB 24/2014 – OOW (moored at berth)

At 0411, Channel Navigation Information Service (CNIS) detected the dangerous approach, however the CNIS operator (who was later found to be unqualified and unsupervised) was distracted and ‘authorised’ *OVIT*’s approach to the Varne Bank in the CNIS monitoring system.

At approximately 0417, *OVIT* passed close by the **Varne Light Float** (A 40.5 m (133 ft) steel lightship with an all-round red flashing light, at a height of 12m (39 feet) having a range of 15 nautical miles) and from 0432 the vessels speed reduced until she stopped on the Varne Bank at 0434.

Ref: MARINE ACCIDENT INVESTIGATION BRANCH (MAIB) Report 24/2014

Case 4 – Collision in daytime despite good visibility

18 May 2019 - Maltese flag 18,873GT bulk carrier *Persenk* on passage from Istanbul to Ashdod, Israel, was involved in a collision with the 1,972GT general cargo vessel *Ahmet Can* in the Sea of Marmara



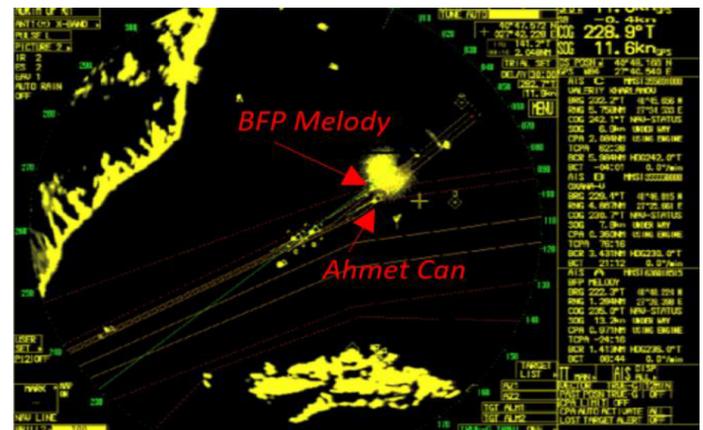
TM 12/2020 – Damage to Ahmet Can stern & Minor damage to Persenk bow (inset)

The collision occurred in the afternoon and in good visibility. At the time of the collision, both vessels were in sight of one another, making way in the Turkish Straits Traffic Separation Scheme. They were proceeding in the general direction of traffic flow for that traffic lane, albeit on a converging course, and *Persenk* was gradually drawing ahead of *Ahmet Can*. Although the weather was fine and clear it appears that the watchkeepers on *Persenk* and *Ahmet Can* failed to discern the developing close quarters situation until *Ahmet Can* was very close and right ahead.



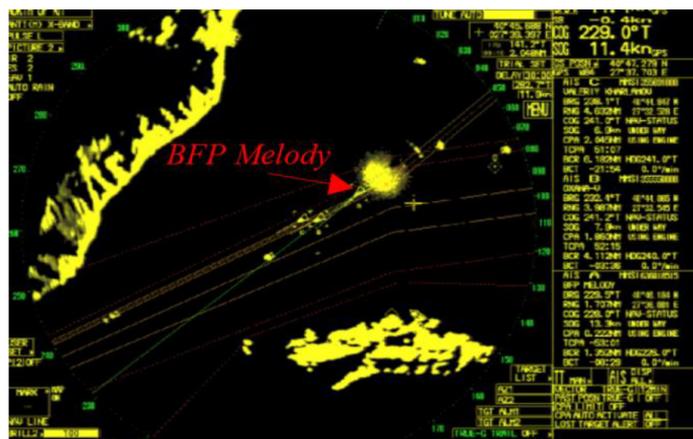
TM 12/2020 – ECDIS playback showing a segment of passage plan in the Sea of Marmara

Ahmet Can along with other vessels in the vicinity had **not been acquired** and displayed and no navigational data appeared on *Persenk*’s X-band radar which was set on 12nm range (S-band X-band not being used - kept on stand-by). There was no attempt to scale down the display to a suitable range and the cursor was not moved



TM 12/2020 – Radar image showing traffic situation at 1300

As the vessels drew closer, the radar echo for *Ahmet Can*, became masked by the clutter (anticlutter had not been adjusted).



TM 12/2020 – Radar image showing traffic situation at 1315 – Ahmet Can echo concealed by clutter

The OOW and look-out stated that at 1324, *Persenk* and *Ahmet Can* were on parallel courses, and *Ahmet Can*, without any warning or signal, altered her course to starboard. The OOW immediately called the master and a minute later, the bulbous bow of *Persenk* struck *Ahmet Can* on her transom.

MARINE SAFETY INVESTIGATION REPORT NO. 12/2020, TRANSPORT MALTA

Note: As no information could be obtained from the owners and crew of MV *Ahmet Can*, the safety investigation report was not comprehensive.

MGN 137 (M+F) - Look-out During Periods of Darkness and Restricted Visibility

Case 5 – Near Miss between Ro-Ro Ferry and Submarine – “Mark one eyeball”

6 November 2018 - UK flag 130,285 GT ro-ro ferry *Stena Superfast VII* on passage from Belfast to Cairnryan, was involved in a close quarter situation with a Nuclear-powered submarine in the North Channel Ferry Route between Northern Ireland and Scotland.



MAIB 13/2020 - Submarines periscope seen from bridge of *Stena Superfast VII*

Whilst on a scheduled passage from Belfast to Cairnryan the *Stena Superfast VII*, making approx. 21kts, made course alterations to allow for marine traffic that was being encountered. At about 1247, having cleared the traffic, and some 2nm to starboard of the planned track the OOW altered course to regain his track at the next waypoint.

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At 1254 the AB lookout saw and immediately reported to the OOW a submarines periscope, at close range on the port bow crossing from port to starboard. Quickly assessing the situation, and determining that there was imminent risk of collision, the OOW had the AB adopt hand steering and altered course to port.

The AB's alertness in spotting and promptly reporting the periscope to the OOW, and the subsequent decisive actions of the OOW avoided what post-incident analysis indicated could have resulted in a serious risk of collision.

MARINE ACCIDENT INVESTIGATION BRANCH (MAIB) Report 13/2020

Conclusions:

Technological advances have, generally, improved the **electronic solutions** (software and hardware) available today that can be used as aids for navigation.

Reliability and redundancy of the available navigation aids has also significantly improved over the past few decades. However, occasionally, aids to navigation can be vulnerable to errors and should therefore be used as aids to supplement and support the more traditional cross-referencing techniques (comparing the compasses and aligning the repeaters before taking bearings, use of opening/closing bearings, parallel indexing, etc).

Correct use of “all available means” requires a full appreciation and understanding of the limitations of the equipment in use which should then prompt exploring other methods/measures of maintaining a lookout to mitigate any potential lack of information.

Should physical observations, such as those from sight and hearing, indicate a conflict with information provided by navigation equipment such as ECDIS, time permitting, due regard should be given to ascertaining the possible factors that could affect the accuracy of these aids and, if in doubt, OOW should call/consult with the Master as per his standing orders.

The Masters standing orders should be clear and concise in setting out circumstances under which the master expects to be called, affording adequate time for the Master to fully assess any developing situation and take over or advise on appropriate and timely mitigating actions.

Fatigue, stress and **mental health** are more and more frequently being identified as one of the root causes of maritime casualties and incidents. Managing rest hours, manning levels, self-discipline and basic etiquette such as good time keeping and professional courtesy towards colleagues can help alleviate some of these risks.

Information exchange at the change of watch and assurance of smooth transition between watchkeepers is very important.

Distraction due to other activities performed on bridge watch (not directly related to ongoing navigation) and complacency, coupled with the navigator's over-reliance on aids to navigation “to do the job” have resulted in avoidable situations.

As technology aided incidents are becoming more and more common it has become necessary to constantly reinforce the importance of using the aids to navigation to complement and improve the OOW's situational awareness and not create a false sense of security, detrimental to the safety of navigation.

The adage “**practice makes perfect**” and “**if you don't use it you will lose it**” could not be truer where it comes to honing navigational skills or when passing your knowledge to the next generation of navigators and watchkeepers. Ship managers are reminded of the need to consider a structured approach when planning training and conducting evaluation of ship staff competence and training needs (exposure hours, scenarios, conditions, watch level, responsibility etc).

We are only looking at the dawn of Artificial Intelligence (AI) application in the sphere of navigation, we are not there yet.



**A safe lookout is in your hands.
Look OUT – Look AROUND!!**

Suggested References

[Convention on the International Regulations for Preventing Collisions at Sea, 1972 \(COLREGs\)](#)

[The 2010 Manila Amendments to the Seafarers' Training, Certification and Watchkeeping \(STCW\) Code – PART A / CHAPTER VIII - Section A-VIII/2 \(Watchkeeping arrangements and principles to be observed\)](#)

[MGN 315 \(M\) - Keeping a Safe Navigational Watch on Merchant Vessels](#)

[MGN 137 \(M+F\) - Look-out During Periods of Darkness and Restricted Visibility](#)

[MGN 202 \(M+F\) - Navigation in Fog](#)

[AMSA 06/2020 – Reducing the risk of collisions at sea](#)

[Steamship Poster series:- “Collision Avoidance”](#)

[Steamship Collision Course DVD](#)