Case study for onboard safety meeting
Have you checked your ECDIS lately?

Please read the below story of an incident. Keep our company's standards and procedures in mind while reading to compare with the actions of the crew below as we will discuss the factors which led to the incident occurring.

A cargo vessel was just finished loading. The upcoming passage between Antwerp and Valetta, Malta was prepared by the newly promoted third officer. He was not given any guidance by the Master on how the passage should be prepared and no reference was made to previous, similar passages undertaken by the vessel. Even though the ISM procedures for voyage planning and use of ECDIS were in place, they were not followed.

When the passage plan was completed, the third officer checked the route by scrolling ahead and zooming in on each of the route’s legs in order to identify the navigational dangers. When completing the passage plan checklist he ticked ‘no’ against the line ‘Are there any routing hazards?’ In addition, he ticked the response ‘yes’ on the question ‘Have the team members been made aware of any defective equipment?’ because the audible alarm was not working. Given that the intended route passed over a sandbank, with depths less than the ship's draught, the ECDIS check-route page should have indicated that that leg was unsafe. In fact it did so but officers interpreted the ‘No alarms’ notation to mean that the route was safe. What the notation actually indicated was that no audible alarm could be sounded. The third officer's work was not supervised and there was no pre-departure brief by the deck officers. The vessel departed after a very hectic loading operation.

10 hours into the voyage, at 0030, the chief officer took the duty as OOW. He did not check the route ahead to identify potential navigational hazards nor the navigational marks likely to be encountered during his watch so he was unaware that the ship's intended track passed over a 7nm long sandbank. He was also unaware of the cardinal marks marking the danger. He was relaxed as he had sailed this voyage before. He was joined by the deck cadet who was the assigned lookout. The vessel was following an autopilot controlled heading at a speed of 12. The OOW selected the scale on the ECDIS display that closely aligned with the 12 nautical miles range scale set on the radar display. He then sat down in the port bridge chair where he had a direct view of both displays.

As the vessel approached the sandbank, the deck cadet, who was standing on the starboard side of the bridge and using binoculars, became aware of flashing white lights ahead. He did not report the sighting to the OOW because the look-out thought that the OOW had seen it.

The OOW remained seated in the chair in front of the ECDIS and radar displays. However, his alignment of the scale set on the ECDIS with the range scale on the adjacent radar display resulted in the ECDIS being on a scale of 1:151712, which was totally inappropriate for the area. Consequently, safety critical information was not displayed. He showed no curiosity about the ‘jail bars’ that appeared on the display to indicate that something was wrong and did not manually load a better scale chart – which may not have been necessary if the charts auto load feature had been activated.

At 0223, the vessel passed close by the cardinal mark. The ship's speed then slowly reduced until the vessel stopped aground. It was another 15 minutes before the OOW realised that the vessel was aground and another 11 minutes before the grounding was reported to the local coastguard.

Have you checked your ECDIS lately?
How to improve by lessons learnt

What really happened? Based on the story above; here are some items and key points to discuss:

What is the operational status of your ECDIS? Have the different alarms been identified? Other functions should also have ensured that at least a visual alarm was triggered in event of a less than required under keel clearance, such as the safety contour setting; unfortunately this appears not to have been adjusted since the EDCIS was installed and was still set at the manufacturer’s default setting of 30 meters. What is your system’s default setting at start-up? And what are your procedures of setting the safety contours?

The safety contour should have been set to 13.5 metres, the ECDIS would have set this to next nearest safety contour, 20 metres. This would have made a significant difference to what was shown on the ECDIS screen. What are the settings on board your vessel when it comes to Safety contours and safe depth? What do your procedures say about these important system settings? Is there a clear understanding on the difference between safety contours and safety depths?

The auto load feature, which would load the most appropriate chart for the conditions, was switched off. The result was that most appropriate chart installed was not used in the navigation. Do we understand the accuracy of the data in the different ENCs? What is the auto load feature? How can we tell that the most appropriate chart is loaded? How can we tell that we have an ENC loaded?

In addition to the above ECDIS related discussion points you can also discuss the keywords below in order to determine onboard areas/topics for increased awareness:

- The danger of complacency among watchkeepers
- Pre-departure briefing including walk-through and approval of passage plan
- Watch handover – What is the difference after ECDIS was fitted?
- What is the role of the look-out – and how should he/she be trained?
- Onboard contingency response in case of a grounding. What is our procedure?

1. What factors contributed to the incident in the above case?

2. Risk Assessment: Could some of the factors identified be present on board your ship?
   (How frequent could they be present? How severe could it be if they are present?)

3. In the risk transfer zone (yellow and red), what would you suggest as measures to control the risk? Any additional barriers that could be introduced?