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Grounding and violation of regulations

The NMD refers to previous Safety Messages, SM No. 7/2001 and SM 11/2004, which also deal with accidents where the officer in charge of the navigational watch has fallen asleep.

The provisions relating to hours of rest are crucial for the fitness of the officer in charge of the navigational watch. In the NMD Safety Message No. 11-2004 we remind that the vessel's journey and time in port shall be so planned that those who will be on watch at least get the hours of rest prescribed by the minimum requirements of the STCW Convention. Failure to comply with the provisions relating to hours of rest is a serious violation of the safety provisions and may lead to detention and violation fines.

One should be aware of the increased accident risk that night work represents, and the watchkeeping should be so organized that the impact is minimal. It is important that the night watchman has access to healthy food and drink choices. Good sleep is important for the ability to recover, and may somewhat compensate for a shorter sleep period. It is important to note that there are vast individual differences in how well we handle shift work with short rest periods, and that the need for sleep and wakefulness change with age.

Watchkeeping arrangement

A number of research studies state that a 6-6 watchkeeping arrangement accumulates a sleep deficit, and that this type of arrangement is unfavourable with regard to the health of the seafarer and the risk of marine accidents. A number of Norwegian companies are trying out other watchkeeping arrangements which will make it easier to get rest. One example is an 8-4-4-8 watchkeeping arrangement with distinct day and night shifts. Companies are encouraged to consider other solutions that are in accordance with the Watchkeeping Regulations and the provisions relating to hours of rest for their ships. A regular circadian rhythm should be maintained as far as possible to prevent sleep deprivation and fatigue.

Navigation and lookout

According to the Watchkeeping Regulations and the Manning Regulations, it is the responsibility of the company and the master to ensure that watchkeeping arrangements are adequate for maintaining a safe navigational watch.

According to the principles to be observed in keeping a navigational watch (Watchkeeping Regulations, Part 3-1), a proper lookout shall be maintained at all times. As a rule, there shall be two persons on the bridge both during the day and at night. Under certain circumstances, the officer in charge of the navigational watch may be the sole lookout in daylight based on risk assessment results.

APPENDIX 1

Description of a grounding in 2008

Shortly before handing over the watch at 0800 hours, the mate falls asleep. He sits in the pilot chair and has just finished a private phone call. The visibility is good and the sea is calm. The waters narrow. The chief engineer officer who has served as lookout during the night has left the bridge 20 minutes earlier to perform his regular tasks on board. The mate wakes up when the vessel grounds.

Casual factors

The direct cause of the grounding was that the navigator in charge of the watch fell asleep. However, a thorough follow-up of this accident revealed a number of underlying causes that largely can be related to organizational circumstances

Hours of rest schedule and watchkeeping arrangement

A review of the crew's hours of rest schedule showed that the five persons who were on board, with the exception of the apprentice, worked a 6-6 shift. Conversations with the crew and a review of the deck log clearly indicated that there was no correlation between the hours of rest schedule and the activity on board.

The day before the grounding the vessel had been docked for a longer period, and the entire crew had used the occasion to "break" the watch to get some extra sleep. Therefore, the crew claimed that they found it very surprising that the mate had fallen asleep.

The mate himself explained that he fell asleep when he was on watch. Although he had had trouble sleeping from 2000 hours the night before the grounding, he felt awake when he started the watch at 0200 hours. He believed that there were both positive and negative aspects of breaking the watch like this. He did not deny that this may have affected the sleep rhythm.

Research on shift arrangements has shown that working a 6-6 shift may work fine for some people, provided that the circadian rhythm is maintained. Although a few hours of extra sleep may seem like a good solution to avoid fatigue, this could disrupt the established sleep rhythm of the personnel and have the opposite effect of what was intended.

A shift rhythm with only 6 hours of rest is in itself a major challenge for many people. Research shows vast individual differences with regard to how well we handle shift work after little sleep. If the time off is filled with daily activities or more social activities, the amount of sleep during a 24-hour period will be minimal. Many also have trouble resting and falling asleep during the time off. In the long run this will have an impact on safety and health. Research shows that more than 16 waking hours or sleep duration of less than 6 hours will increase the accident risk.

The navigation

A review of the deck log showed that position-fixing was not performed during the voyage. Also, it had not been registered when the lookout was posted on the bridge or when the fire and inspection rounds were conducted. There was little information on position-fixing and steering courses. Weather and sea data was lacking both for this voyage and previous voyages. It was mostly dates and times of departures and arrivals that were recorded. Electronic chart display was used as the main navigational aid. The positions were not checked and logged, and other navigational aids were not used. This indicates a passive attitude to the navigation of the ship, and was not in accordance with the company's governing documents.

Look-out

The vessel operated with one navigator on watch. The practice on board was that the engineer officer (on watch from 0200 hours to 0800 hours) or the able-bodied seaman (on watch from 2000 hours to 0200) served as lookout. According to the company's governing documents, the person in charge of the watch had to ensure that fire rounds etc. were conducted between 2200 hours and 0600 hours. With only two persons on watch during the night, this meant that the company implied that the navigator in charge of the watch had to be the sole lookout for periods during the night.

This is not in accordance with the Watchkeeping Regulations. According to the Regulations, the rule is that there shall be two persons on the bridge at all times, both during the day and at night. The officer in charge of the navigational watch may be the sole lookout during daylight hours if a thorough risk assessment indicates that this is acceptable. The assessment shall include waters, view, traffic and other factors that may affect the risk.

The grounding referred to in this case occurred in daylight. However, the vessel was heading for narrow waters, and it may be discussed whether it was acceptable to let the lookout leave the bridge.

Safety culture

The hours of rest schedule was not kept in accordance with regulations. Major deficiencies relating to the keeping of the log book were discovered, and the planning of the voyage was inadequate. The manning on the bridge was not in accordance with regulations. The findings of the investigation indicate a poor safety culture on board the vessel. The Norwegian Maritime Directorate can not see that the company has followed-up its obligations to ensure compliance with regulations.

Alertness

There are several factors indicating that the mate's alertness was reduced at the time of the accident. The mate was an experienced sailor who was confident in his work. The vessel was engaged on a regular service, in familiar waters. The visibility was good and the weather conditions were good. The watch drew to a close, and the last thing he remembered was that he had finished a private phone call. Little around him indicated that he had to be particularly attentive. He was alone on the bridge and fell asleep in the chair. If the engineer officer had been there, the accident may have been avoided. An assessment of the time of the phone call and the grounding in the form of AIS data indicates that the mate had been sleeping for more than 10 minutes when the vessel run aground.

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