

MISMANAGEMENT OF MEDICAL CONDITION ON BOARD

A TRAGIC INCIDENT UNFOLDED ON BOARD A BULK CARRIER, CLAIMING THE LIFE OF A CADET WHO HAD SPENT THREE MONTHS ON BOARD. THE 34-YEAR-OLD TRAGICALLY LOST HIS LIFE AFTER INHALING HYDROCARBON FUMES EMITTED FROM A BUNKER TANK VENT WHILE THE TANKS WERE BEING HEATED. THE SHIP'S MANAGEMENT TEAM INITIALLY MISJUDGED THE SEVERITY OF THE CADET'S ILLNESS, LEADING TO A CRITICAL DELAY IN PROVIDING THE NECESSARY MEDICAL TREATMENT AND ADVICE.

WHAT HAPPENED

On 12 November 2022, aboard a bulk carrier off the western coast of Africa, a sequence of events unfolded that tragically led to the death of the deck cadet (DC). At the time of the incident, the ship was carrying approximately 46,000 MT of Nickel Ore, with the no. 5 cargo hold loaded to an estimated 47%. The ship had several Heavy Fuel Oil (HFO) tanks, including the no. 2 HFO tank (port), which emitted vapours from vents with approximately 170 MT low Sulphur fuel (0.49% of Sulphur content). The ship's chief officer (CO) tasked the fitter with conducting repairs in the no. 5 cargo hold, and both began preparations around 0800 hours. They noticed a strong smell of fumes emanating from a vent associated with the no. 2 HFO tank port.



FIGURE 1 VIEW OF THE FORWARD VENT FOR NO.2 HFO TANK (PORT)
SOURCE MARINE SAFETY INVESTIGATION REPORT - TSIB - MOT - SINGAPORE

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WHAT HAPPENED (CONTINUED)

The fitter assured the DC that the repair wouldn't take long, and the work began once the bosun opened the hatch cover, taking approximately 15 to 20 minutes. The DC assisted the fitter by passing equipment into the cargo hold while standing near the HFO tank vent on the main deck. Both exited the cargo hold around 1115 hours, with the DC expressing discomfort.

The following day, the DC reported feeling unwell to the CO, mentioning a headache and attributing it to inhaling fumes from the HFO tank vent the previous day. The CO advised rest and informed the ship's master. The DC's condition gradually worsened over the next few days, marked by reduced food consumption and diarrhoea.

Efforts were made to provide medical advice through communication with the crewing manager and a medical professional. The advice was to place the DC on a light diet. On 20 November, while the ship was sailing near the Cape of Good Hope, the master advised the DC to remain in his cabin due to choppy seas.

On 24 November 2022, citing that the DC had been experiencing dizziness, vomiting and diarrhoea, the master contacted the crewing manager to discuss the possibility of signing off the DC at Mauritius (ETA - 28 November 2022). It was decided that the second officer should accompany the DC's sign-off, while the company-initiated plans for the DC to seek medical attention in Mauritius. Attempts were made to encourage the DC to consume food and receive medical advice, but his condition continued to deteriorate.

On 25 November, the DC's condition deteriorated significantly, and he was found unresponsive by another deck cadet (DC 2) tasked with monitoring his condition every two hours. CPR was initiated, but the DC did not show any vital signs, and he was declared deceased.

BRITANNIA COMMENTARY ON INCIDENT ON NEXT PAGE

BRITANNIA COMMENTARY ON INCIDENT

THE FOLLOWING COMMENTARY IS PART OF THE CASE STUDY MATERIAL AND HAS BEEN PREPARED TO CONSIDER SOME OF THE KEY ISSUES. THIS WILL SUPPORT REFLECTIVE LEARNING AND ENABLE DISCUSSION OF SOME OF THE CONTRIBUTORY FACTORS AND LESSONS LEARNED WITH PARTICULAR REFERENCE TO BEST PRACTICES.

THIS TRAGIC INCIDENT HIGHLIGHTS THE NEED FOR EFFECTIVE SAFETY MEASURES, CREW TRAINING AND AWARENESS OF POTENTIAL HEALTH HAZARDS ON BOARD SHIPS. IT ALSO SERVES AS A REMINDER OF THE IMPORTANCE OF TIMELY MEDICAL INTERVENTION AND COMMUNICATION WITH MEDICAL PROFESSIONALS IN THE EVENT OF CREW MEMBER'S HEALTH ISSUES AT SEA.

EXPERIENCE OF THE CREW MEMBER

The DC had been on board for three months, and this was his first time on a ship. He had received familiarisation training as per the Safety Management System (SMS). However, there was no specific familiarisation training on the risks associated with shipboard operations for cadets or trainees who were on their first ship. Due to his lack of experience and inadequate supervision while performing his duties, the DC was not aware of the risks associated with inhaling fumes from HFO. Although he found it uncomfortable to breathe the fumes, his inexperience left him unsure of what steps to take, such as seeking an alternative method to complete the task.

NATURE OF WORK

The fitter was tasked by the chief officer to carry out some repair work inside no.5 cargo hold and the fitter prepared the items needed for the repair with the DC. When the bosun opened the hatch cover, both the fitter and the DC were waiting near no. 2 HFO tank port and noticed a strong smell of fumes from the vent of HFO tank. The DC lowered equipment required for repair into the hold standing on the raised steps aft of the HFO tank vent.

It is unclear from the casualty investigation report whether a permit-to-work system was followed and if a permit was issued for the Hot Work conducted in the cargo hold. Typically, such a job requires a risk assessment to identify associated risks, necessary safeguards, the appointment of a responsible officer not involved in the Hot Work, a work plan meeting to identify personnel, equipment, PPE, a detailed operation plan, a toolbox meeting at the work site, and a cease-task system to halt work if it becomes unsafe.

If the above procedures had been followed, they would have identified the DC's lack of experience as a risk. The DC should have accompanied another crew member with suitable experience. A responsible officer monitoring safety at the work site would have noticed the proximity of where equipment was lowered into the cargo hold to the bunker vent, which was venting fumes. A cease-task system or a similar mechanism could have allowed the fitter and DC to abort the task when they both sensed strong fumes and select an alternative access point to lower equipment into the hold.

A typical SMS may prohibit deck cadets and trainees from performing such tasks as part of Hot Work, without guidance and supervision from experienced crew members.

MEDICAL CARE PROVIDED

Both the master and the chief officer were trained under International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW) Section A-VI/4. The chief officer also served as the on board medical officer according to the Company SMS. Despite telling the chief officer that he had a headache from fume inhalation, the DC's vital signs were not taken, and the seriousness of the illness caused by inhaling fumes from HFO tanks went unnoticed, with his illness being mistaken for seasickness. The DC's condition was not considered life-threatening by the on board senior management team.

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BRITANNIA COMMENTARY ON INCIDENT (CONTINUED)

until very late, specifically one day before his passing.

The Company's SMS also provided information on how to manage medical situations, including seeking guidance from the International Medical Guide for Ships (IMGS) and obtaining radio medical advice from sources such as International Radio Medical Centres (CIRM). There was no evidence of such advice being sought, except for seeking the opinion of a Company doctor using WeChat communication, which was inadequate and incomplete.

Furthermore, as per the Safety Data Sheet (SDS) for HFO, it states that in case of lung aspiration, medical advice should be sought immediately. Seeking medical advice from CIRM would have ensured systematic reporting and monitoring of the DC's vital signs, allowing for the identification of the serious nature of his illness and any deterioration. Additionally, a medical report form was required to be completed and sent to the crewing department. The investigation team noted that a medical report form was submitted to the crew department after the incident on 25 November 2022. This reflects on the poor level of medical care DC received.

An autopsy conducted on 30 November 2022, in Mauritius determined the cause of death was asphyxia due to the aspiration of stomach contents. Another deck cadet (DC2) was tasked with monitoring the condition of the DC every two hours, whereas an officer with advanced medical training should have been assigned to this role, and a journal of vital signs should have been maintained.

The master and chief officer tried to ensure the deck cadet's well-being by relieving him of duty, allowing him to rest in the cabin, providing meals they deemed best for the deck cadet, and monitoring his condition. However, they failed to conduct necessary clinical and systematic health assessments, as stipulated by their training and procedures for handling medical cases according to the Safety Management System (SMS). They also did not seek radio medical advice or redirect the ship to a suitable port for further treatment. This omission led to the deterioration of the deck cadet's condition, and despite their best intentions, the deck cadet ultimately passed away.

GEOGRAPHY AND DEVIATION

At the time of the incident, the ship was heading southeast along the west coast of Africa. Between 13 November and 24 November 2022 the ship had passed ports in Angola, Namibia, and South Africa, where medical facilities were available. The investigation report on the casualty suggested that the master did not consider deviation before 24 November because the condition of the DC did not appear to be life-threatening to the master.