

Safety Alert

Number: 21-07

Published: 23/04/2021

Subject: Tank Corrosion

What Happened / Narrative

The Chief Engineer was carrying out daily tank sounding routines in the engine room when he observed an unexpected rise in liquid level. The frequency of soundings was increased and monitored closely for 24hrs. The next day, the Chief Engineer informed the Master that the tank volume had increased by approximately 200 litres and requested permission to open the tank for investigation. A risk assessment and permit to work for dangerous space entry was actioned and the tank opened for inspection later that day.

Upon investigation, the Chief Engineer discovered a pinhole leak in the structure beneath the sounding pipe, allowing salt water to enter the space from outside the tank. The Master informed the Duty Technical Manager, and the vessel was sent to a layby berth for repairs.

Why Did it Happen / Cause

An initial investigation was carried out by ship staff which concluded the striking plate at the bottom of the sounding pipe was missing. This allowed the brass weight to repeatedly strike the steelwork, damaging the paint coating and exposing the steelwork to corrosion.

A further investigation was carried out by the onshore management team which included a review of the evidence submitted. The tank space was inspected six months previously and the photographs filed in TM Master alongside the work report. The previous photographs did not give any indication that the level of corrosion experienced today could have occurred naturally within the last six months. After cleaning the tank, additional photographs revealed exposed bright and shiny steelwork – which could only be caused by an acid attack.

The investigation concluded the following:

- The tank had been duly inspected and maintained in accordance with company procedure.
- The brass weight of the sounding tape had damaged the paint coating on the striking plate and steelwork below.
- A corrosive chemical had been incorrectly disposed of and introduced to the tank, accelerating the corrosion process.
- The acid may have become trapped under bubbles of damaged paint, allowing concentrated corrosion over the short time.
- The combination of exposed steelwork and caustic solution destroyed the striking plate and steelwork below.

Corrective Actions Taken / Recommendations

An effective repair was carried out onboard in collaboration with third party welders and divers.

All crew are reminded of the importance of correct chemical handling – including safe disposal. On board a vessel, there are many different chemicals used in its operation, some of these chemicals pose a serious health risk with some being extremely caustic. Therefore, it's important that we all use these chemicals in the intended manner and do not abuse them.

The MSDS (Material Safety Data Sheet) sheets are provided on board the vessel for your safety and give crew all the information about the chemical, such as the physical and chemical properties, hazard identification, handling and storage and disposal considerations.

Vessels must ensure that after using caustic chemicals, the contents/container are disposed of to an authorized hazardous or special waste collection point in accordance with any local regulation.

Should you be unsure where or how to dispose of any chemical, please contact the office, or waste disposal provider on the approved supplier list.

The information contained within this Safety Alert and the associated MSF web site is provided in good faith for the benefit of our members and does not constitute and is not intended to constitute professional advice or any form of formal representation on behalf of any MSF member or officer. The text as provided by submitting organisations may be amended to ensure that it is brief, informative and readable but will as far as reasonably practicable remain as per the intent of the original submission. For the avoidance of doubt, no liability whatsoever shall be attached to any guidance, recommendation or statement contained therein. Contents should be reviewed individually by recipients who will determine relevance to their own operations.

Safety Alert

Photographs / Supporting Information



The information contained within this Safety Alert and the associated MSF web site is provided in good faith for the benefit of our members and does not constitute and is not intended to constitute professional advice or any form of formal representation on behalf of any MSF member or officer. The text as provided by submitting organisations may be amended to ensure that it is brief, informative and readable but will as far as reasonably practicable remain as per the intent of the original submission. For the avoidance of doubt, no liability whatsoever shall be attached to any guidance, recommendation or statement contained therein. Contents should be reviewed individually by recipients who will determine relevance to their own operations.