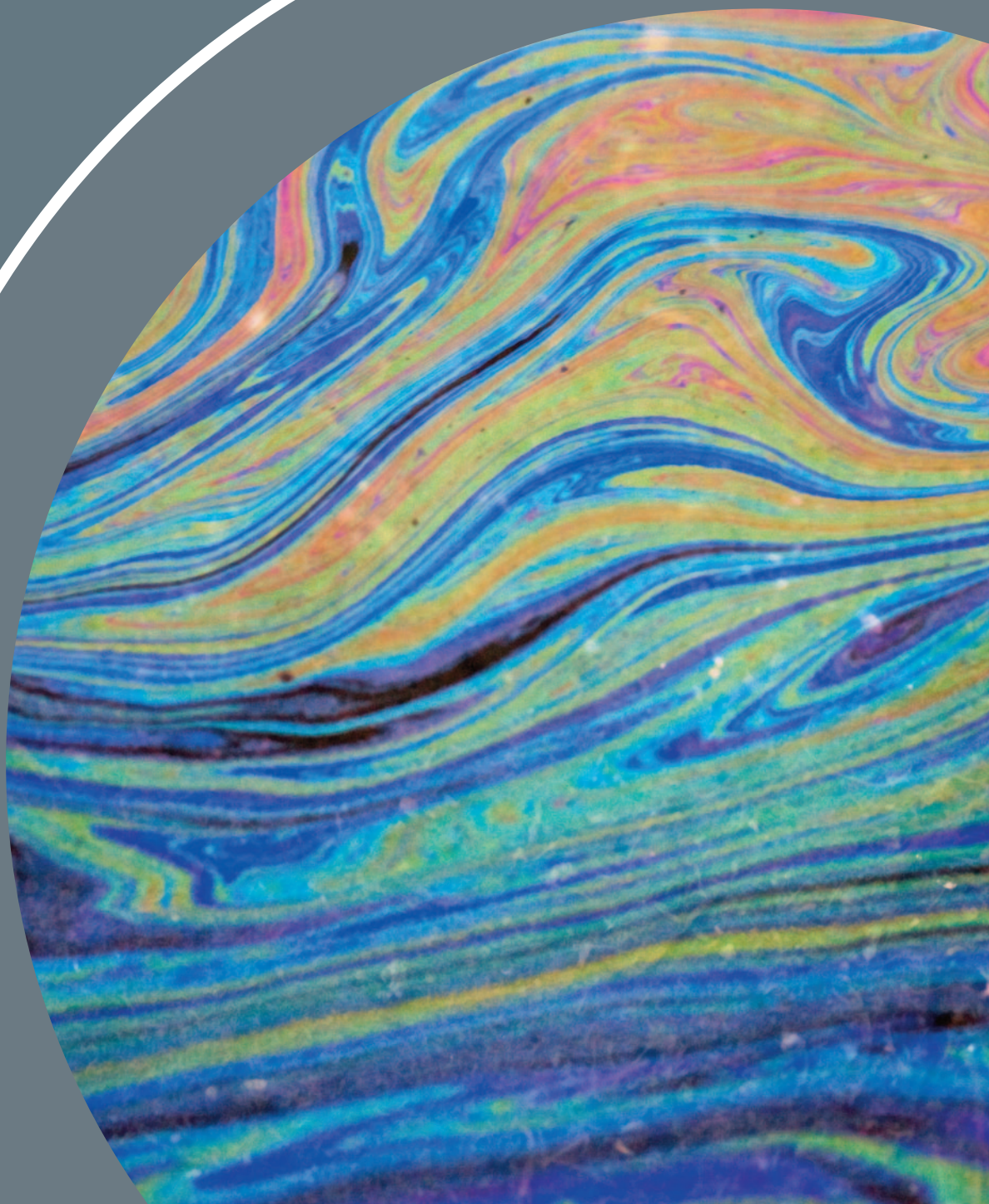
THE SWEDISH CLUB CASEBOOK

13

Pollution



13.1 Corroded pipe caused oil spill

The 15 year-old bulk carrier was having its third special survey completed in dry-dock. As usual there were also many other jobs being carried out at the time. One of these jobs was to replace a section of a de-aeration pipe in the cargo hold.

The Chief Officer had discovered during a cargo hold inspection a month earlier, that the de-aeration pipe seemed to be corroded. This pipe led from the sea chest, passing through the cargo hold and then through a heavy fuel oil (HFO) tank and finally out through the vessel's shell plate.

It was decided that the section of the pipe in the cargo hold should be replaced and that crossbars should also be fitted for protection against damage during cargo handling.

The Chief Officer did not think it was necessary to inspect the section of the pipe inside the HFO tank. There was no scheduled inspection of the HFO tanks during dry-docking.

This section of the pipe was replaced by the shipyard without any problems and the vessel left the shipyard after repairs were completed and sailed in ballast condition to the loading port.

At discharge port

The vessel arrived in the morning at the discharge port where it was planned that it would receive bunker. A bunker barge came alongside and the First Engineer completed the bunkering checklist. About an hour later the bunkering began. At this time the cargo operation had also commenced.

At lunchtime, one of the ABs discovered oil in the water, and he advised the OOW.

The OOW, who was in the cargo office, came out on deck to see what was happening. After a couple of minutes the OOW could see oil trickling down the side of the hull.

He went into the cargo office and made a general announcement about the pollution and on what side of the vessel the oil was escaping. Shortly after this he called the Master and informed him about the oil pollution. The Master informed the coast guard, harbour authorities and the DPA about the incident.

At this time the duty engineer also called the OOW and asked what was happening. The OOW told him about the pollution and asked if the bunkering had been stopped, to which the engineer said it had not. The OOW told him to stop bunkering immediately.

HFO tank leaking

Straight after this the OOW ran out on deck again and the Master and Chief Engineer were already there. Oil was still trickling down the side even after bunkering had stopped. The Chief Engineer realised that the oil was escaping from the HFO tank, which was being bunkered and told the duty engineer to transfer all bunker from that tank into another empty HFO tank. When almost the entire bunker had been transferred the trickling ceased.

Shortly afterwards the harbour authorities arrived and placed oil booms and absorption pads around the vessel. The booms unfortunately did not prevent

all of the oil from escaping. There were two barriers, with the outer barrier consisting of oil booms, and the inner consisting of absorption pads.

When all the bunker had been transferred and the tank was safe for entry, it was decided to inspect the HFO tank. The crew entered the HFO tank and discovered that the de-aeration pipe was fractured.

The crew made temporary repairs to the pipe, but permanent repairs had to be completed at a shipyard.

Damage during repair work

It was discovered that the pipe in the HFO tank had been fractured when the section in the cargo hold had been replaced causing stress to the section in the HFO tank.

This caused HFO to enter the fractured section causing pollution.

What can we learn?

- All pipes on board the vessel should be included in the PMS and inspected at regular intervals to ensure there is no significant corrosion.
- There is a risk when a section of a pipe is replaced that this will cause fractures on the sections that have not been replaced.
- Pressure testing should be carried out immediately after work has been carried out on any pipework. The thickness of the entire pipe should be measured.
- It is strongly advised that no pipes other than fuel pipes pass through bunker tanks. Other media passing through fuel tanks can lead to contamination of the bunker as well as contamination of other media.
- If a pipe with seawater passes through a HFO tank it should be recognised that this is a pipe that is likely to corrode faster than a pipe that is not passing through a heated tank with HFO.
- If having pipes passing through the HFO tank is unavoidable, then these pipes should have an increased pipe thickness and should also have some kind of surface protection e.g. hot dip galvanizing or coated on the waterside.

Glossary of common industry abbreviations

Term	Meaning
AB	Able seaman
AIS	Automatic identification system
ARPA	Automatic radar plotting aid
COLREGS	International Regulations for Preventing Collisions at Sea
COSWP	Code of Safe Working Practices for Merchant Seafarers
CPA	Closest point of approach
CSM	Cargo securing manual
ECDIS	Electronic chart display information system
ETA	Estimated time of arrival
GM	Metacentric height
GPS	Global positioning system
IHO	International Hydrographic Organization
IMDG Code	International Maritime Dangerous Goods Code
IMO	International Maritime Organization
IMSBC Code	International Maritime Solid Bulk Cargoes Code
ISM	International Safety Management Code
JRCC	Joint rescue coordination centre
MOU	Memorandum of understanding
NM	Nautical miles
OOW	Officer on watch
PA	Public address system
PMS	Planned maintenance system
SMS	Safety management system
SSAS	Ship security alert system
SSP	Ship security plan
STS	Ship-to-ship (transfer)
TML	Transportable moisture limit
UHF	Ultra high frequency (radio)
VDR	Voyage data recorder
VHF	Very high frequency (radio)
VTS	Vessel traffic serice

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