

Providing learning through confidential reports – an international cooperative scheme for improving safety

MARS 201006

Improperly repacked liferafts

Official report; edited from Swedish Transport Agency website: www.transportstyrelsen.se

It has become evident that some unscrupulous contractors servicing ships' inflatable liferafts are repacking them improperly – and this can prevent them from operating in an emergency. In order to save on the effort needed to thread the entire length of the painter line through the bushing's central hole, these contractors are cutting the rubber bushing located between the two outer containers radially, and conveniently pushing the painter line through the gap.

The main function of the bushing is to allow the unimpeded streaming of the painter line. When attempting to launch and inflate an improperly repacked liferaft, the painter line may come out of the bushing and get jammed between the two halves of the outer container, which prevents it from being fully drawn out. The liferaft will then become impossible to inflate, either automatically or manually.



▲ Figure 1: Example of an intact bushing



▲ Figure 2: Example of a radially cut bushing

There have been a number of reported incidents where inflatable liferafts have failed to inflate in emergencies, including one in Swedish waters, which led to the loss of three lives. It is thought that a cut bushing could have been a contributing factor in these occurrences.

Mariners are advised to inspect the entry point of the liferaft's painter line on the outer container closely. If a bushing appears cut or damaged, the last servicing contractor should be contacted and immediate arrangements made to have the bushing renewed and the liferaft repacked properly.

MARS 201007

Inert gas system failure

After arriving at the discharge terminal, a pre-discharge inspection consisting of the International Safety Guide for Oil Tankers and Terminals (ISGOTT) ship-shore checklist and a pre-discharge conference were completed prior to commencing line clearance and discharge of gasoline feedstock. The inspection and conference recorded that the equipment was functional and the vessel was operationally ready for discharge. Line clearance was undertaken for a 45-minute period during which the inert gas system (IGS) was not run. Shortly after completion of the line clearance, the terminal indicated that they were ready for discharge. The chief officer then started the IGS and the main cargo discharge pump sequentially. However, the HSWL (high scrubber water level) alarm of the IGS failed, causing the scrubber water pump to trip.

While attempting to trouble-shoot, the officer informed the terminal of this unsafe situation. At the same time, port state control officers boarded the vessel to confirm the oxygen (O₂) level in the tank's atmosphere. On establishing the cargo tanks were under partial vacuum and that O₂ levels in the cargo tanks were greater than the permitted eight per cent, the PSC officers ordered discharge operations to be stopped, detained the vessel and temporarily ordered it to wait at anchor. Subsequently, the vessel prepared an acceptable and revised discharge and IGS operation plan and completed a risk assessment that satisfied the receiving terminal and its vetting / screening department.

What went wrong

1. An unsafe decision was made to partially discharge the cargo for line clearance without operational IGS and without the knowledge of the master;

2. During the PSC inspection, no satisfactory records of the tests of controls, alarms, trips and interlocks were available to demonstrate the completion of pre-discharge checks;
3. No proper management of change and risk assessments were conducted following a temporary modification to the IGS to trip the scrubber pump at the lower water level;
4. The discharge plan did not provide any guidance on the use of IGS during the discharge and had not been signed by the master to indicate his approval.

Root cause/contributory factors

1. Lack of planning led to a non-compliance with company procedures, industry best practice and statutory requirements. This allowed an unsafe atmosphere to develop within the ullage spaces, with potential for an explosion that could have seriously damaged life, property and the environment;
2. Improper motivation arising from complacency, inadequate supervision, operating without authority and defective equipment also contributed to the error chain.

Lessons learned

1. Advance planning for cargo operations should ensure compliance with company procedures, industry best practice and statutory requirements;
2. Pre-discharge meetings must be held and information must be freely circulated to the terminal and all crew members involved;
3. The master and chief engineer must be consulted promptly when failures occur that affect the safety of the vessel. They can then consider and assess the impact and provide guidance on proper remedial steps to be taken to safeguard the safety of those on board and ashore;
4. Every component of the cargo system and items in the ship-shore checklist must be checked to be in proper order, and results correctly documented.

MARS 201008

Fire in fish room

Due to local quarantine regulations, a substantial quantity of frozen provisions had to be transferred between two refrigerated chambers, so that one of them could be sealed by the authorities. This resulted in the overcrowding of one of the chambers, such that some cardboard packages were in tight contact with the electrical defrosting heating elements situated in close proximity to the evaporator or cooling coils. During the automatic defrost cycle, the temperature of the exposed section of the heaters was sufficient to cause smoldering and ignition of the cardboard packaging that was in physical contact.

Fortunately, the alert cook detected the fire promptly and the fire was quickly extinguished.

Corrective/preventative actions

1. Inspection and identification of heat / ignition sources inside provision rooms;
2. Posting of warning notices outside and inside provision rooms;
3. Modification of heater element arrangement to prevent any part from coming into contact with packaging; alternatively, the fitting of grilles or barriers around these elements.

MARS 201009

Hand injured during winch greasing

Upon receiving notice that a berthing pilot would be boarding, two crew members proceeded forward to make ready for weighing anchor. While preparing the windlass, an unusual noise was heard, which was thought to be caused by lack of grease on the dog-clutch gear arrangement. One man was sent to get some grease and while he was away, the other crew member secured the windlass control lever in the hoist position with the shaft slowly rotating. He then attempted to remove the old grease from the dog-clutch arrangement. While so engaged, the glove on his right hand was caught by the dog-clutch gear and he suffered multiple complex lacerations on two fingers of his right hand, although fortunately, there were no fractures or injuries to nerves or blood vessels. Subsequently, the crew member was found unfit for duty by a shore doctor and was repatriated from the vessel.

Root cause/contributory factors

1. Company procedures not followed. When the vessel was advised that the pilot would be boarding, no tool-box meeting was held to discuss the anchor weighing and berthing operation;
2. In violation of safe working practice, the windlass control lever was secured in position with the windlass shaft in motion.

Lessons learned

1. If circumstances change after a previously work planning meeting, an additional meeting must be held;
2. Company procedures to be followed at all times.

Corrective/preventative measures

Additional training on operational safety and risk assessment to be conducted for ship's staff.

■ **Editor's note:** Past MARS reports 200633 and 200811 show the hazards involved in lubricating a winch while it is in motion. In one of the incidents, a crew member lost his hand, and a seaman was very fortunate to get away with only lacerations: see www.nautinst.org/MARS



▲ Figure 3: Never lock the winch operating handle in running position

MARS 201010

Collision and grounding

Expecting a long berthing delay at the discharge port, the charterers ordered the vessel to anchor outside the

limits (OPL) of a South-East Ariam port. The master duly complied but was immediately ordered by VTIS to move to a different location as the vessel was allegedly obstructing the movement of other vessels. The vessel heaved up anchor and started proceeding towards a new position closer inshore in an already crowded anchorage. This position was arbitrarily selected by the master without discussing it with the bridge team. During the final approach, the current was estimated to be setting easterly at 2.6 knots.

As a result of misjudgment, the anchoring manoeuvre failed and resulted in the vessel colliding with another anchored vessel. In order to separate the vessels, the master gave engine movements that he considered appropriate. However, shortly after becoming free, the vessel ran aground.

There was no pollution and no injuries and the vessel was successfully refloated, however, due to extensive damage to the hull, the vessel had to be taken out of service for several months.

Root cause/contributory factors

1. Lack of planning – no passage plan carried out for the movement from the initial anchorage to the alternative position;
2. Breakdown in bridge team management – deck officers not consulted in selecting an alternative anchoring position;
3. Failure to follow company procedures – the master and officers onboard were not aware of the company's policy of 'No OPL Anchoring' off Singapore and charterer's instructions were neither relayed to owners nor challenged;
4. Cultural factors: the master and crew were predisposed to obey orders without considering their merit;
5. Failure to take local predicted tidal conditions and local variations into account, especially their effect on the vessel's manoeuvring capabilities;
6. Pressure from VTIS created significant stress on the master and the bridge team;
7. Inadequate leadership skill and assertiveness training.

Corrective/preventative actions

1. Instructions issued throughout the fleet that there must be no ship movement without a proper passage plan, which must also take into account tidal conditions, contingencies, with 'no go' areas clearly marked on the chart;
2. Company BTM course to have course content revised to include parts devoted to training in passage planning, delegation and exercises based on this incident;
3. Increased use of manned model courses so as to give greater opportunity to officers to understand the effects of tide and current on vessels as well as appropriate anchoring procedures;
4. Senior officers' confidence in their ability and independence in making safe decisions to be boosted. Leadership and assertiveness courses for sea staff to be introduced;
5. Improved familiarisation process for office and shipboard staff to ensure familiarity with all company regulations in force;
6. All company circulars and policies to be reviewed and rearranged for easy reference onboard vessels;

7. Incident presentation and discussion at seminars to prevent a similar incident from recurring.

MARS 201011

Near collision in deep water route

One of our company's VLCCs, laden to limiting draught of 20.75 metres, was east-bound via the Malacca and Singapore Straits when she was involved in a near miss incident with a handy-size bulker close to the One Fathom Bank beacons marking the deep water channel.

Own ship approached the One Fathom Bank beacons via the recommended southern side of the traffic separation scheme in visibility at times less than 500 metres in heavy rain. The timing of the passage was planned for high water (HW) at the beacons to maximise the available depth of water. During the transit, as per the passage plan, speed was to be reduced to below 12 knots to minimise the effect of squat on under keel clearance.

The master, helmsman, lookout, second officer and deep sea pilot were manning the bridge at the time, the appropriate signals for a deep draught vessel were being displayed and the AIS was fully updated.

Initially, the other vessel was on own ship's port quarter as the approach was made to the beacons, own ship's speed 12.9 kts on a course of 124°. When about 20 minutes from the first set of beacons, own vessel started to slow down, the range of other vessel was 2.25 miles.

Ten minutes before transit, own ship altered course to 090 in accordance with the passage plan, in order to pass between beacons. Own vessel's speed was 8.4 kts on completion of the turn. The other vessel was now at a reducing range of 1.48 miles. Five minutes before the transit, we were on a heading of 094 with the other vessel at a decreasing range of 1.17 miles.

Our master contacted the other vessel to ask her to change her heading to 090° and to keep clear, but her officer of the watch insisted that he had to pass through the beacons, despite the fact that there was sufficient water for him to pass to the north of them. During our transit between the beacons, the other vessel closed to within 750 m. Own ship began to increase speed in an attempt to widen the passing distance and to prepare to turn to starboard after clearing the final set of beacons. The closest noted range was less than 500 m. Eventually, the other vessel altered to port and safely passed north of the channel beacons.

The basic errors here seem to be the failure of the other vessel to comply with the Collision Regulations, particularly with reference to Rule 13 (overtaking) and Rule 18, d, i: 'Any vessel... shall... avoid impeding the passage of a vessel constrained by her draught exhibiting the signals in Rule 28.'

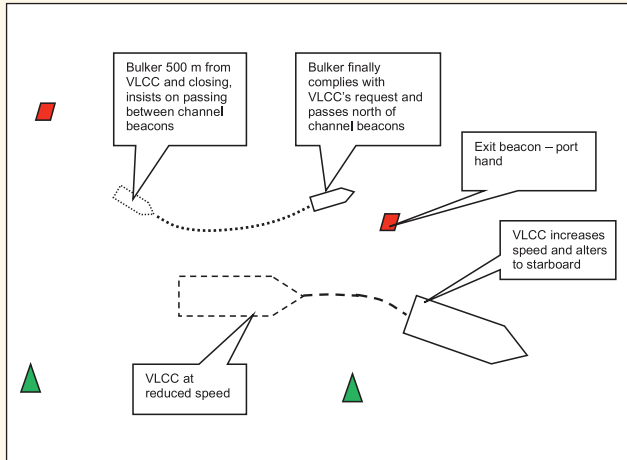
While the above are basic, the following references to the *Malacca and Singapore Straits Routeing Guide* (BA5502) seem not to have been understood by the OOW on the other vessel:

- 3.3: Deep-draught vessels advised to use the channel between the One Fathom Bank beacons.
- 4.1.1: Vessels with a draught over 15 m to be considered deep draught.

● 4.1.2.a: Passage to be at less than 12 kts at One Fathom Bank

The other vessel's officers seemed to be unaware of these clearly stated recommendations and the safe option of reducing their vessel's speed did not seem to have been considered.

It is hoped that VTIS stations in the area will be provided with appropriate manpower, equipment and, above all, the mandate to monitor and regulate ship movements to ensure safe navigation in this vital and narrow waterway.



▲ Figure 4: The near collision

MARS 201012

Unsafe tug operation

Four tugs were assisting in the berthing of a VLCC. The deck officer in charge of the poop deck was engaged in making fast one of the tugs with its line. However, before the eye of the line was properly placed on the VLCC's bits, and without waiting for confirmation from the ship's crew, the tug's skipper commenced pulling on the tow line.

It is possible that both the berthing pilot and tug's skipper misread another unidentified vessel's 'tug fast aft' report somewhere else in the harbour on the same VHF channel.

Corrective/preventative actions

1. A letter of protest was issued to the port authorities and the maritime authority concerning the near miss. The master emphasised that it was difficult to monitor the instructions passed by the pilot to the tugs as many of the commands were not given in English;
2. Our company will be providing details of this near miss report to all the vessels in our fleet, making the recommendation that every effort should be made to clarify the pilot's intentions and instructions;
3. All those who are involved in mooring operations are to be reminded of the need to keep as well clear as practicable of any danger areas.

MARS: You can make a difference.

You can save a life, prevent injury and contribute to a more effective shipping community.

Everyone makes mistakes or has – or sees – near misses. By contributing reports to MARS, you can help others learn from your experiences. Reports concerning navigation, cargo, engineering, ISM management, mooring, leadership, design, training or any other aspect of operations are welcome, as are alerts and reports even when there has been incident.

MARS is strictly confidential and can help so many – please contribute.

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