

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

MARS 200968

Loss of hand

A crew member, assisted by a cadet, was ordered to unlash and lower a pneumatically-powered accommodation ladder. Due to unfamiliarity with the procedures and equipment, instead of slowly 'breaking out' the ladder safely by means of the manual winch provided, the seaman attempted to combine both the swing-out and lowering movements by tentatively opening all the air valves and moving all the control levers to maximum.

As the winch paid out the wire rope with the ladder still in the stowed position, a number of loose turns came off the drum, coiling around the crew member's right hand, which was still gripping the main operating lever. Suddenly, when the ladder swung out and dropped, the loose turns instantly pulled tight, severing his right hand from the base of the thumb and shearing away the control handle. Reconstructive surgery was done, but it is likely that the crew member will have a permanent disability which will prevent him from continuing a seafaring career.

Root cause/contributory factors

1. The crew member had not been properly familiarised in the preparation and operation of the accommodation ladder and failed to communicate this fact to the bosun when the task was assigned to him;
2. The accommodation ladder operation was not supervised by an experienced person and was conducted in an unsafe manner by the crew member, who did not follow the correct 'breaking out' and control valve operational procedures;
3. No operating instructions were displayed locally;
4. No risk assessment for the operation of the accommodation ladder appeared to have been conducted; and
5. Improper design – the control levers were located very close to the rotating wire rope drum, which had no protective guard fitted.

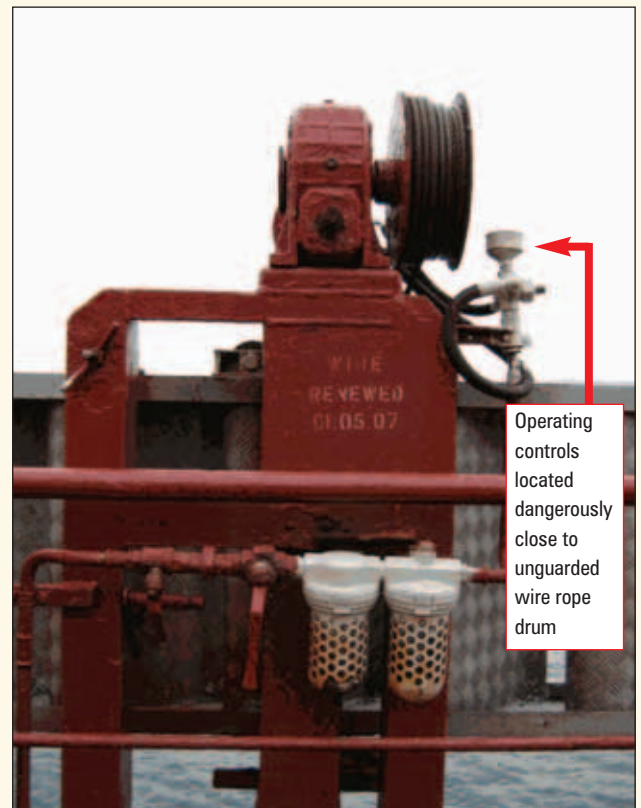
Corrective actions

1. Accommodation ladder repaired and verified by class;
2. Ship-specific familiarisation about the proper operation of the accommodation ladder conducted and recorded for all crew.

Preventative actions

1. Managers to raise awareness and initiate an 'If you don't know, say NO' campaign.

2. Operating instructions to be posted at accommodation ladders fleet-wide.
3. Training on the safe operation of the accommodation ladder to be included in the crew familiarisation checklist.
4. Risk assessment for the use of the accommodation ladder is to be prepared and made available fleet-wide.
5. Controls of the accommodation ladder to be moved to a safer location.



MARS 200969

Loss of finger

Having embarked a pilot, a vessel had heaved up her anchor and was under way. On the forecastle, the bosun proceeded to show a newly-joined deck officer the features of the 'guillotine'-type anchor cable stopper bar arrangement. The bosun and the officer were positioned on the opposite sides of the device, with the stopper bar in its open position (standing upright), and so the officer's view of the bosun was obscured by the heavy bar.

In the course of their discussion, in order to demonstrate the correct method of securing the stopper bar, the bosun inserted his finger into the eye of the lug through which the securing pin is inserted. Unfortunately, at the very same moment the officer, unaware that the bosun's finger was in the 'guillotine', inadvertently released the hold-back hook of the stopper bar. As the bar fell down with great speed, the bosun's middle finger was crushed.

The bosun was immediately transferred to the pilot boat and rushed directly to a hospital ashore, where his finger had to be amputated.

Root cause/contributory factors

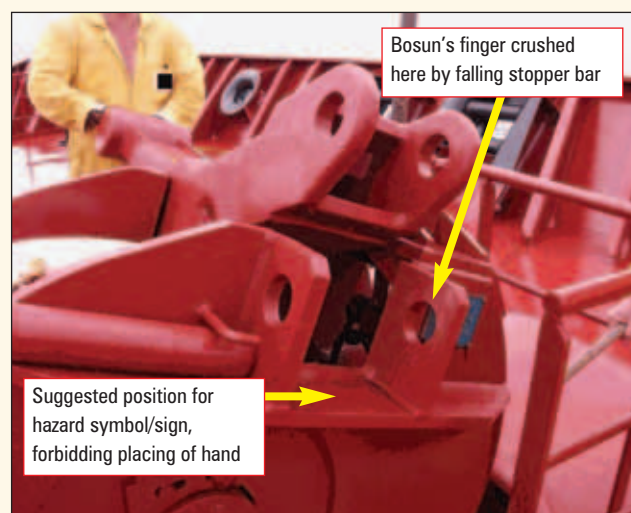
1. Human error: lack of situational awareness;
2. Inadequate risk assessment;
3. Failure to comply with safety precautions as per company's safety management system (SMS) and Code of Safe Working Practices (COSWP), Ch 25, 'Anchoring, mooring and towing operations';
4. The deck officer failed to put into place appropriate control measures to prevent inadvertent release of the locking bar from its open position;
5. The bosun failed to take into account the potential consequences of the unexpected release of the raised stopper bar.

Lessons learned

1. Never put your body parts in any location where sudden or uncontrolled movement or impact may occur.
2. The safety performance of crew members on board should be closely monitored at all times and any unsafe acts or behaviour should be stopped and rectified immediately.

Corrective actions

1. Incident report circulated throughout the fleet for discussion at the next safety committee meeting.
2. During the next on-board training session, safety precautions during anchoring operations to be reviewed with all crew, in particular, the procedures stated in the SMS and COSWP.



■ Editor's notes: Specific to this incident:

1. The stopper bar's hold-back arrangement in the open position must be made fail-proof.

2. The stopper bar's counterweight should ideally be of such mass as to ensure a controlled rate of descent.

3. The stopper device's 'guillotine' and landing area must be permanently marked with hazard stripes and a symbol or sign forbidding the placing of hands or limbs on and within the lugs.

4. In general, many tasks on board ship require the aligning of matching holes and insertion of pins or bolts, such as rigging stopper arrangements, connecting pipe flanges, drive couplings, and steering systems, closing up of machinery and manhole lids. There have been many incidents where the careless use of fingers for verifying the alignment of holes has resulted in serious injuries and the loss of fingers. The responsible person must enforce the use of a rod or similar tool for this purpose and ensure that all involved in the task fully understand the injury hazards in using fingers instead. The lessons must be reiterated during the tool-box meeting at the work site before the task commences.

MARS 200970

Changing fuel

Official report: condensed from USCG Marine Safety Alert 03-09

Due to tighter emission norms in many coastal waters, ships are increasingly switching from fuel oil to low sulphur fuels. When changing fuel types, some ships have experienced propulsion losses linked to procedural errors or fuel oil incompatibility. In order to prevent casualties arising from such sudden engine stoppages, it is recommended that owners and operators:

1. Consult engine and boiler manufacturers for fuel switching guidance;
2. Consult fuel suppliers for proper fuel selection;
3. Exercise tight control over the quality of the fuel oils received;
4. Consult manufacturers to determine if system modifications or additional safeguards are necessary for intended fuels;
5. Develop detailed fuel switching procedures;
6. Establish a fuel system inspection and maintenance schedule;
7. Ensure system pressure and temperature alarms, flow indicators, filter differential pressure transmitters etc are all operational;
8. Ensure system purifiers, filters and strainers are maintained;
9. Ensure system seals, gaskets, flanges, fittings, brackets and supports are maintained;
10. Ensure a detailed system diagram is available;
11. Conduct initial and periodic crew training;
12. Complete fuel switching well offshore prior to entering restricted waters or traffic lanes.

MARS 200971

Illicit drugs and smuggling

Merchant ships are one of the preferred modes for the smuggling and transport of illegal narcotics, offering many concealment opportunities in the cargo and the many spaces on board. The very high value of drug shipments and the high profit margins have attracted major international criminal organisations and terrorist groups. Some merchant mariners are also being lured by drug traffickers as accomplices in this transport chain.

The discovery of drugs on board by maritime authorities put the master and the crew in a serious situation: and they can be jailed without bail or trial for an indefinite period, while in some countries, drug smuggling can result in the death penalty. The ship itself can be arrested or even impounded.

Illicit drugs and psychotropic substances can be smuggled on board the vessel in many ingenious ways, including: in cargo, or within transport units or packaging; in packages left on board by seemingly genuine personnel; in ship's stores; in the baggage of crew; and in a seafarer's personal effects.

Precautions

In addition to the security procedures appropriate to the security level in force in the ship's security plan (SSP), additional precautions should be applied in drug risk areas. For example, restricted areas on board ships such as bridge, engine room and steering room should be well guarded. Locking store rooms, cabins and internal access points, unused while in port, is an obvious precaution. The use and distribution of the ship's master keys should be controlled by the ship's security officer (SSO). The cabin portholes should be well secured from inside.

Smugglers consider direct sailings from countries of supply to countries of consumption extremely risky: recent trends suggest that they prefer roundabout and circuitous routes, using ports in countries which are not drug producers. Many ports in the Caribbean islands, Central and South America fall into this category.

Although shipping companies may participate in drug smuggling prevention initiatives, as a due diligence measure it is essential for the master and crew to be extremely vigilant against illicit drug smuggling.

■ **Editor's note:** Readers are advised to also read MARS report 200747 where a drug smuggler, posing as a sea pilot, nearly succeeded in concealing drugs when the crew's attention was diverted. See www.nautinst.org/MARS

MARS 200972

Improper design and workmanship

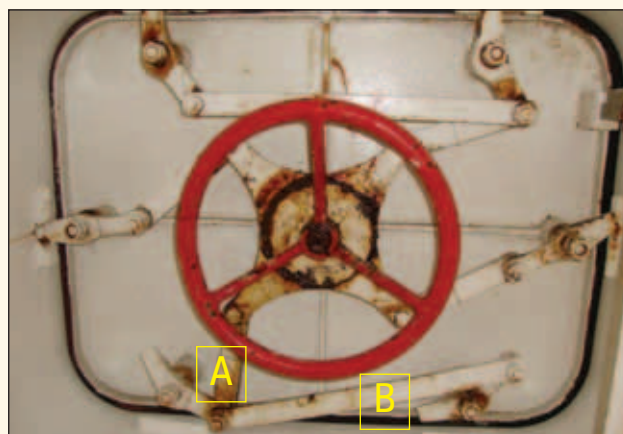
I wish to share some glaring instances of improper design and workmanship that I have seen on some very new vessels. During the ship-ordering spree that was seen a few years ago, it is likely that ships were built and delivered in a great hurry and some serious defects and omissions have apparently been overlooked during class surveys and PSC inspections. Owners and seafarers must be especially vigilant on ships that have been built in less well-known yards.



▲ Figure 3: Gooseneck vent with offset flap hinge



▲ Figure 4: Watertight escape hatch with wedge welded in wrong orientation



▲ Figure 5: Watertight escape hatch with mismatched linkage arms (A and B)



▲ Figure 6: Oil tank vents without a save-all and located directly over an open deck scupper. The marking seems to suggest that the crew is using the vent line for filling the tank, which increases the risk of spills.



▲ Figure 7: Inappropriate location (main deck bulwark on a low-freeboard ship) for a portable fire extinguisher. This can result in: i) the extinguisher getting damaged or washed overboard by shipped seas, and ii) corrosion gradually weakening the body and increasing the risk of it rupturing under pressure when used in emergency or training.



▲ Figure 8: Electrical junction box in a location frequently subject to sea water inundation. On this ship, all the circuits fed from this box were damaged.

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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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