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

MARS 201127
Allision with wharf during unberthing

A large bulk carrier was unberthing after loading a full cargo of coal. All pre-sailing procedures were carried out and documented, including the master-pilot information exchange. The ship was berthed port side to and for unberthing, two tugs were deployed, being made fast on the starboard bow and quarter respectively. Ship's heading was 270º and a current was estimated to be setting south-easterly at 0.5 knots (ebbing).

On pilot's advice, all lines were cast off, and the two tugs began pulling the vessel away parallel from the berth. Throughout the manoeuvre, the pilot communicated with the tugs in the local language and did not keep the master informed about his intentions or his communications with the tugs. When the vessel had cleared the berth by about 10 metres, the forward tug suddenly appeared to decrease its pulling power. Immediately, the pilot repeated his order to both tugs to resume pulling at full power, as the vessel was still not clear of the berth. Due to the mismatch in the pull of the tugs, the vessel's bow started to swing to port, closing with the berth. In order to check the swing and to prevent contact, the Master ordered half astern and full astern on the engine. Within a minute, it was evident that the tugs had still not increased to full pulling power, and with the ship setting rapidly astern, the Master ordered stop engine and slow ahead. Despite these actions, the ship's port bow made heavy contact with the berth. The bow bounced off, and the ship's port quarter landed heavily on the wharf's rubber fenders.

After the allision with the wharf, the vessel proceeded to the anchorage to assess damage. The pilot disembarked after signing a statement confirming that the accident took place due to the failure of one of the tugs. The shell plating on the port bow region was holed in many places and set in over an area seven metres in length and two metres in height.

The company dispatched the technical superintendent to the vessel and classification society and underwriters' hull and machinery surveyors attended for a joint survey and investigation. Temporary repairs were agreed and executed. A conditional certificate of class was issued, permitting the ship to sail to her destination, where, on completion of discharge, permanent repairs were carried out.

Root cause/contributory factors

1. Forward tug experienced sudden engine failure;

2. Pilot's communication with tugs was in local language and he failed to communicate the events and his intentions to the Master and bridge team;

3. Strong onshore current;

4. The terminal's brochure recommends unberthing at slack water or on rising tide. However, in this case, the sailing time was arranged by the terminal and charterer's agent when the tide was ebbing. Master failed to question the inappropriate sailing time.

Corrective/preventative actions

1. Incident report circulated to fleet and Masters advising them to be very alert when under pilotage and to contact management when in doubt about charterer's sailing or other instructions;

2. Master issued a letter of protest to the terminal for not complying with their own recommendations for safe sailing time and concerning the unreliability of tugs.

MARS 201128
Unauthorised repairs on cargo crane jibs

Management recently discovered that the ship's staff on some of our vessels had carried out unauthorised repairs to crane jibs by cropping and welding inserts over damaged or wasted sections to hide the damage from surveyors and port/dock labour authorities. These 'repairs' were not communicated to the management office.

Crane jibs are subject to heavy, fluctuating loads and are subject to strict periodical inspections, surveys, load tests and certification. Crane jibs are often made of high-tensile or another special grade of steel and special procedures have to be observed during repairs. For this reason, repairs on jibs must be carried out only in consultation with the manufacturers and classification society. Any damage noticed on crane jibs must be reported to the company immediately and advice sought before continuing use or carrying out any kind of repairs.

■ **Editor's note:** Apart from slewing deck cranes, corrosion, wastage and cracks can affect the structurals and components of monorail hoists, overhead and travelling gantry cranes, derricks and other lifting gear.

The ship's planned maintenance system (PMS) must ensure that all these items are carefully inspected and maintained strictly as per manufacturer's recommendations. Records of these, including gauging and clearances at critical locations and other observations must be documented and the shore management kept fully informed at all times.

MARS 201129
Auxiliary engine tachometer defective

Port State Control inspectors issued a detention deficiency (Code 30) against one of our vessels for a defective tachometer on an auxiliary engine. Fortunately, a spare tachometer was on order and was to be received at the next port of call. On the basis of this evidence, the PSC inspector downgraded the deficiency to Code 45 (rectify detainable deficiency by next port). The defective tachometer was duly renewed and the deficiency rectified at the next port.

Corrective actions

1. A fleet notice has been issued requiring all vessels to ensure that tachometers for all auxiliary engines on board are in working condition and that an adequate stock of spare tachometers is kept at all times;

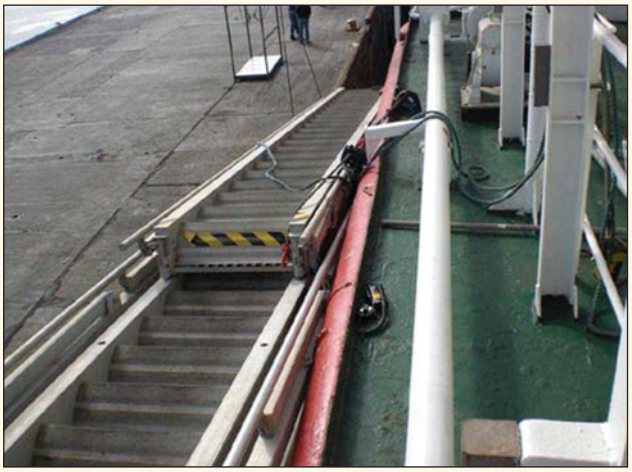
2. SMS (List of critical spares) has been revised accordingly.

MARS 201130
Injury caused by sliding gangway section

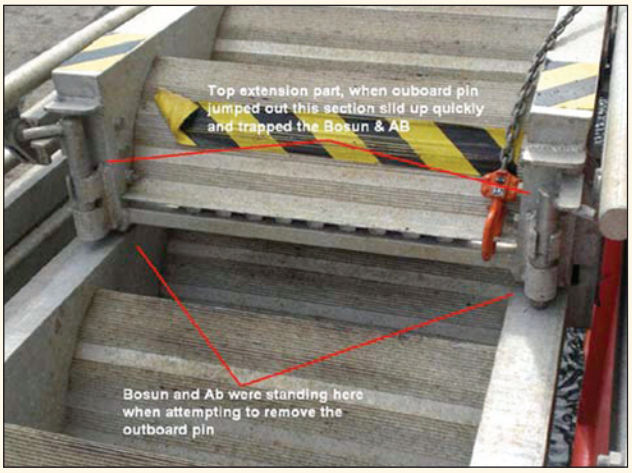
(Edited from IMCA Safety Flash 15-09)

The bosun and an able seaman (AB) lowered and extended the vessel's double-sectioned gangway prior to berthing. All the locking pins were in place, in accordance with onboard procedures (see photos right). However, during the final approach to the berth, the bridge informed the crew that berthing plans for the vessel had changed, requiring the use of a different means of access. Crew were instructed to recover the now partly-deployed gangway. The retraction procedure for this double-sectioned gangway normally requires the end of the gangway to be landed, allowing tension to come off the fall wires, after which the locking pins of the extendable section can be easily released. The extendable section is designed to then slide back over the main section and the combined ladder is raised to the stowed position.

In this case, the bosun and AB overlooked the correct procedure and attempted to retract the extendable section by releasing the locking pins with the gangway still hanging and inclined overside and the fall wires under tension. With both the crewmembers standing above the extendable section, the AB first removed the inboard pin, which was not under stress. When he found the outboard pin jammed, he used a crowbar to lever off the extendable section of the gangway to loosen the pin. This action caused the pin to suddenly jump out, and the extendable section of the gangway slid rapidly upwards, trapping both the Bosun and the AB by the legs in the recess between the gangway steps. Realising the emergency, other crew members rushed to the site with a portable lever hoist (chain block) and managed to relieve the stress and free the trapped men. The AB suffered a serious fracture of the leg and was disembarked to a hospital ashore.



▲ Gangway showing main and extendable sections



▲ Close-up view after incident, showing locking pins in open position and lever hoist (chain block) rigged as a temporary preventer

MARS 201131
Fatality during crane maintenance

(Edited from IMO FSI Sub-Committee Report 12th Session)

The bosun, with the assistance of a deck cadet and five seamen, had just completed changing the cargo wire on a deck crane. They had worked continuously from the morning, taking only a short break for lunch. By the time the job was finished, the sun had set and it was getting dark. To ensure that the wires were running freely, the bosun stood on a small platform on the top of the crane cab and directed the deck cadet to operate the crane. In order to observe the wires more closely, he unclipped the lifeline of his safety belt from the safety railing of the platform and moved closer to the moving wires and sheaves. He was unaware that his unclipped lifeline had become entangled with the moving luffing wire of the crane. Suddenly, he was drawn between the sheaves and the luffing wire. On hearing the shouts, the deck cadet stopped all movement. The bosun was freed and brought down to the deck. His leg was nearly severed and he soon died from severe haemorrhaging.

Root cause/contributory factors

1. Unsafe act by the bosun in unclipping the lifeline of his safety belt which became entangled with the crane's luffing wire;

2. Lapse of concentration after the completion of a prolonged physically and mentally demanding task;

3. Prevailing darkness could have contributed to the casualty.

Lessons learnt

1. Personnel involved in mentally and/or physically demanding tasks may encounter periods where they have a loss of concentration;

2. The bosun might have been more aware of hazards associated with his disconnected safety line if warnings had been given regarding the dangers of loose clothing and personal protective equipment (PPE) becoming entangled with moving objects;

3. Hazardous work shall not be undertaken if adequate lighting and reliable means of communications cannot be provided.

MARS 201132
Cargo shift during discharge caused large list

As a port captain, I was in charge of a small cargo vessel that was discharging steel coils at a wharf. Overnight, I had delegated my chief foreman to oversee the discharging under my guidance. At around 0200 hours, I received an urgent phone call from him, informing me that the vessel had listed very dangerously and could be in danger of capsizing.

I immediately rushed to the port, and on reaching the berth, noticed that the vessel was listed about 25 degrees to the shore (port) side. All the ship's crew, including the Master and chief officer, had safely mustered on the jetty. Upon enquiry, it was confirmed that there were still about 50 coils (about 1000 mt) to discharge. After donning a life-vest, safety harness, other PPE and taking a portable light, I went aboard alone to investigate the cause of the list.

On looking into the open hatch of the hold from which the cargo was being discharged, I found that the steel coils had all rolled and piled up on the port side of the hold. I summoned two volunteer stevedores to enter the hold with the necessary PPE, and, with the help of a shore crane, we started discharging the steel coils from the port side. As the list began to decrease, the chief officer also joined us and in between slinging the coils, we jammed wooden wedges and assorted dunnage under the remaining free coils. As the situation came under control, the chief officer was advised to take ballast in bottom tanks on the starboard (high) side. Later, the ballast was equalized by topping up the tanks on the port side, until the vessel returned to the upright.

Root cause/contributory factors

1. The coils had not been chocked off with wooden wedges at the loading port;

2. During the night, the vessel had started rolling slightly due to the swell;

3. Once the locking steel coil was discharged and the stow became loose, the coils began to move out of control;

4. With the ship's movement alongside, an initial movement of some coils to port started a cascade effect, whereby a rapidly developing port list caused all the remaining coils to roll over to the low (port) side.

Lessons learnt

Vessels loading coils and similar products must ensure that the cargo is stowed tight and that enough wooden wedges are used beneath and to the sides of every unit to prevent rolling of cargo.

MARS 201133
Injury during cargo hose pressure test

In our chemical tanker fleet, the annual pressure testing of cargo hoses is generally carried out by ship's crew, ideally when the cargo hoses are being used for tank cleaning. During such an operation, with the ship at a repair yard, the cargo hose pressure test was being conducted at a pressure of 12 kg/cm^2. A junior officer was part of the testing team, and was involved in documenting data and taking photographs. Suddenly, the connection between the water hose and cargo hose detached and the flailing hose coupling hit his left leg causing a serious fracture.

Root cause/contributory factors

Worn and insufficient threads on the water hose coupling.

Corrective/preventative actions

1. The shipyard was given a letter of protest about the accident.

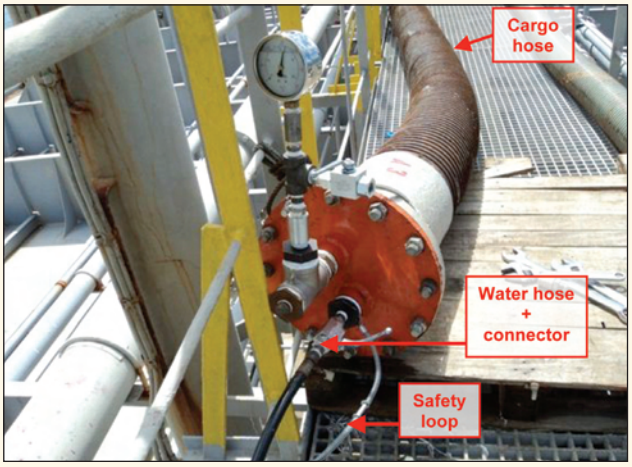
2. Alert issued to the fleet instructing the crew to:

i. Inspect all tools and equipment which are used for the pressure test beforehand;

ii. Attach a safety loop or lashing rope across every temporary connection in the hose and piping system to prevent them from snapping back;

iii. Keep away from snap-back danger zones;

iv. Locate and monitor devices such as pressure gauges which are within a safety zone.



▲ Safe cargo hose pressure-testing arrangement showing safety loop across connector between water and cargo hoses

MARS 201134

Miscommunication causes near grounding

Recently, our container ship almost grounded on the breakwater when entering port. The pilot boarded the ship near the breakwater and requested the present engine status and speed. He was advised that the engine was on slow ahead and the ship's speed was about 5.2 knots. Simultaneously, he was turning the ship to starboard by intermittently applying 10 degrees starboard rudder, which made the ship turn very slowly. The pilot then ordered half ahead on the engine. After passing the last channel buoy before the breakwater entrance at very close range, the pilot ordered hard-a-starboard. The ship is fitted with a Becker rudder and with the engine going half ahead, the ship started to turn very rapidly to starboard, heeling appreciably to port. Seeing the rapid turn, the pilot ordered midships rudder and then ordered the helmsman to steady the head. By this time, the ship was heading directly towards and closing with the breakwater. I took over the con from the pilot and ordered hard-a-port and full ahead on the engine, with the bow thruster full to port to correct the heading. The pilot was very upset by my actions and started arguing with me, accusing me of ignorance.

As the ship began to turn to port and away from the breakwater, the pilot told me that he did not want to pilot my vessel inwards and we turned around to seaward. Abruptly, the pilot left the bridge, instructing me to keep clear of the following inbound vessel and told me that I would have to tender a formal apology to him if I wanted my ship to get into port.

He insisted that under local regulations, the pilot has supreme authority and that the Master is not allowed to take any actions by himself. Written proof of such a law was never provided but I had to apologise to him to avoid being denied entry into the port.

The rule that a pilot is only an adviser to the captain, who is always responsible overall does not seem to apply to this particular port and country.

■ **Editor's note:** This is an avoidable situation that occurs very frequently throughout the world; a pilot boards just off the entrance, where there is no time or opportunity to engage in a meaningful master-pilot information exchange. Lack of communication can rapidly lead to a breakdown in the proper functioning of the bridge team, threatening the safety of the vessel and the port. It is suggested that ports and incoming vessels voluntarily adopt a system whereby essential information is exchanged before arrival, preferably in writing, or at least verbally.

Feedback to MARS 201108

Bagged copra fire

In the late 50s/early 60s, there were frequent fires involving cargoes of bagged copra. The fires were handled by blanketing the cargo with CO_2; repeatedly if necessary, otherwise, if the fire got out of hand all was lost and even shore-based firefighting equipment would be ineffective. With regard to the fire in question, the picture shows the flame to be bright yellow to white: the former indicating temperatures of between 1,200ºC-1,400ºC and the latter 1,400ºC-1,600ºC.

When I was involved internationally in cargo surveying in the Far East, I was often called to attend cargo fires in such commodities as jute, cotton, oil cake, charcoal, fishmeal and rubber. While rubber will not combust on its own, it is a very great problem when it does ignite through being in contact with already burning substances. If water is used to fight a fire involving rubber, it will only spread it as the burning, fluid rubber will flow of its own volition.