Marine Safety Investigation Unit

Transport Malta

SAFETY INVESTIGATION REPORT

201109/032 REPORT NO.: 12/2012 August 2012

MV Purki

Serious injury of ordinary seaman and subsequent death of the second mate In the port of Alger, Algeria 29-30 September 2011

SUMMARY

At about 2315(LT) on 29 September 2011, the motor vessel *Purki* was sailing out of the port of Alger. An ordinary seaman (OS) stationed on the forecastle was tasked with releasing the tug secured to a ship's line to the starboard mooring bitts through the centre panama lead.

During this operation, tension was unexpectedly put on the line with the result that the OS sustained serious injuries to one of his leg. First aid was administered on the forecastle and the OS was placed on a stretcher.

The vessel proceeded out and later drifted some distance off the breakwater. It was eventually decided to transfer the injured crew member ashore by placing him on top of the ship's container lashing gear storage box and lowered by utilising the ship's cargo crane.

The intention was to transfer the stretcher from the container lashing gear storage box to the pilot boat and then shore. Four crew members accompanied the injured OS on this makeshift platform.

MV *Purki*

On 30 September, at about 0010, whilst approaching the ship, the pilot boat made heavy contact with the container lashing gear storage box resulting in the inadvertent release of the lashing gear storage box's lifting strops from the cargo crane hook.

The container lashing gear storage box tilted substantially and the five crew members fell into the sea. Eventually, all were rescued except for the second mate who was recovered lifeless a day and a half later.

The safety investigation found that no risk assessment for mooring and towing operations was made. Moreover, the injured crew member was in close proximity of the mooring rope. It was also concluded that the crew members were not sufficiently trained in the emergency transfer of injured personnel. As a result of this safety investigation, four recommendations have been made to the managers of the ship.

FACTUAL INFORMATION

Vessel

Purki, a 10396 GT container vessel was built at MTW Schiffwerft, Wismar in Germany in 1992 and registered in Malta. At the time of the accident, she was owned by Purki Shipping and Trading Co Ltd, managed by Ak Gemi Tas. San. Ve Tic. AS, Turkey, and classed by Bureau Veritas.

The vessel's length is 146.7 m. Her summer draught is 8.65 m. She has three cargo holds, with a total capacity of 923 TEUs (including the weather deck).

Crew directly involved in the accident

Purki's Minimum Safe Manning Certificate required a crew of 15. 21 crew members, all of Turkish nationality, were on board at the time of the accident. However, it was apparent that on the day of the accident, the ship was not in conformity with the requirements of the Minimum Safe Manning Certificate, having one deck rating less than that stipulated[1].

The injured crew member was 29 years old. He signed on board *Purki* as an ordinary seaman on 20 July 2011 and was on an eight-month contract. This OS had 25 months accumulated sea-time and had served with the vessel's managers for the past 10 months.

The deceased crew member - the second mate - had just turned 26 years and had joined the vessel on 17 July 2011. He was on a six-month contract and had already served for two years with *Purki's* owners, 12 months of which as second mate.

Environment

The weather conditions were calm with a negligible sea and very low swell. Visibility was reported to be good at the time of the accident, which happened during night time.

Narrative

Purki arrived at Alger roads, Algiers on 28 September 2011 at 2330 and berthed at around 0145 on 29 September. The vessel discharged and loaded containers at the container terminal. Upon completion of the cargo operations, the Master ordered a pilot and initiated the necessary departure preparations.

A pilot was on board at about 1500 and all lines were let go at 1520. At approximately 1540, the starboard anchor windlass motor failed and arrangements were made for an alternative (lay-by) berth to carry out the necessary repairs. *Purki* was secured alongside at about 1615. Ship's personnel dismantled the aft port side windlass motor,

[1] Evidence did not indicate that the issue of safe manning was a contributing factor to these two accidents.

which was used to replace the damaged motor on the starboard forecastle windlass.

The pilot boarded the vessel again at 2230 and at 2238 the tug *Sidi Abderrahmane* (Figure 1) was made fast forward by ship's line through the centre panama lead. The line was secured to the starboard mooring bitts (Figure 2). All shore lines were let go at 2245.

Figure 1: Tug *Sidi Abderrahmane*

Figure 2: *Purki*'s forecastle showing the centre lead forward and starboard mooring bitts

The chief mate was in charge of the forward mooring station, assisted by the bosun and an OS. The second mate was responsible for the aft station. The third mate was on the bridge assisting the Master and the pilot.

The electrician did not form part of any of the two mooring teams. However, as a result of the failure of the electrical motor earlier that day, he was tasked by the chief engineer to remain on standby on the forecastle and monitor the condition of the starboard winch motor. With all lines gone and clear, *Purki* started to clear the way from the jetty. The bosun was operating the mooring winches.

After manoeuvring clear of the jetty, the pilot ordered that the tug be cast off. The master relayed the pilot's request to the chief mate. The chief mate in turn ordered the OS to release the tug line that was turned up on the starboard mooring bitts. The OS released the tug line as requested.

The tug line was now slack on the main deck but still fast to the tug boat. Suddenly, with three turns still on the bitts, the tug line came under tension once again, removing any slack and as a consequence, striking the OS in his legs.

It soon became evident that the crew member's accident was serious albeit not life-threatening and first aid was administered. At 2330, the Master requested the pilot to return into the port but this was refused and he left the vessel without assisting any further.

The Algerian authorities and other interested parties were informed of the accident and a Coast Guard delegation boarded the vessel shortly after. Whilst the chief mate was preparing a statement for the Coast Guard, the second mate was tasked to make preparations to transfer the injured crew member ashore. At 2340, the vessel was logged as adrift about 1.5 nautical miles off the port of Alger.

The master acceded to a suggestion by the second mate to utilise the container lashing gear storage box as a makeshift platform (Figure 3).

Figure 3: The frame used to hold the container lashing gear storage box used to lower the injured OS on the pilot boat

The OS was placed on a stretcher, which in turn was placed on top of the container lashing gear storage box. Accompanied by four crew members, the storage box was lowered down the ship's port side, using the ship's cargo crane.

Figure 4: *Purki*'s port side area where the container lashing gear storage box was lowered

The plan was to transfer the injured crew member to a boat, which was standing by. On 30 September at about 0010 hours, the boat made heavy contact with the container lashing gear storage box whilst manoeuvring alongside the ship. The impact of the boat against the lashing gear storage box forced the release of the storage box's lifting strops from the crane hook. Consequently, all fell into the sea.

The chief mate and oiler boarded the vessel again using the pilot ladder and subsequently, the ship's rescue boat was launched. The second mate was not accounted for and the alarm was raised. Reportedly, the boat sent by the authorities could not assist any further and the injured OS was transferred ashore with the ship's own rescue boat.

At 0030 hours the vessel anchored at Alger roads and although a search and rescue operation was initiated immediately, the body of the second mate was eventually recovered several miles away, on 01 October 2011, at about 1409.

ANALYSIS

The injury

The dynamics of the accident seemed to indicate that the OS may have been standing in a bight of the tow line so that when it came under tension it hit the OS in the legs.

It is unclear whether the OS was injured as a result of being in the "snap-back" zone or because he was standing in the bight of the line that hit his legs. Whatever the cause, the result was an injury sustained by the OS who was standing in close proximity to the line.

The injuries sustained by the OS, although reportedly of a serious nature, were not life-threatening and thus perhaps not necessitating immediate transfer ashore for treatment. In addition, there was no evidence as to whether or not the Master requested medical advice from a shore-based medical team or organisation.

Of significant importance, however, was that there was no reference or record of a risk assessment being carried out for un/mooring operations and vessels under tow. It was probable that the crew members did not have the opportunity to conduct a risk assessment of the mooring operation.

Moreover, a mooring operation *per se*, conducted in every port of call, may have

created a situation where risk tolerance would have drastically increased. Under such influence, goals may be judged as worthy of high levels of risk exposure. Therefore, it was legitimate to submit that the mooring operation progressed without a risk assessment being conducted because the crew members pursued the goal of completing a (familiar) task – the mooring operation.

The vessel's SMS, and particularly the operational manual and records of crew familiarisation/training on board, referred to the familiarisation with key operational procedures; in particular, mooring operations and use of windlasses.

However, the investigation was unable to trace any reference to the relevant safety requirement in these records; particularly vigilance to avoid standing in the "bight of a rope"; or in the snap-back zone of a tightened rope. Additionally, it could not confirm the actual effectiveness of the familiarisation of the crew members, which would also have had a bearing on the approach taken on the forecastle deck.

Second mate fatality

The use of the container lashing gear storage box as a platform is unusual but one that seems to have been dictated by the circumstances of the situation. In the case of such a situation, the master's guidance was contained in the SMS Manual, namely crisis cards nos. 1, 4, and 8.

The casualty should have been evacuated either by helicopter or lifeboat. If the first means was not available, there should have been no hesitation in launching the ship's rescue boat or lifeboat to carry out the evacuation as indicated in the SMS Manual.

According to the master, the main deck was not wide enough to carry someone to the rescue boat (located aft) by a stretcher (Figure 5).

Figure 5: *Purki*'s passage way on port side main deck.

However, it was reasonable to assume that an appropriate stretcher such as the Neil Robertson type would have been able to do the job especially considering the fact that it is a rescue stretcher specifically designed for the recovery of victims in difficult and cramped / confined situations, especially where the patient has to be raised and carried to safety.

This element alone casted doubt as to whether or not the vessel was actually equipped with this type of stretcher at the time of the accident, even though the vessel's managers provided a photograph of a Neil Robertson stretcher during the analysis stage of the accident (Figure 6).

Figure 6: The Neil Robertson stretcher on board *Purki*

Furthermore, the use of shackles instead of hooks could have avoided the container lashing gear storage box coming free from the points of suspension.

Evacuation of casualties

There was no evidence to show that training and drills in the event of an evacuation of a casualty from different areas on board have

been held or that such drills and training were required by the Company's SMS. This is being highlighted because the problem of narrow deck passages was only identified during a real case scenario, when ideally, it should have been identified during one of the drills held on board.

There was no information as to whether or not the transfer was being co-ordinated at all; there seemed to have been a breakdown of communication between the Alger pilot boat and the vessel.

From the evidence collected, it was apparent that during the transfer, none of the crew members involved in the accident wore lifejackets. Moreover, there were neither any lifebuoys close at hand nor was the rescue boat launched as an added safety precaution.

These factors alone would have surely affected the outcome of the incident and may point to a general lack of safety awareness and practice of good seamanship. However, it is more plausible to claim that they reflected a situation which was novel to the crew members.

There were no indications that the calm weather was a contributing factor to the incident.

CONCLUSIONS[2]

1. The OS was standing in close proximity of the tug line whilst being released. He was not made aware of the risks involved.
2. The chief mate, albeit being in charge of the mooring operations, was unaware that one of the crew members was in a dangerous position.
3. The decisions taken by the Master and the actions of the crew did not reflect the requirements of the Company's SMS Manual, in particular the section dealing with emergencies.
4. The safety investigation could not determine with certainty that the vessel was equipped with the correct type of casualty evacuation stretcher (*e.g.* Neil Robertson type) at the time of the accident.
5. The Company's SMS did not include training and drills which addressed the evacuation of a casualty other than from an enclosed space.

RECOMMENDATIONS

AK Gemi Tasimaciligi Sanayi is recommended to:

12/2012_R1 update the SMS Manual in particular on a requirement to carry out a risk assessment for mooring and / or towing operations, in addition to encouraging the use of "toolbox talks" to enhance health and safety awareness where specific operations are undertaken, including the use of lifejackets when conducting overside operations;

12/2012_R2 discuss with crew members and introduce measures to improve safety during mooring/unmooring operations, taking into consideration the potential of a tug line coming unexpectedly under tension;

12/2012_R3 emphasis through their SMS manuals that on board crew training includes casualty evacuation from different areas of the vessel which are not classified as enclosed spaces;

12/2012_R4 prepare and circulate a fleet memorandum on the accident and highlight that cargo gear is not to be used as a means for crew evacuation.

[2] **Conclusions and recommendations should not create a presumption of blame and/or liability.**

SHIP PARTICULARS

Vessel Name:	*PURKI*
Flag:	Malta
Classification Society:	Bureau Veritas
IMO Number:	9004217
Type:	Container ship
Registered Owner:	Purki Shipping and Trading
Managers:	Ak Gemi Tasimaciligi Sanayi
Construction:	Steel
Length Overall:	135.00 m
Gross Tonnage:	10396
Minimum Safe Manning:	15

VOYAGE PARTICULARS

Port of departure	Tripoli, Libya
Port of arrival	Alger, Algeria
Type of voyage	International
Cargo information	Containers
Manning:	21

MARINE CASUALTY INFORMATION

Date and time	29 September 2011 at 2315LT
Type of marine casualty or incident	Very Serious Marine Casualty
Location of incident	Port of Alger, 36° 47’N 003° 05’E
Place on board	Forecastle and over board
Injuries/Fatalities	One injury and one fatality
Damage/environmental impact	None
Ship operation	Unmooring / manoeuvring
Voyage segment	Departure
External and internal environment	Calm with a negligible sea and very low swell
Persons on board	21