NATIONAL TRANSPORTATION SAFETY COMMITTEE

REPUBLIC OF INDONESIA

FINAL

KNKT.15.11.08.03

Marine Accident Investigation Report

Grounding of Indonesian Passenger Ferry *Sea Prince*

Nongsa Channel

Province of Riau Islands

Republic of Indonesia

29 November 2015

2018

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3. President Regulation No 02 Year 2012 on the Komite Nasional Keselamatan Transportasi; and
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Jakarta, September 2018

Chairman of

NATIONAL TRANSPORTATION

SAFETY COMMITTEE

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FACTUAL INFORMATION

THE ACCIDENT

Course of the Accident

On 29 November 2015 at about 15.00 local time[1] (LT), while Sea Prince was at Tanah Merah Ferry Terminal (TMFT), the Master of Sea Prince received instruction to ferry excess passengers of Sea Flyte from Nongsa Ferry Terminal (NFT) to TMFT.

According to Sea Prince's schedule, the vessel would typically make 3 to 4 trips daily between NFT and TMFT. The unscheduled trip would be the third trip for the vessel.

At about 18.45 LT, Sea Prince departed TMFT and arrived at NFT at about 19.30 LT. Once safely berthed at NFT wharf, with Sea Prince's navigational equipment and machineries still operational, the passengers began embarking the vessel.

At about 1939 LT, after all 97 passengers were onboard, the Master noted Sea Prince's departure draught was 1.20 m (even keel), with sea level along the vessel's length below the Loadline marking (separation line between white and blue paint). Afterwards, Sea Prince began the trip.

The bridge team comprising the Master at the con, Chief Mate assisting in navigation and Chief Engineer in-charge of machineries and engines, commenced the outbound passage - transiting Nongsa demarcated channel.

The Master observed that the weather was cloudy, with slight drizzle and moderate visibility. The northerly wind was about 10 knots, with ebbing tide. The Master claimed that he was not aware of the height of tide at that time.

Sea Prince's way-points were pre-loaded into the GPS (mounted overhead and in full view from Master's conning position). The Master opined that the pre-loaded way-points were very useful, in particular, during condition of restricted visibility and during sea passage.

Prior to the time of the incident, the visibility was moderate, therefore, Master had utilized only visual navigation in maneuvering Sea Prince within channel and thereafter, for the passage to Singapore.

At about 19.45 LT, Sea Prince's heading for north at about 9 knots, passed the last pair of lit beacons marking the end of Nongsa demarcated channel uneventfully.

The Master observed that everything was clear ahead, increased speed to about 11 knots and altered heading to about northwesterly (330°T) towards TMFT, Singapore. The Master then reported to NFT via VHF radio.

At about 19.46 LT, one Able Seafarer Deck (ASD) came to the bridge, handed the-passenger-list to Master and remained at the bridge as lookout. The Master then forwarded the list to the Chief Mate for checking.

[1] Indonesian Western Time (Waktu Indonesia Barat) is UTC +07:00.

Suddenly, at a time recorded as 19.47 LT, Sea Prince was unable to control. She began altered to the left where the depth of water is shallower than in the middle. Shortly after, a shuddered voice was heard for a few seconds. The Master immediately pulled the engine telegraph to neutral to stop the engine and ordered the crew to investigate the abnormal voice.

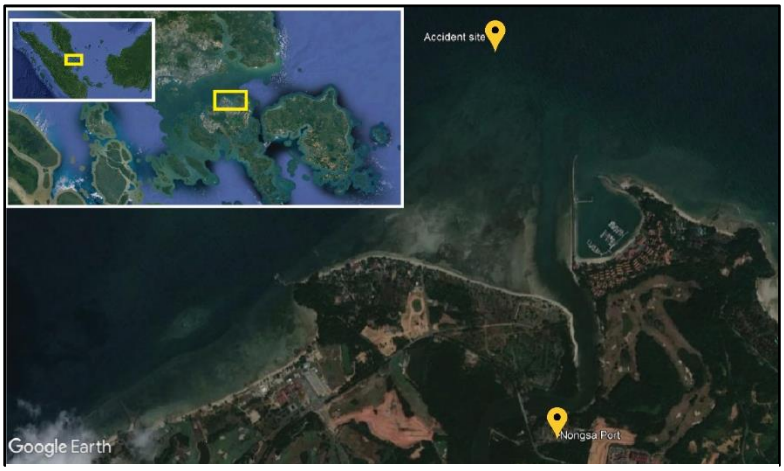

Figure 1: Location of accident site and Nongsa Ferry Terminal (image: Google Earth)

The Master looked around but did not see any obstructions surrounding the Sea Prince. The Master tested all three engines and noted that the starboard engine was not responding.

Shortly after, Chief Engineer reported to Master that the condition inside engine room was normal. At that time, Second Engineer came running to the bridge and reported that there was ingressed of seawater inside the steering gear room. The Master and Chief Engineer immediately left the bridge to check it out.

From the entrance hatch to the steering gear room, Master saw that seawater was entering from the bottom hull plating. The Master instructed the Chief Engineer and crew to start pumping out water from the compartment and left for the bridge.

The crew removed a portable diesel driven pump located at the baggage area inside the passengers' cabin space and rigged it on top of the steering gear room to pump out the water.

The Master returned to the bridge, and at about 19.48 LT, reported to Nongsa port authority and Owner's Port Captain (PC) stationed at Nongsa that Sea Prince had sustained damages due to contact with some floating objects.

The Master further added that the contact had caused damage and ingress of seawater into the steering gear room. The Master was advised by PC that several vessels had already been dispatched to Sea Prince's location to provide an assistance.

Following the report, Master engaged astern engine when he observed that Sea Prince was drifting towards shallow water. The Master's intentions besides moving Sea Prince away from the shallows was also to clear the suspected fouled propeller when the vessel experienced a second jolt about a minute later.

The Master immediately stopped engine and ordered the crew to re-check the condition inside engine room. The Master, after satisfied that there was no change in the engine room's condition, tried, but this time none of the engines could be started.

The Master updated Sea Prince's condition to PC that the vessel was grounded at a shallow patch with a charted depth of 2.1 m. The Master then instructed the crew to assist passengers in wearing lifejackets.

At about 20.05 LT, Master saw another ferry Sea Raider 2 (sent by the Owner) had stopped at a distance from Sea Prince. The Master instructed Chief Mate to drop anchor and take

soundings of surrounding depth. It was later reported that the sounding (depth of water) forward of Sea Prince was about 1.5 m and aft about 1.3 m.

At about 20.30 LT, one small-sized fast boat (5-person capacity) arrived from NFT to offload an additional, diesel driven, portable pump to Sea Prince.

After about 15 minutes of both portable pumps running at the same time, Master reported that the volume of water inside the steering gear room was not reducing. In the other words, the ingress of seawater was more than what could be pumped out by the pumps.

The Master informed the Owner of his decision to evacuate the passengers as he feared that further sinking of the stern due to ingress of water could submerge the engine exhaust pipes (protruding from stern) which could cause progressive flooding in the engine room.

Evacuation Process

At about 20.35 LT, in fair weather, calm sea and slight drizzle, Master saw the arrival of second ferry, Golden Ocean, and gave an evacuation order. The Master opined that the two liferafts (65-person capacity each) would be sufficient to evacuate all the passengers.

At about 20.45 LT, Master instructed Chief Mate to launch liferaft A and B. After both liferafts (A and B) were launched in water, inflated and secured alongside the vessel, Chief Mate and crew then organized the passengers for evacuation.

Liferaft A was positioned at the starboard quarter and liferaft B was positioned at the port midship section (refer diagram). The passengers were then divided into two groups. The first group was to board liferaft A from the passengers' aft cabin door, while the second group was to board liferaft B from the portside mid-ship door.

The evacuation to board both liferafts were carried out in an orderly manner. While the first group was boarding liferaft A, the small boat (after offloading the pump) came alongside and took five passengers back to NFT.

Except for the pool of water collected at the centre of the raft, the evacuation of passengers from the stranded Sea Prince into liferaft A was uneventful.

At about 2100 LT, after the five passengers were landed at NFT, the small boat returned to Sea Prince with PC. The small boat after disembarking PC onboard Sea Prince began to tow liferaft A carrying 24 passengers back to NFT.

Meanwhile, the evacuation of liferaft B which started orderly became disorganized when the raft suddenly deflated while passengers were still boarding.

The incident occurred after about 30 passengers were already sitting inside the raft, heard loud 'pop' sound and followed by the bottom buoyancy unit deflating.

Shortly after, the floor of the raft could be seen coming apart from the side that was attached to the buoyancy units and caused ingress of seawater into the raft.

The situation became panicky, with some passengers climbing to the top of the buoyancy unit, while others were just floating inside the raft calling for help.

The crew and PC immediately assisted the passengers back to Sea Prince. At that time, a larger-sized port authority rescue boat (100-person capacity) arrived and evacuated the

passengers from the leaking raft. After having completed the transfer of passengers from the leaking raft, the boat came alongside Sea Prince for the remaining passengers.

Due to Sea Prince's higher freeboard relative to that of the rescue boat, the crew launched the third liferaft - used to bridge the height difference. After liferaft C had been launched and secured alongside, the remaining 68 passengers boarded the raft before been transferred to the rescue boat.

At about 21.15 LT, all 97 passengers safely arrived at NFT and attended by the Owner's agent at Nongsa. The Master and crew remained on the stranded ferry.

At about 21.30 LT, the Owner's Technical Team arrived with another portable pump. It was decided by Owner's Technical Team with Master's agreement to refloat Sea Prince at the next high tide.

At about 22.30 LT, Sea Prince was successfully refloated and towed by Golden Raider back to NFT. At about 23.00 LT, Sea Prince was berthed at NFT.

Figure 2: Sea Prince at NFT after the accident

At about 23.50 LT, the total of 95 passengers from Sea Prince were ferried back to TMFT onboard another ferry, while two decided to remain at Nongsa.

There was no serious injury or pollution reported as a result of the incident. Sea Prince sustained material damage and was deemed unfit to continue on passage.

DAMAGES

Propellers

All of the Sea Prince's propellers were broken. However, her starboard propeller had the most damage compared to the other. All blades of starboard propeller torn and dented as seen on **Figure 3**.

Figure 3: The damages on her propellers

Bottom plate and rudder shaft

Figure 4: A Torn on the bottom plate

The starboard side bottom plate of Sea Prince was torn nearly 30 cm. This damage allowed sea water to ingres into the engine room. To stop sea water, the crew had poured mix of concrete onto the hole. This method successfully stopped water made further damage to the ship.

Compared to size and shape of rudder, the hole on the bottom plate was similar to the rudder. Although at this case the starboard rudder was missing, all rudders are identic.

In addition, the rudder shaft was dented towards the aft. Despite all 8 bolts on the rudder shaft were not deformed, the angle of the shaft was unsafe for the surrounding plates. At this situation, the new rudder cannot be installed directly onto the rudder shaft, unless the shaft has been adjusted to the desired angle.

Figure 5: Dented rudder shaft

Propeller shaft

Figure 6: Bended Rudder Post after grounding

The starboard side propeller shaft had serious damage in which it was dented towards up as in the **Figure 6**. There was no other damage on the other propeller shafts.

Liferaft

As mentioned in the chronology, on einflatable liferaft failed to maintain its air pressure. As a consequence, the roof and other parts collapsed to big circle flat as can be seen on **Figure 7**.

Figure 7: Unfloated ILR

SEA PRINCE

Ship Particular

Sea Prince (IMO Number 8883408) is an Indonesian typical aluminium alloy passenger ferry which built in 1976. With the gross tonnage of 101, she is certified to carry 142 passengers inside two-passenger-cabins. At the time of accident, she belonged to Batam Fast Pte. Ltd.

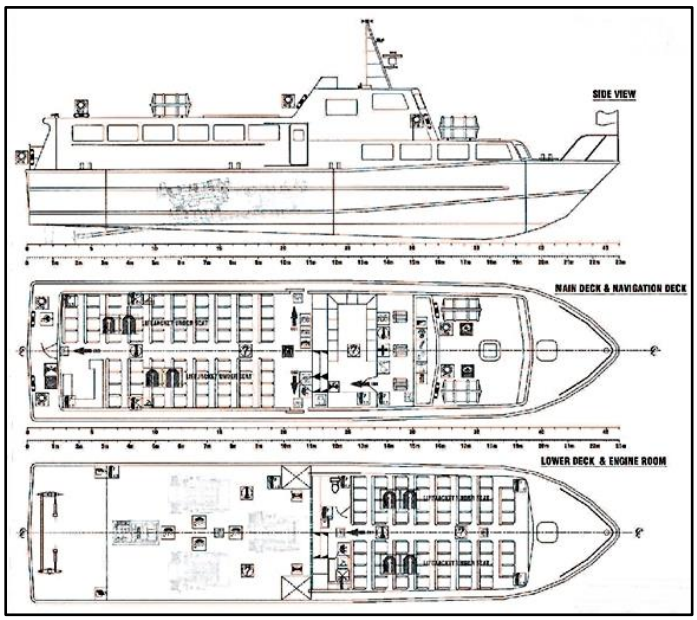

Figure 8: General Arrangement of Sea Prince

The dimension of her length, breadth and depth are 23.0, 5.4 and 2.5 m, respectively. One of the cabins is located below the main deck level (forward cabin) and the other at main deck level (aft cabin). The side view of the vessel can be seen on **Figure 8**, while the image of safety plan is attached on the appendix.

There are three doors to the outside serving these two cabins. Two of the doors are located at about mid-ship section (one on each side), while another door at the aft part of the passenger cabin and towards the stern of the vessel.

Sea Prince was designed with six watertight compartments, such as the Forward Void Compartment, Fore Peak Store, Mid Void 1C, Mid Void 2C, Engine Room Compartment, Aft Void Compartment and Steering Gear Room, respectively from forward.

Sea Prince's prime movers were provided by three sets of independently driven engines (output power 3 X 650 kW) and each drives a set of three fixed-pitched propellers. Sea Prince was fitted with one set of interlocked steering gear system for two rudder blades (one on each side). Sea Prince's Loadline markings (at waterline) above the baseline (lowest keel plate) gave an estimated draught 1.10 m at forward and 0.78 m at aft.

Manning

Sea Prince's manning comprised of seven Indonesian officers and ratings. The Master held a valid Indonesian "Certificate of Competency" (CoC) for Deck Officer Class IV. He joined Sea Prince on 9 December 2014 and had about a year of command experience plying the Nongsa, Batam – Singapore route. In addition, he had been a Navigating Officer on other ferries plying the same route.

At the time of the incident, the bridge team comprised the Master in-charge of conning, Chief Mate assist in navigation, Chief Engineer in-charge of main engine and machineries (operated from the bridge) and one Able Seafarer Deck as lookout.

The Chief Mate held a valid Indonesian CoC for Deck Officer Class V. He joined Sea Prince on 9 December 2014 and had about a year of experience onboard.

The Chief Engineer held a valid Indonesia CoC for Engine Officer Class V. He joined Sea Prince on 9 December 2014 and had about a year of experience onboard.

All other Officers and ratings had valid STCW Certificates at the time of accident.

PASSAGE PLAN

The approved passage plan from the Owner was drawn on MPA Chart 502.

Since, there was no evidence of chart coverage for the approach to NFT. For an analysis of Sea Prince's passage, MPA Chart 502 was super-imposed with information (aid to navigation) received from Indonesian Authority.

According to the approved passage plan, Sea Prince outbound passage through Nongsa demarcated channel would require the vessel to manoeuvre between spars extending to the last pair of lit beacons. Thereafter, passing the last pair of lit beacons, Sea Prince was supposed to head north for about 0.4 NM, passing an isolated danger mark (Terumbu Babi) on her starboard side.

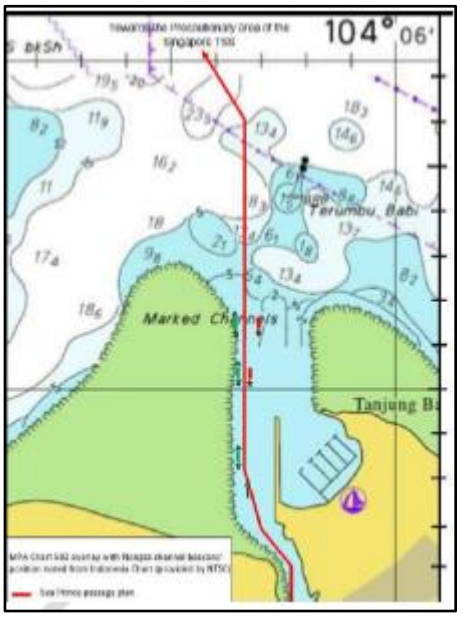

Figure 9: Passage plan

ENVIRONMENTAL FACTORS

The weather was cloudy with northerly wind at about 10 knots. The visibility was moderate with slight drizzle. The tidal stream at Singapore Main Strait (Eastern Petroleum A) was ebbing at a rate of about 1.8 knots. Because there was no tidal information for Nongsa Port, the nearest available information was from Tanjung Pinang Port.

ANALYSIS

INCIDENT

Inspections of Sea Prince's hull indicated no evidence that the incident (grounding, flooding and engine failure) was caused by contact with any floating objects.
The damages sustained by Sea Prince appeared to indicate:

- Strong impact from vessel's forward movements with an obstruction, possibly hard sea-bed, caused first grounding and damages to starboard propeller and starboard rudder blade;
- Damaged starboard propeller caused the starboard engine to be immobilised;
- Damaged rudder blade appeared bend upward, with the trailing edge cutting into the bottom hull plating before falling into the sea – caused flooding inside the steering gear room; and

- Following astern movements (using centre and port engines), resulted in the second grounding at the shallow patch north of the reef – caused the two remaining engines to be immobilised.

Following the second grounding, and after all three of Sea Prince's main engines were immobilised, Master ordered for all the passengers to be evacuated to safety.

ACTIONS BY MASTER

Navigation

It appeared that Master, without a tenable and valid safety reasons, deviating considerably from the approved passage plan immediately after passing the last pair of lit beacons was the primary causal factor to the incident (refer to diagram).

According to Master, after Sea Prince exited the last pair of lit beacons, he was using the plan that was pre-loaded in the GPS. However, unlike ECDIS18 where vessel's GPS positions were indicated directly over an electronic chart in real-time, the positions provided by the GPS only indicate vessel's real-time position relative to the course line.

The grounding further reflected the importance of passage planning, in particular, monitoring of vessel's movements on passage. It appeared that Master's inability to continuously monitor Sea Prince's movements had contributed to the incident. Had Sea Prince been fitted with an electronic chart or an ECDIS, Master could have known at a glance of any danger that lay ahead of the vessel and for taking necessary actions for the safety of the vessel.

Although, the bridge team was sufficiently manned it appeared under-utilised, as the Master kept a solo watch while conning the vessel. The Chief Mate, although present on the bridge was involved in non-navigational duties – completing documentation for the impending arrival at TMFT.

In this regard, had the Chief Mate assisted Master, in particular, on communication and monitoring of vessel's movements on passage, he could have warned Master about presence of charted shallow water along the deviated course line, thus, preventing or minimising the consequences of the grounding incident.

Prior to the incident, the multi-tasking actions of the Master are indicative of some level of complacency where other tasks such as communicating took precedence over the primary role and responsibility of ensuring safety of navigation. This complacency is likely to have arisen from his past experience, where the Master had made several passages over the area uneventfully. His subsequent actions to follow through motion after passing the last pair of lit beacons are indicative of inadequate assessment of the vessel's position with respect to the surrounding waters.

Emergency and Evacuation

Due to lack of evidence on the presence of an updated local chart for the area, Chief Mate reported sounding depth at forward of Sea Prince as 1.5 m and aft 1.3 m could not be validated.

Although, the actual sounding of charted depth was unavailable, it could be reasonably assumed that the depth where Sea Prince first grounded was about 1.90 m, while the second

grounding location, nearer to the reef was about 1.74 m (including flooding but without vessel's squat).

Sea Prince's departure aft draught was about 1.43 m. According to the damage stability booklet, steering gear room flooding would cause aft sinking of about 0.31 m, thus, would increase Sea Prince's aft draught at the second grounding to about 1.74 m.

Sea Prince's engine exhaust pipes protruding from the baseline was about 1.20m i.e. height of about 1.85 m from bottom of rudder and propellers. Given Sea Prince aft draught at second grounding location was about 1.74 m, this would give a distance from water-level to the exhaust pipes of about 0.11 m, which could eventually flood the engine room.

It thus appeared that, Master's decision to evacuate the passengers from the stranded ferry was appropriate. Although the crews were involved in managing the ingress of water into the steering gear room, when it became apparent to the Master and crew that an evacuation was imminent, they should have communicated this to the passengers to allay their fears and to provide reassurance. It appeared that Master's lack of communication and co-ordination19, had contributed to the anxieties among the passengers observing the crew moving around the passengers' cabin in haste. This could be seen during evacuation, although started orderly, easily deteriorated to panic when liferaft B began to leak.

SAFETY MANAGEMENT SYSTEM – BRIDGE PROCEDURE

Sea Prince has onboard a Safety Management System (SMS), which among others include organizational policies, procedures, manuals, checklist, etc.

The SMS provided guidance in the form of Safety Management Manual (SMM) on the importance of complying with an approved passage plan. In preparing the plan, due consideration had been taken, in particular, vessel's size and draught to ensure horizontal margin by passing objects with sufficient distance and a safety margin of minimum under keel clearance.

Therefore, had the Master been aware of the importance of passage plan, in particular, presence of obstructions and shallow water, he would not have deviated considerably from the approved plan.

This non-compliance suggests that the SMM did not meet its desired intent.

SAFETY ISSUES

Navigational Chart

During appraisal stage of passage planning, the proper use of all nautical publications and charts are important for the safety of the vessel. An updated nautical chart is a navigation aids that provides information about dynamical sand banks, current conditions, water depths, buoyage etc. In the absence of such a chart, Master was deprived of information regarding the area and had insufficient resources to make an assessment.

In this regard where a reliable underwater survey could not be determined with certainty, the local Harbour Authority should consider extending the seaward limit of Nongsa channel markings so as to prevent navigators of performing a passage over the un-surveyed area.

Additionally, the lateral limits of Nongsa channel that was marked by spars (painted with light reflective paint) would not pose a problem for navigators transiting in daylight and good visibility. However, this could not be said for transit during hours of darkness and/or restricted visibility. The channel marking itself, posed a problem because the vessel had to shine ship's light to see limit of the channel.

Although, there has been no report of marine casualty or incident within Nongsa demarcated channel as a result of the lack of appropriate aids to navigation, this report recognises the hazards associated with navigating under those conditions and are a plausible inherent risk for navigation.

In view of the inherent risks and in the interim that the channel is appropriately marked, it would be prudent for the local Harbour Authority to consider suspending the transit of Nongsa demarcated channel during hours of darkness and/or restricted visibility.

Departure Draught

There is no evidence to show Sea Prince's aft draught marking had taken into consideration the 0.65m drop in propeller and rudder from the baseline (lower part of the keel plate). This information is crucial for Master's judgement, in particular, when passing over shallow water.

The Master declaration of departure draught 1.2 m (even keel) could not be validated. Furthermore, had the forward draught read 1.2 m, it would mean that the ferry was overloaded which does not seem to be possible due to numbers of passengers onboard were less than the maximum carrying capacity.

In all probability, Master did not read the forward and aft draught, but only observed the sea level along Sea Prince's hull and used the Loadline21 markings for reference to ensure that the ferry was not overloaded.

Accordingly, the Loadline markings gave a forward draught as 1.10 m and aft draught as 1.43 m i.e. 0.65 m (propeller and rudder drop below baseline) + 0.78m (markings above the baseline).

At about 19.45 LT, immediately after Sea Prince passed the last pair of lit beacons, Master deviated from the passage plan when he altered the vessel's heading north-westerly (330°T) and increased speed to about 11.0 knots.

This would cause Sea Prince's dynamic draughts to increase as follows:

Approximate aft draught = departure draught + squat

Squat (1 x Cb x V2 / 100) = 1 x 0.4083 x 112/100 = 0.47 m

With a squat of 0.47 m and Aft draught of about 1.43m would increase Sea Prince's dynamic aft draught to 1.90 m - when passing over the shallow patch.

The increased draught provided a clearance of only about 0.40 m (2.30 m – 1.90 m) over the shallow patch.

In this regard, a prudent Master would have avoided passing over any shallow with a clearance of about 0.40 m, in particular, where sounding for the area could not be determined with certainty due to absence of an updated chart.

Certificate of Re-Inspection

Sea Prince's 'Certificate of Re-Inspection' for liferaft A and B (20 years of age), provided by Global Safety – Batam. According to IMO Resolution A.761 (18) for liferaft, the servicing intervals for

"Twentieth" year liferaft should be tested for:

- Gas Inflation (GI)
- Necessary additional pressure test (NAP)
- Floor Seam (FS) test

From the liferafts 'Certificate of Re-Inspection", it appeared that the inspections carried indicated that the tests recommended by IMO Resolution A.761 (18) at the "Twentieth" years had not been conducted, and yet the rafts were certified to be in good condition.

There is reason to believe that had the tests been conducted in compliance with IMO Resolution A.761 (18), the weakness/ defects in the liferaft, in particular, the gas bottle nozzle and the buoyancy tube could have been identified and rectified at that time.

Liferaft A

Inspection of liferaft A, in deflated condition did not show any evidences of physical damage such as hole or cut in the rubberised section of the buoyancy units or the floor unit.

Reports from passengers that liferaft A was slowly deflating, could be due to:

- Inherent leak in the buoyancy tube and gas bottles nozzles assembly; or
- The raft buoyancy units itself were having leaks that could only be noticeable when the raft is fully inflated.

Liferaft B

Inspection of liferaft B, in deflated condition, showed the raft separated and detached into three different sections, i.e. the top buoyancy unit, bottom buoyancy unit and floor unit.

Additionally, there was evidence of broken one-way safety valve tube from its assembly unit i.e. both tubes were ripped off at the base (hardened glue compound) connected to the buoyancy unit – thus, the sudden loss of air.

During normal operation of the raft, upon launching and inflated, the raft would be kept alongside, thus, the possible impact between the raft's gas bottles and ship's hull, which is not uncommon.

However, due to inherent defect in the one-way safety tube to buoyancy unit connection, which could otherwise be identified during inspections, had caused total failure in the liferaft buoyancy unit, where the tube was ripped off from its based glue compound (refer to diagram)

Due to nature of the failure, where visual inspection could not readily identify the possible occurrence, therefore, there is merit to reconsider allowing such aged (20 years) liferaft fit for use.

According to passengers' account, after the bottom buoyancy unit was deflated, the floor of the raft began to tear at the side. Under normal operating condition, the raft of the floor was held in placed by both buoyancy units. Therefore, when the bottom unit failed, higher stress was placed on the already stressed floor from passengers' weight that eventually caused the floor to tear at the side.

FINDINGS

It appeared that the primary causal factor was due to the Master, without tenable and valid safety reason, had altered the heading of Sea Prince towards Singapore prematurely and did not follow the approved passage plan i.e. immediately after clearing the last pair of demarcated channel lit beacons.

1. It appeared that the following were contributory to the grounding incident:

   - Master's inadequate technical knowledge of Sea Prince's actual draught on departure Nongsa;
   - Ineffective bridge team resource management, Master was on solo watch, while Chief Mate was involved in non-navigational duties of completing documentation for next port's formalities;
   - Master's inattentiveness to continuously monitor Sea Prince's position along the passage exiting the demarcated channel; and
   - Unavailability of an updated chart for approaches to Nongsa port.

2. The primary causal factor for failure of both liferafts, in particular, liferaft B was due to broken hardened glue compound connecting the one-way safety valve tube to the buoyancy unit.

   It appeared that the following, were contributory:

   - Liferaft last inspection was not in accordance with the recommendation provided for by IMO Resolution A.761 (18) – servicing intervals for a 20-year-old liferaft; and
   - Command and control during emergency was lacking, no specific instructions were given to passengers, in particular, procedure for boarding the liferaft.

Due to the incident, MPA's Port State and Flag State departments have enhanced their inspection regime, among others, includes compliance to passage plan and liferaft re-inspection certificate.

At about 2115 LT, all the passengers safely returned to Nongsa Ferry Terminal i.e. about half hour after evacuation. They were subsequently ferried to Singapore at about 2350 hours.

There was no serious injury or pollution reported as a result of the incident. Ferry Sea Prince sustained material damage and was deemed unfit to continue on passage. The ferry was subsequently towed back to Nongsa.

RECOMMENDATION

From analysis and conclusion chapters aforementioned above, the National Transportation Safety Committee (NTSC) Republic of Indonesia recommends below recommendations to the interested parties to prevent recurrence in the future.

HARBOUR MASTER

- Availability of an updated chart for approach to Nongsa port;
- Markings of Nongsa demarcated channel to be appropriate for transit during hours of daylight, darkness and/or restricted visibility;
- The standard of inspection carried out by Liferaft Service Provider to comply with guidelines provided by IMO Resolution A.761 (18) for different ages of the liferaft;
- The installation of ECDIS onboard ferries on international voyages; and
- Reporting of the maritime incident as required by Ferry Mishap Contingency Plan (FMCP).

THE OWNER (BATAM FAST)

To review on the importance of:

- Updated Sea Prince salient feature, in particular, on the aft draught markings, to include about 0.65 m (propeller and rudder drop below the baseline), to be posted on the bridge; and
- Review of Safety Management Manual, in particular, to include:
  - When vessel is in distress, the distress signals and messages to be activated.
  - Situational condition and updates for passengers to be announced through the onboard public-address system accordingly.

SOURCE OF INFORMATION

Harbour Master of Batam Port

Navigation District Office

Meteorology Station

Awak Kapal *KM. Sea Prince*

References

IMO Resolution A.893

IMO Resolution A.884 (21) Amendments to The Code for The Investigation of Marine Casualties and Incidents.

International code for safety management (ISM-Code)

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