

KISH P & I LOSS PREVENTION CIRCULAR KPI-LP-47-2012

(A Collision South of Dungeness & Lessons to be Learnt)

The information used here has been extracted from original MAIB report on the accident.

► Summary:

At 1014 (UTC) on 24 March 2012, the Netherlands registered cargo vessel "SB" collided with the Maltese registered liquefied petroleum gas (LPG) tanker "GA".

The collision occurred in visibility of less than 2nm, 6nm south of Dungeness while the vessels were proceeding in the same direction in the south-west lane of the Dover Strait Traffic Separation Scheme (TSS). There were no injuries or pollution, but both vessels suffered structural damage.

Following the collision both crews assessed the damage to their vessels, exchanged details and reported the accident to the coastguard. The coastguard later directed both vessels to proceed to Portland for survey and inspection.

The MAIB investigation identified that the officer of the watch (OOW) of SB, which had been overtaking GA, was distracted, was probably fatigued, and had failed to see the other vessel visually before the collision.

Although each vessel had detected and identified the other by both radar and AIS, neither OOW made a full appraisal of the risk of collision, nor took the action required by the International Regulations for Preventing Collisions at Sea 1972 (as amended) (COLREGS) to prevent the accident.

Both vessels' safety management systems (SMS) required that when the visibility was 3nm or less, a range of control measures be put in place to reduce the risk of collision. However, there was no lookout posted, or sound signal operating on either vessel at the time of the collision.

The manager of GA has taken action to prevent a recurrence by promulgating the details of the collision throughout its fleet and reminding its officers of the need to comply with the SMS on its vessels. Recommendations have been made to the owner of SB regarding compliance with hours of rest regulations, standards of bridge watch-keeping, and actions to be taken following an accident.

► Factual Information:

1-Environmental conditions:

At the time of the collision, the wind was north-east force 3 and the sea state was slight. The visibility was generally less than 3nm, with fog patches reported in the area. The tidal stream was north-easterly, 1 knot. High water at Dover occurred at 1215.

2-SB:

SB was a refrigerated general cargo vessel and operated a liner service between north-west Europe and the Caribbean. She was capable of carrying containers on deck and had four cargo holds and four cargo-handling cranes.

The vessel arrived in Dover, from the Caribbean, on the morning of 20 March and departed the same evening, on completion of cargo operations, for Hamburg, where she arrived at 1200 on 21 March. The vessel was alongside in Hamburg for 36 hours

where, in addition to cargo operations, a ship security audit was carried out by state authorities.

SB arrived at her final European port of call, Rotterdam, at 1300 on 23 March where, in addition to undertaking cargo operations, the master's son and brother-in-law embarked as passengers for the voyage to the Caribbean.

SB sailed from Rotterdam at 0020 on 24 March. The master was on the bridge for departure together with the OOW and a local pilot. The pilot disembarked at 0242, but the master remained on the bridge until 0320, when he handed over the con of the vessel to the OOW. As he left the bridge the master remarked that it had been a long day "from 0700 yesterday until now, but at least we shall sleep this afternoon".

The master returned to the bridge at 0700 when he took over as OOW. He adjusted the settings of the forward radar set, a Furuno X-Band model with Automatic Radar Plotting Aid (ARPA), and selected target information to display true vectors of 6 minutes and true trails of 3 minutes.

At 0810 the master reported the vessel's details to Dover coastguard on entry to the mandatory reporting area for vessels using the Dover TSS. The visibility then reduced and a lookout was posted. At 0844, as the vessel was approaching Dover, the master called the coastguard on VHF radio to report that visibility was 200 metres, the vessel's speed was 22.4 knots and no fog signal was being sounded. There were numerous other vessels in the vicinity, and the master manually acquired one of the closest radar targets and displayed the target data on the radar set.

At 0900 the vessel had passed Dover and the master reported to the coastguard that visibility "is improving and is more than 4 cables", the lookout was then stood down.

At 0917 SB altered course to 231°. The master was navigating by checking the vessel's position on the highway display mode of the global positioning system (GPS) receiver, in which the vessel's position was displayed within a preset corridor of a user specified width. No regular position fixes were recorded on the chart.

At 0937 the master acquired a radar target at a range of 6.5nm, directly ahead of the vessel. The target was identified on the AIS as GA; the option to display the target's data on the radar screen was not selected.

At 0955 Dover coastguard broadcast a report of visibility conditions throughout the Dover Straits. The visibility in SB's area was reported as being 1.5nm.

The master's son was also on the bridge, sitting at a computer near the port bridge wing door. He was accompanied by the master's brother-in-law. At 1006 the master held a conversation with his son regarding the receipt, via the internet, of a Dutch electronic newspaper.

At 1008 the second officer entered the bridge to take orders for the vessel's bonded store, and there was a general, light hearted conversation regarding orders for goods. At 1013 the second officer left the bridge, and at 1014 the master suddenly exclaimed "Oh, look ahead, we're going to hit". At 1014:09 SB collided with GA.

3-GA:

The LPG tanker GA traded between north-west European ports and was on passage from Immingham to Portland, in ballast, when the collision occurred.

Before calling at Immingham the vessel had sailed from her previous port with a known fault on the gyro compass repeater system; this fault had disabled the ARPA function on the vessel's radars.

Flag state and class dispensations were issued to permit the vessel to remain in service on the condition that the fault was fixed within 1 month, and an extra lookout was posted when the vessel was "manoeuvring in coastal waters". A risk assessment for operation of the vessel with the gyro repeater fault had been completed before departure and this had been countersigned by the vessel's bridge watch-keepers.

GA's call at Immingham was not scheduled, but she had anchored off the port on 22 March to effect emergency engine repairs. The vessel had resumed passage to Portland on 23 March, at a reduced speed of 8 knots, pending permanent engine repairs.

On 24 March at 0500, the vessel was off the Thames estuary when visibility reduced to below 3nm and, in accordance with the vessel's SMS, the master was called to the bridge.

At 0845 the vessel had passed Dover and visibility was 1.5nm when the master left the bridge and the lookout was stood down, leaving the OOW, the third officer (3/O), alone on the bridge.

After he had left the bridge the master went to assist other officers engaged in equipment maintenance one deck below the bridge, at the aft end of the accommodation block.

At 0943 the 3/O observed a target on radar, 6nm astern, which he identified on AIS as being SB. GA's AIS display had a feature which allowed the 3/O to observe that the closest point of approach (CPA) of SB was 0.3nm.

At 0950 several small fishing vessels were observed ahead on either side and within 1.5nm of GA. The 3/O made an alteration of course, of about 5° to starboard, to increase the CPA of the nearest fishing vessel, which was passed on the port side at a range of about 0.4nm.

At 1000 the 3/O again observed SB on AIS when she was about 3nm astern with a CPA of zero; he could not see the vessel visually at that time. He took no action to contact the other vessel because he expected it, as the overtaking vessel, to keep clear. He was also plotting the GA's position onto the paper chart at frequent intervals during this period.

At 1012, the master looked up from his work at the aft end of the accommodation and saw SB very close astern and on a collision course. He ran to the bridge, engaged hand-steering and put the wheel hard-to-port. GA's heading had been 233°, she began to swing to port and was heading 194° when the collision occurred.

4-The Collision:

The point of collision was between the port bow of SB, which had maintained her heading, and the starboard quarter of GA.

GA suffered a breach of her hull, shell indentation and damage to fairleads and railings on her starboard quarter. SB was holed on the port bow and her collision bulkhead was penetrated.

SB



GA



5-After the Collision:

Following the collision, both masters mustered their crews and contacted the other vessel to establish if there were any injuries, the extent of damage caused, and if any assistance was required.

The coastguard was informed of the accident and search and rescue assets were mobilised. These were subsequently stood down once it was established that the vessels did not require their assistance.

In accordance with GA's SMS, the master used a breath analyser to test the crew for alcohol a short time after the accident. The following day, the crew were also tested for drug and alcohol consumption by an independent contractor. All the tests proved negative.

SB's SMS stated that "after any serious maritime accident, an alcohol test must be carried out on the master and officer of the watch and any crew involved", and indicated that this be achieved through the use of a breath analyser test. No alcohol tests were undertaken on SB.

6-The Crews:

SB: The master held an STCW5 II/2 Certificate of Competency (CoC), and kept bridge watches at sea between 0800-1200 and

2000-2400. He was Dutch, 60 years old and had been master for 12 years.

The master had joined in January for a 3 month tour of duty, on completion of which he planned to retire. The master held the normal command responsibilities in addition to being an OOW, and he was stationed on the bridge for all port arrivals and departures. He was also responsible for the conduct of the vessel's business requirements while in port.

In addition to the master there were two other bridge watch-keeping officers: the chief officer who was Ukrainian, and the second officer who was French.

GA: The master held an STCW II/2 CoC. He was Sri Lankan, 42 years old and had worked for the vessel's owners for 10 years. He had been master for 14 months and had joined in December 2011. He did not keep bridge watches.

The 3/O held an STCW II/1 CoC. He was a Filipino, 35 years old and had been a third officer for 4 years, prior to which he had been a seaman for 10 years. He had been on board for 4 months of a 6 month contract.

In addition to the 3/O there were two other bridge watch-keepers, the chief officer and the second officer, both of whom were Filipino.

► Analysis:

1-ColRegs:

The reconstruction of the ground tracks on GPS information, confirms that SB was overtaking GA and made no alteration of course before the collision.

As the overtaking vessel, SB had a duty to keep clear of GA in accordance with Rule 13 of the COLREGS, which requires that "any vessel overtaking another shall; keep out of the way of the vessel being overtaken".

However, GA also had a duty, in accordance with Rule 17, which requires a stand-on vessel to take action to avoid collision "as soon as it becomes apparent to her that the vessel required to keep out of the way is not taking appropriate action". It is unfortunate that in altering course 5 degrees to starboard at 0950, to increase the passing distance from a fishing vessel, GA OOW probably increased the likelihood of a collision.

That neither vessel took early avoiding action to avoid collision indicates that the watch-keepers on both vessels were not keeping a proper lookout, as required by Rule 5 of the COLREGS.

2-Safety Management System – reduced visibility:

The SMS of both vessels required that control measures be implemented in visibility of less than 3 miles.

SB's SMS required the master to be called and a fog signal to be sounded. The master was already on the bridge, as the OOW, when the vessel encountered reduced visibility, but no other control measures were taken. Although the SMS did not stipulate that a lookout should be posted in reduced visibility, one had been present until the vessel passed Dover when he was stood down, even though the visibility at that time was reported by the master as being 4 cables.

SB thus maintained full speed and did not sound a fog signal in visibility of only 4 cables, contrary to the requirements of the COLREGS, Rules 6, 19 and 35.

GA'S SMS, reiterated in the master's standing orders, required the master to be called, a lookout posted and sound signals to be sounded. These measures were initially complied with, but were relaxed once the vessel had passed Dover, even though the visibility was still less than 3 miles.

Both masters appear to have relaxed their navigation control measures on passing Dover. While the area off Dover may require increased vigilance due to the presence of the cross-channel ferries, both vessels were still navigating within the constraints of a busy TSS, and in restricted visibility, and therefore the masters' decisions to stand down their lookouts were premature. The SMS of both vessels should have been consistently complied with, particularly in respect of navigation in reduced visibility.

3-Radar plotting:

SB's master manually acquired the target of GA on the ARPA radar 37 minutes before the collision, when she was more than 6nm ahead. Although he could have displayed the target information on the radar display, he chose not to and the opportunity to visually monitor the target's data was not taken.

The master selected true vectors and true trails for targets on the ARPA radar. This selection had the disadvantage of giving no relative information of a target, unless it was selected for display, which the master did not do. With GA directly ahead, the radar heading line and SB's own vector might have combined to obscure the radar target's vector unless the heading line was occasionally switched off; and there is no evidence to suggest the master was doing this. Further, as SB's radar was on the 12 mile range scale, GA's radar echo became less distinct as its range decreased.

The fact that the target data of GA was not displayed meant that there was no stimulus to the master once the target had merged with the vessel's own heading line and vector as the likelihood of collision increased.

4- Distraction:

The master's relatives were on SB's bridge, and in the time between him acquiring GA on radar and the collision he was mostly talking with his son. The second officer arrived on the bridge shortly before the collision and the master engaged in a conversation about bonded stores. These conversations resulted in the master being distracted from his primary role of watch-keeping, and also caused him to forget having earlier acquired a radar target right ahead of his vessel.

The need to minimise distractions in busy shipping situations is paramount, and many shipping companies are now adopting a 'Red Bridge' system that rigorously controls access to the bridge during such periods. Had a similar system been operated on board SB, not only would the master have been dissuaded from inviting his relatives to the bridge during the Dover TSS transit, but the second officer would have realised that it was an inopportune time to discuss bonded store orders. Given the additional complication of the restricted visibility, the master's willingness to allow non-essential personnel on the bridge was a significant error of judgment that resulted in him being distracted from his duties at a crucial time.

5-Bridge visibility:

The SB master was standing in the vicinity of the forward radar at the time of the collision, and evidence from the vessel's voyage data recorder (VDR) shows that he had occasionally monitored the radar display. However, the master was unable to see GA

from that location due to a blind sector caused by a combination of the wheelhouse window frame and the cargo cranes, and he first became aware of her presence after she altered course to port and appeared to the left of the blind sector.

SOLAS Chapter V, Regulation 22 sets maximum permissible blind sectors from the conning position on vessels built after 1 July 1998. Although these regulations do not apply to SB as she was built in 1984, the visibility from the bridge did comply with the new regulations.

On vessels with wheelhouse blind sectors, it is important that the OOW/lookout moves around the bridge frequently to ensure that a proper lookout is maintained at all times. This was not the case at the time of the collision as the master had stationed himself at the radar display, a not unreasonable course of action in restricted visibility, and the lookout that should have been available to back him up had been stood down.

6-Fatigue:

SB's master had experienced a busy schedule in the days preceding the accident. He was on the bridge during arrival and departure from the three ports of call after 20 March, which, combined with the shore authorities' demands on his time in port, would have not allowed him to achieve his normal hours of rest.

When the master left the bridge at 0320 on the day of the accident, he commented that he had not had much rest in the preceding 20 hours. He then had less than 3 hours of rest before returning to the bridge for his watch at 0700. Following the collision he also remarked that he had been working extremely long hours, and expressed surprise that collisions were not more frequent.

The master's fatigue would have begun to increase from the time SB arrived in coastal waters on 19 March, after which he was unable to take his regular rest periods or take sufficient compensatory rest. This build-up of sleep debt and disruption to his circadian rhythm probably resulted in the master suffering the effects of fatigue. In this accident, the master made some ill-judged decisions with respect to manning and safe speed, was easily distracted, forgot important information, and failed to appreciate the increasing risk of collision, all of which can be attributed to fatigue.

7-GA concerned points:

On GA, in addition to the instructions in the SMS for a lookout to be posted if the visibility reduced below 3nm, there was an imperative for a lookout to be available. The gyro compass repeater fault rendered GA's radar ARPA facility inoperable, and the flag state/class dispensation required an extra lookout to be posted when manoeuvring in coastal waters. However, despite these two requirements no dedicated lookout was present at the time of the collision.

The 3/O was an experienced watch-keeper with a good record, there is no evidence to suggest that he was fatigued, yet he failed to take any action to avoid a collision. He had monitored SB until she was 3nm astern and had assumed that, as the overtaking vessel, she would keep clear. However, the 3/O was fixing manually and plotting the ship's position regularly on a paper chart, during which time he was distracted from maintaining an effective lookout. In this instance, the need to fix frequently, combined with the need to maintain a good lookout in busy waters and restricted visibility, required that the bridge manning be reviewed and, as a minimum, that a lookout should

remain closed-up. With extra manpower available to him, the 3/O would have had the capacity to call SB on VHF to query her intentions, to monitor her movements more carefully, and to take avoiding action in good time if necessary. In the event, it was the master's prompt action of running to the bridge and altering the vessel's course that prevented the consequences of the collision from being much more serious.

► Conclusions:

- ✓ The collision occurred because neither OOW was keeping a proper lookout as required by the COLREGS. (Lack of Proper Look-Out)
- ✓ Neither OOW continued to monitor the other vessel in order to make an appraisal of the risk of collision after initially detecting the other vessel on radar and AIS. (Inadequate Use of Equipment & Monitoring Techniques)
- ✓ Neither vessel had a lookout posted at the time of the collision even though the visibility was restricted within the definition of the SMS of both vessels. In the case of GA, this was contrary to the vessel's SMS. (Insufficient Bridge Resources-Manning)
- ✓ SB's SMS did not require an additional lookout to be posted in restricted visibility. (Safety Management System Shortcomings)
- ✓ SB's master became distracted by various personnel for non-operational reasons immediately prior to the collision, which a formal system, which controlled access to the bridge, would have prevented. (Distraction of Bridge Personnel-BRM Inefficiency)
- ✓ SB's master did not visually see GA until it was too late to avoid collision as a result of the blind sectors created by the cranes, and his failure to move around the bridge. (Insufficient Bridge Resources- Bridge View Problems)
- ✓ SB's master was probably fatigued due to the cumulative effects of his hours of work and disrupted ability to take his normal rest during the days preceding the collision. (Problems with Work & Rest Periods)
- ✓ SB had maintained full speed and did not sound a fog signal in visibility of only 4 cables, contrary to the requirements of the COLREGS, Rules 6, 19 and 35.

GA' SMS, reiterated in the master's standing orders, required the master to be called, a lookout posted and sound signals to be sounded. These measures were initially complied with, but were relaxed once the vessel had passed Dover, even though the visibility was still less than 3 miles. Thus the navigation management of both vessels was relaxed once the vessels had passed Dover. (Complacency in Following the Requirements)
- ✓ A far more serious outcome was avoided only because GA's master looked up from his work and saw SB close astern. If he had not run to the bridge and immediately altered course, the damage caused by the collision would have been much more severe, particularly to GA.