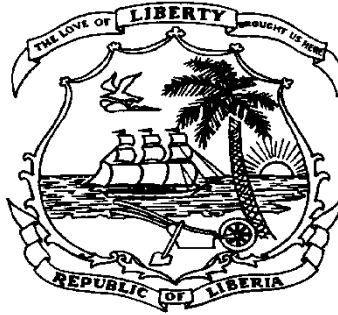


REPUBLIC OF LIBERIA



DECISION OF THE COMMISSIONER OF MARITIME AFFAIRS REPUBLIC OF LIBERIA

And

**The Report of the Investigation
Into the Allision incident involving the
Liberian Bulk Carrier NEW LEGACY (IMO No: 9804942) and the
Malta Registered Bulk Carrier DENSA TIGER (IMO No: 9432476)
Causing the foundering of a Bangladesh local cargo barge CHAR SHAMAIL,
And resulted in missing crew members of the barge
At Chittagong Anchorage, Bangladesh
On September 29, 2018.**

PUBLISHED BY THE LIBERIA MARITIME AUTHORITY

**December 20, 2019
Monrovia, Liberia**

The Flag Administration has a mandate to promote safety of life and property at sea, and the prevention of marine pollution. This is achieved in part by conducting investigations of marine casualties involving vessels in the registry for remedial purpose in accordance with the Republic of Liberia Maritime Law and Regulations. Marine investigations, which are administrative in nature, determine the root cause of casualties; recommend means of avoiding them in the future, possible violations of law, and any faults or failures on the part of personnel, ship-owners or operators, which might require action in respect to any relevant licenses, certificates or documents.

It is not the purpose of the investigation nor function of the Administration, to assign fault or determine civil or criminal liability with respect to enhancing the litigation posture of any party. The Administration must report, or cause to be reported, the circumstances and proximate cause or causes of a marine casualty and any contributory factors. However, where it is determined that there exists evidence of criminal conduct under the Laws of the Republic of Liberia on the part of any seafarer holding a Liberian Certificate of Competency or other official document, the matter would be referred to the Ministry of Justice of the Republic of Liberia for appropriate action.

Disclaimer:

This Report and any appended Commissioner's Decision, set forth certain findings, which have been ascertained or determined up to the time of its issuance, and is published to alert the shipping industry and the public of the general circumstances of the incident. While every effort has been made to ensure the accuracy of the information contained in this Report, this Administration and its representatives can accept no liability for any error or omission alleged to be contained herein.

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Moreover, this Report cannot be used in a court of law as evidence without authentication and without obtaining express permission from the Deputy Commissioner of Maritime Affairs, Republic of Liberia. The said permission is at the discretion of the Deputy Commissioner of Maritime Affairs.

**DECISION OF THE COMMISSIONER OF MARITIME AFFAIRS
REPUBLIC OF LIBERIA**

And

**The Report of the Investigation
Into the Allision incident involving the
Liberian Bulk Carrier NEW LEGACY (IMO No: 9804942) and the
Malta Registered Bulk Carrier DENSA TIGER (IMO No: 9432476)
Causing the foundering of a Bangladesh lighter cargo barge CHAR SHAMAIL,
And resulted in missing crew members of the barge
At Chittagong Anchorage, Bangladesh
On September 29, 2018.**

AUTHORITY

This Decision is rendered pursuant to the provision of Section 258 of Liberian Maritime Law and Liberian Maritime Regulation 9.258(7).

COMMENT

On September 29, 2018 at about 1110H LT (*all times are in local time*), while the bulk carrier NEW LEGACY (IMO No: 9804942) was engaged in cargo lightering operations, loading cargo steel scrap in bulk, with few lightering cargo barges, two (2) moored alongside in her starboard side, and one (1) in the portside, dragged her anchor at Chittagong (A) anchorage, Bangladesh, position Lat 22-14.93 N Long 091-45.37 E.

The anchor dragging caused the vessel to allide with a nearby bulk carrier the DENSA TIGER (9432476) which is also at anchor. The allision incident between the bulk carriers caused one of the two (2) local cargo barges moored alongside the starboard side of the NEW LEGACY, including the Bangladesh registered barge CHAR SHAMAIL to make contact and was crushed between both allided vessels.

This incident resulted into the foundering of the CHAR SHAMAIL, and two (2) of her crew members went missing as the crew jumped overboard to abandon their foundering vessel. It was later reported that deceased bodies of persons were found washed ashore and were identified as the two missing crewmembers were recovered.

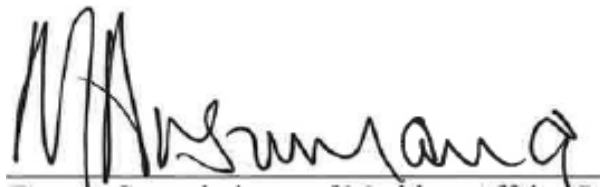
ACTION

1. The Report of Investigation, along with the Findings of Fact, Conclusion and Recommendations, is approved.

2. It is directed that this Decision is published together with the Report of Investigation.
3. It is directed that a copy of this Decision and Report of Investigation be provided to the vessel's Owner/Operator, HSIN CHIEN MARINE CO., LTD.
4. The undersigned will cause a copy of this Decision and Report of Investigation to be forwarded to the Secretary-General of the International Maritime Organization (IMO).

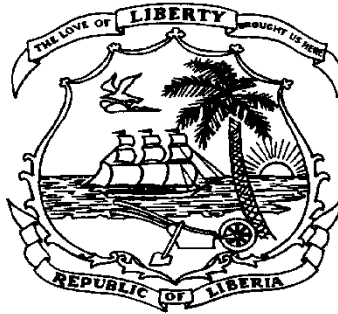
Done in Dulles, Virginia. USA.

This 20th day of December, A.D. 2019

A handwritten signature in black ink, appearing to read 'M. Sumana', written over a horizontal line.

Deputy Commissioner, Liberia Maritime Authority, R.L.
REPUBLIC OF LIBERIA

REPUBLIC OF LIBERIA



LIBERIA MARITIME AUTHORITY

**The Report of the Investigation
Into the Allision incident involving the
Liberian Bulk Carrier NEW LEGACY (IMO No: 9804942) and the
Malta Registered Bulk Carrier DENSA TIGER (IMO No: 9432476)
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PUBLISHED BY THE LIBERIA MARITIME AUTHORITY

**December 20, 2019
Monrovia, Liberia**

**The Report of the Investigation
Into the Allision incident involving the
Liberian Bulk Carrier NEW LEGACY (IMO No: 9804942) and the
Malta Registered Bulk Carrier DENSA TIGER (IMO No: 9432476)
Causing the foundering of a Bangladesh lighter cargo barge CHAR SHAMAIL,
And resulted in missing crew members of the barge
At Chittagong Anchorage, Bangladesh
On September 29, 2018.**

INTRODUCTION

On September 29, 2018 at about 1110H LT (*all times are in local time*), while the bulk carrier NEW LEGACY (IMO No: 9804942) was engaged in cargo lightering operations, loading cargo steel scrap in bulk, with few lightering cargo barges, two (2) moored alongside in her starboard side, and one (1) in the portside, dragged her anchor at Chittagong (A) anchorage, Bangladesh, position Lat 22-14.93 N Long 091-45.37 E.

The anchor dragging caused the vessel to allide with a nearby bulk carrier the DENSA TIGER (9432476) which is also at anchor. The allision incident between the bulk carriers caused one of the two (2) local cargo barges moored alongside the starboard side of the NEW LEGACY, including the Bangladesh registered barge CHAR SHAMAIL to make contact and was crushed between both allided vessels.

This incident resulted into the foundering of the CHAR SHAMAIL, and two (2) of her crew members went missing as the crew jumped overboard to abandon their foundering vessel. It was later reported that deceased bodies of persons were found washed ashore and were identified as the two missing crewmembers were recovered.

AUTHORITY

PLEASE TAKE NOTICE that under the authority granted by Section 9.258(1) of Liberian Maritime Regulations, an investigation commenced to determine as closely as possible the cause or any contributing factors into the matter of the allision incident involving the Liberian Bulk Carrier NEW LEGACY (IMO No: 9804942) and the Malta Registered Bulk Carrier DENSA TIGER (IMO No: 9432476), causing the foundering of a Bangladesh lighter cargo barge CHAR SHAMAIL, and resulted in missing crew members of the barge at Chittagong Anchorage, Bangladesh on September 29, 2018.

By direction of the Deputy Commissioner of Liberia Maritime Authority, Republic of Liberia, the Liberian Marine Investigation Department appointed an Investigating Officer, pursuant to Section 9.258(4) of Liberian Maritime Regulations to conduct the investigation onboard the vessel NEW LEGACY few days after the incident.

This report is made in accordance with the Liberian Maritime Regulations, 9.258(6), IMO Resolution MSC.255 (84), adopted on May 16, 2008, Adoption of the Code of the International Standards and Recommended Practices for a Safety Investigation into a Marine Casualty or Marine Incident (Casualty Investigation Code) as amended, effective from January 1, 2010, the United Nations Convention on the Law of the Sea (UNCLOS), and the International Conventions to which Liberia is a Party.



The Liberian Registered Bulk Carrier NEW LEGACY Taken at Chittagong Anchorage Following the Incident

VESSEL PARTICULARS

IMO NUMBER	9804942
VESSEL NAME	NEW LEGACY
TYPE OF SHIP	BULK CARRIER
LENGTH	180.0 METERS
BREADTH	30.4 METERS
DEADWEIGHT	39,042
GRT/NRT	24,203 / 12,215
CALL SIGN	D50A2
OWNER / MANAGER	HSIN CHIEN MARINE Co,LTD.
YEAR BUILT	2017

BUILDER	SHIKOKU DOCKYARD CO, LTD.
CLASS	NK

The Liberian registered bulk carrier NEW LEGACY (IMO No: 9804942) is a 24,203 GT vessel with 19 crewmembers onboard. At the time of the incident, the vessel has a full complement of seafarers, with valid certificates in accordance with STCW'78 as amended, and the Minimum Safe Manning Certificate, as issued by the Republic of Liberia.

The NEW LEGACY (IMO No: 9804942) is equipped with Global Positioning System. The navigation on board is paperless and the vessel is fitted with duplicated ECDIS Transas Navi-Sailor 4000 model as primary source of determining position. The collision avoidance equipment includes sets of S- Band and X-Band Radars; with capability of automatic radar plotting and tracking; Gyro and Magnetic Compasses, all adjusted, Steering panel capable of manual and automatic steering functions, emergency steering control with follow up and non-follow up units, with two (2) steering motors. Automatic Identification System (AIS), Echo Sounding equipment, and Bridge Navigation Watch Alert System (BNWAS).

A 5- cylinder Mitsui MAN B&W 5S50ME, 2- stroke, low-speed power the NEW LEGACY, single-acting, direct drive marine diesel engine, producing 6,050 kW of power at 99 rpm. The vessel was also fitted with five cargo holds and four deck cranes, fitted along the centerline of the vessel.

All navigation equipment were all found operational, and in compliance with the requirements of Liberian regulations, and international conventions at the time of investigation. HSIN CHIEN MARINE CO. LTD. Taipei, Taiwan manages NEW LEGACY



The Malta Registered Bulk Carrier DENSA TIGER (Photo Courtesy: www.marinetraffic.com)

IMO NUMBER	9432476
VESSEL NAME	DENSA TIGER
TYPE OF SHIP	BULK CARRIER
LENGTH	189.9 METERS
BREADTH	32.26 METERS
DEADWEIGHT	55,089
GRT	31,029
CALL SIGN	9HA2417
OWNER / MANAGER	TIGER SHIPPING & TRADING LTD. /MARINSA DENIZCILIK AS
YEAR BUILT	2010
BUILDER	COSCO KHI NANTONG SHIPYARD – NANTONG, CHINA
CLASS	ABS

The Malta registered bulk carrier DENSA TIGER (IMO No: 9432476), is a 31,029 GT vessel with 19 crewmembers onboard. At the time of the incident, the vessel has a full complement of seafarers, with valid certificates in accordance with STCW'78 as amended, and the Minimum Safe Manning Certificate, as issued by the Republic of Malta.

DENSA TIGER is owned by Tiger Shipping and Trading Ltd., managed by Marinsa Denizcilik A.S., and classed with the American Bureau of Shipping (ABS).

A 6- cylinder Hudong 6S50MC-C MK VII, 2- stroke, low-speed power DENSA TIGER, single-acting, direct drive marine diesel engine, producing 8,200 kW of power at 110 rpm. This drove a single, fixed pitch propeller, to reach a service speed of about 15 knots. The vessel was fitted with five cargo holds and four deck cranes to facilitate loading and unloading of cargo. The cranes were fitted along the centerline of the vessel



The Bangladesh Registered Inland Dry Cargo Barge CHAR SHAMAIL Seen Foundering on September 29, 2018)

FLAG	BANGLADESH
VESSEL NAME	CHAR SHAMAIL
TYPE OF SHIP	INLAND DRY CARGO LIGHTERING BARGE
LENGTH	<i>UNKNOWN</i>
BREADTH	<i>UNKNOWN</i>
DEADWEIGHT	650
GRT	495
CALL SIGN	<i>UNKNOWN</i>
CONSTRUCTION	STEEL
YEAR BUILT	<i>UNKNOWN</i>
BUILDER	<i>UNKNOWN</i>
CLASS	<i>UNKNOWN</i>

The Bangladesh registered inland dry cargo barge CHAR SHAMAIL was reported to be a 495 GT and 650 DW vessel, single cargo hold, constructed of steel, and designed to carry dry cargoes. She was reportedly designed to trade within the inland waters of Bangladesh, and had permission to cross the waters contained within the outer anchorage areas of Chittagong. At the time of the incident, the CHAR SHAMAIL and two (2) other lightering barges were moored alongside the both sides of the hull of the NEW LEGACY.

The other lighter vessel PRINCE OF RIDWAN was made fast abreast cargo holds No.1 and 3, and barge CHAR SHAMAIL was made fast abreast cargo hold No.4 and 5, both on the starboard side of NEW LEGACY. Another barge SAFINA BAHAR was made fast on the port side of the NEW LEGACY. The draft of the NEW LEGACY at the time of incident was about 8.4 meters at forward and 8.6 meters at aft and total cargo remaining on board was about 27,000 Metric. Tons.

INVESTIGATION

PLEASE TAKE NOTICE that under the authority granted by Section 9.258(1) of Liberian Maritime Regulations, a flag State investigation was conducted on behalf of the Office of the Deputy Commissioner of Maritime Affairs, Liberia Maritime Authority, and appointed a local Investigating Officer, who attended onboard the vessel NEW LEGACY (IMO No: 9804942) at the Port of Chittagong Anchorage “C”, Bangladesh on October 16, 2018.

The Investigation Division of the Office of the Deputy Commissioner of Maritime Affairs, Republic of Liberia, coordinated and sent a notice of cooperation under the provisions of the IMO Code for Casualty Investigation, to Republic of Malta, Marine Safety Investigation Unit (MSIU), and the Bangladesh flag Administration as a Substantially Interested State (SIS). The incident was investigated in cooperation with MSIU. In addition, the SIS and other interested parties communicated both electronically, as essential for the review and analysis of evidences collected.

The Investigation Division of the Office of the Deputy Commissioner of Maritime Affairs received a press report about incident on September 30, 2018 and immediately contacted the managers of the NEW LEGACY to request for preliminary information on the incident. At the same time, the

Malta MSIU also sent an e-mail notification about the incident. At the time of investigation, all the officers and crew of the NEW LEGACY were interviewed based on their participation during the incident.

The Liberian investigating officer was not able to attend the vessel DENSA TIGER, however significant facts as necessary to complete the investigation was provided by MSIU under the spirit of cooperation.

All ships documents were inspected and reviewed, including but not limited to Ship's certificates and other relevant documents such as Ships Particular, Crew List and Crew CoC, SMS Checklist, Rest Hour Records, Bridge and Engine Logs, Movement Book Logs, Port log, Radio log, Passage plan, etc. Relevant crew Statements, Shipboard Working Arrangement, Weather Reports, Ship's photographs and VDR, were examined and records collected as evidences for this investigation report (some evidences were available in copy-pdf file, some of them in photos and some of them by hand writing).

FINDINGS OF FACT

1. NARRATIVE

NEW LEGACY

The NEW LEGACY arrived at the 'A' anchorage of the Chittagong port on September 25, 2018 and at 2350 LT anchored at position 22^o 13.5' N and 091^o 46.1 E (*shown in Figure-1*). The vessel arrived with drafts of 9.80 m at forward and 10.45 m at aft, laden with 35,200 MT of "Carbon Steel Scrap in bulk" cargo from Portland, Oregon, USA.

Discharging of the 35,200 MT of carbon steel scrap cargo commenced at 0800 LT on 2September 26, 2018 by ship's cranes to self-propelled inland dry cargo barges made fast alongside on her both sides. The barges that moored and made fast alongside the NEW LEGACY in her starboard hull were the PRINCE OF RIDWAN and the CHAR SHAMAIL. In the port side hull of the NEW LEGACY was the SAFINA BAHAR.

The mooring arrangements shows that the lighter barge PRINCE OF RIDWAN was made fast abreast cargo holds No.1 and 3, and the other lighter barge CHAR SHAMAIL was made fast abreast cargo hold No.4 and 5, both on the starboard side of NEW LEGACY. Another barge SAFINA BAHAR was made fast on the port side of the NEW LEGACY.

During the cargo lightering operation, as reported, the NEW LEGACY was continuously dragging her anchor, and to offset the drag, her main engine was used to maintain her anchor position while continuing cargo discharge operation to the barges, by keeping it on standby, and operating low engine revolutions when drifting and dragging is noted.

From the record of the port authority, it appeared that DENSA TIGER arrived at the 'A' anchorage of the Chittagong port on September 23, 2018 at 1340 LT. The barge CHAR SHAMAYEL was a steel constructed dry cargo ship of 495 GT and carrying capacity of approximately 650 M. Tons, designed for trading in inland waters of Bangladesh and having permission to cross the sea area of the Chittagong outer anchorage.

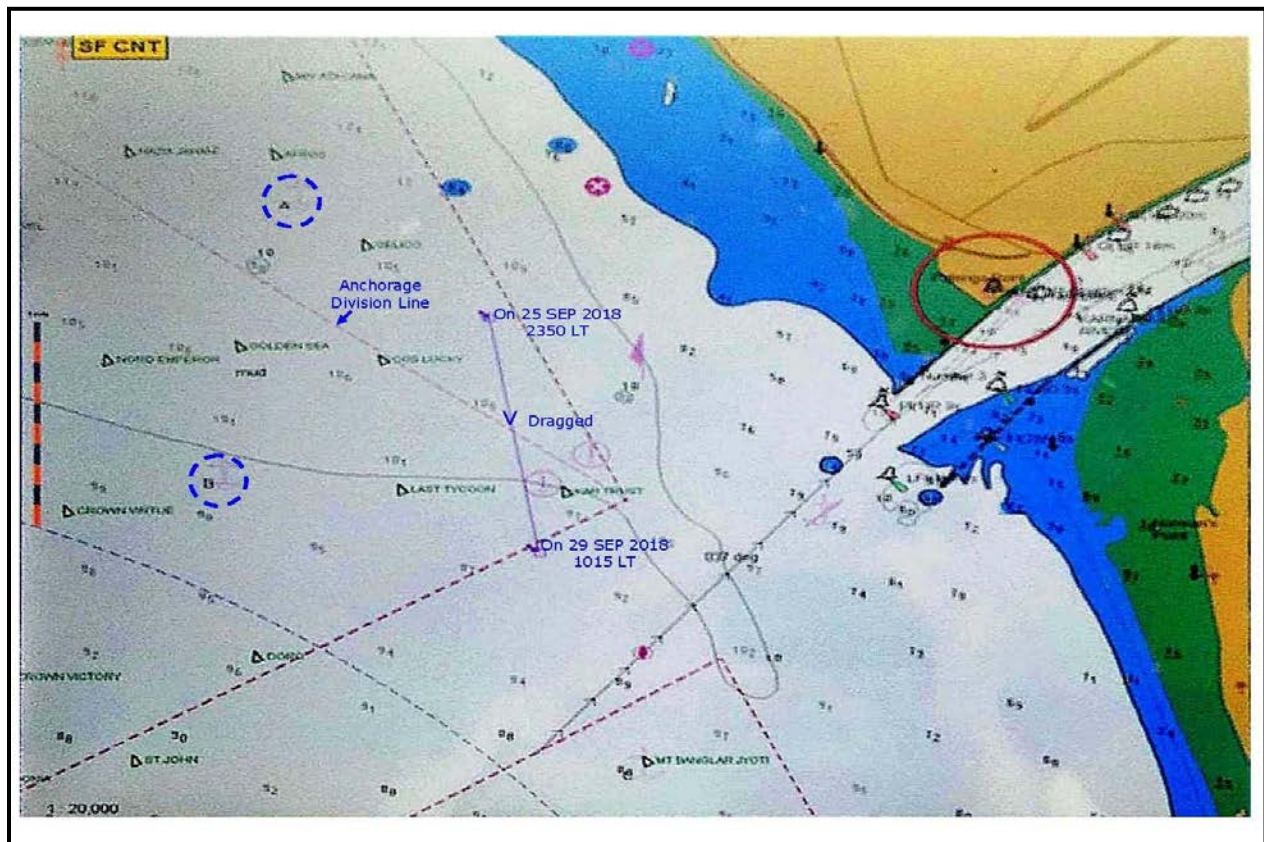


FIGURE 1 - *The Lightering Anchor Position of the NEW LEGACY*

At about 0600 LT on September 29, 2018, the 3rd Officer of the NEW LEGACY came to the bridge for anchor watch. While on watch, the 3rd Officer received the VHF call from the Port Radio Control at 0956 LT instructing the vessel to shift the anchor position. The 3rd Officer immediately contacted and informed the Master of the call. At about 1005 LT, the Master informed the Engine Room about the shifting as instructed by the Port Radio Control, and the continuous use of the main engine for maneuvering.

At 1015 LT, NEW LEGACY was at position 22°12.35' N, 091°46.3' E during the course of dragging her anchor. At that time the Chittagong port control radio station called the vessel on VHF radio and informed that the vessel was too close to pilot boarding station, and asked the vessel to shift to a suitable area in the anchorage.

After receiving the instruction from the Port Control Radio station to shift the anchor position, the Master of NEW LEGACY intended to proceed and re-anchor close to her initial position at the Chittagong 'A' anchorage.

As the NEW LEGACY is about to get underway and under her own power, the Master decided to continue her cargo lightering and discharging her cargo to three barges moored both sides of the hull of the NEW LEGACY. The lighter vessel PRINCE OF RIDWAN was made fast abreast cargo holds No.1 and 3, and barge CHAR SHAMAIL was made fast abreast cargo hold No.4 and 5, both on her starboard side. Another barge SAFINA BAHAR was made fast on the port side of the vessel. The draft of the vessel was about 8.4m at forward and 8.6m at aft and total cargo remaining on board was about 31,440 metric tons.

The NEW LEGACY started heaving up her anchor at 1020 LT and the anchor was aweigh at 1048 LT. The three barges were not casted off and remained alongside the vessel while the vessel was proceeding for a new anchoring position. On the bridge of the NEW LEGACY were the Master, the duty 3rd Officer, an AB operating the helm steering.

At 1055 LT when the vessel was about to drop anchor, the Port Control Radio station advised not to anchor at 'A' anchorage and proceed to 'B' anchorage and drop anchor, as the vessel's draft was suitable for 'B' anchorage. The Chittagong A' and 'B' anchorages and the line of division are shown in *Figure-1* of this report.

Due to the advise of the Port Control Radio station, the Master of the NEW LEGACY decided to move to another anchor position, and the vessel started maneuvering to arrive at 'B' anchorage. It was observed by the Master that there were a number of vessels anchored near and within the vicinity of the anchorage 'B'.

At that same time, with the combination of strong tidal current, the slow speed the NEW LEGACY was making, and also the weight and forces of three (3) barges moored and made fast on both the port and starboard hull, the Master observed that his vessel was having difficulty to maneuver through density of vessels at anchor in the vicinity. During the maneuver, the Master of NEW LEGACY intended to cross the bow of the anchored vessel DENSA TIGER, but under the influence of tidal current, pushing the NEW LEGACY towards the DENSA TIGER, and despite the increase in propulsion RPM to half ahead, the full ahead, and hard port helm order, the distance from the bow of DENSA TIGER could not be maintained and the starboard side aft hull area of NEW LEGACY allided, and made contact with the bow of DENSA TIGER at about 1109 LT.

The inland cargo barge CHAR SHAMAIL was at the starboard aft side of NEW LEGACY at the time of the contact, and she was crushed between the two vessels resulting in her severe breach to her hull, and causing in her foundering in less than five (5) minutes.

As the CHAR SHAMAIL was taking in water so fast, there was no more time to muster, and the crew on board the severely damaged vessel jumped into the sea. Majority of the crew were rescued by fishing boats except for two crew were missing and their body was found and identified by families and friends at a later stage. Number of crew onboard the CHAR SHAMAIL was not determined in this investigation.

The sequence of the collision incident is shown in the following snapshots taken from the ECDIS play back of the vessel NEW LEGACY (*shown in Figure 2 to 6*).

The low water was at 0916 LT on September 29, 2018 and the vessel was maneuvering during the flood tide with current in northerly direction.

The weather conditions were good with clear sky, good visibility and westerly wind 10 to 15 knots.

The track of NEW LEGACY from heaving up anchor at 1048 LT on 29 September 2018 until dropping anchor at 'B' anchorage at 1200 LT, is (*shown in the Figure -7*). The location of collision is the position of DENSA TIGER in the diagram shown by an arrow.



FIGURE 2 ECDIS Playback Position of the NEW LEGACY



FIGURE 3 ECDIS 2 Playback Position of the NEW LEGACY



FIGURE 4 *ECDIS3 Playback Position of the NEW LEGACY*

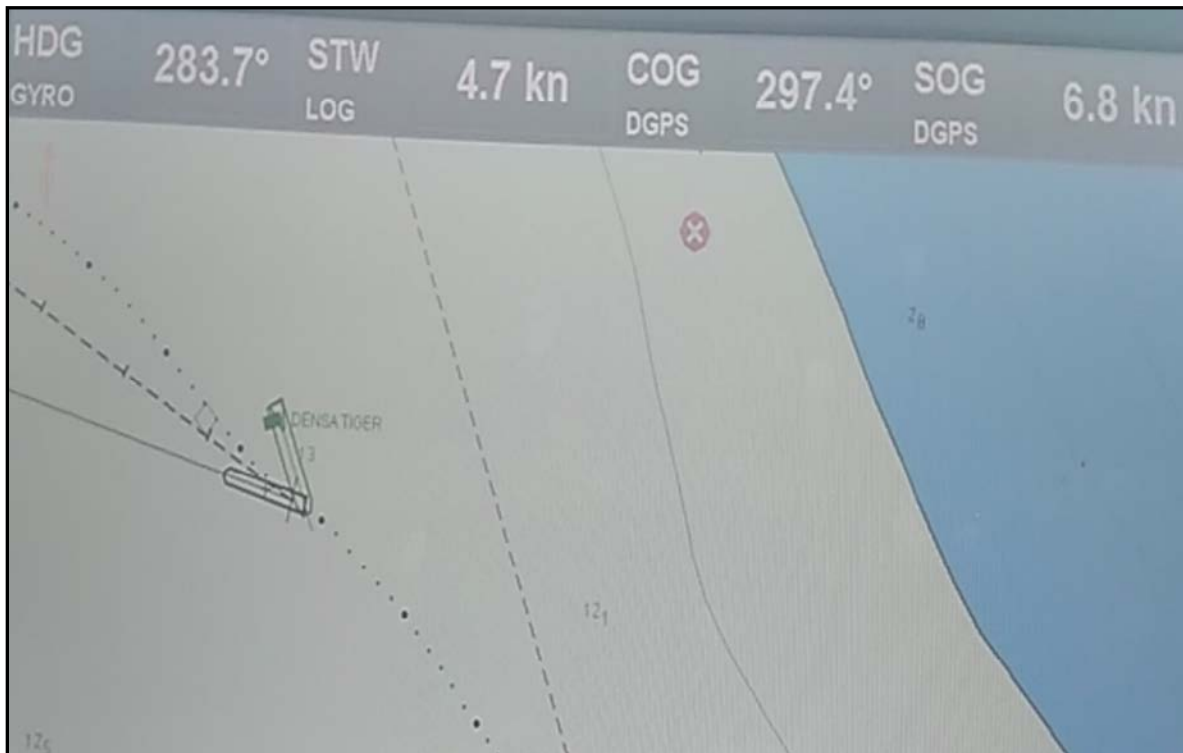


FIGURE 5 - *ECDIS4 Playback Position of the NEW LEGACY*

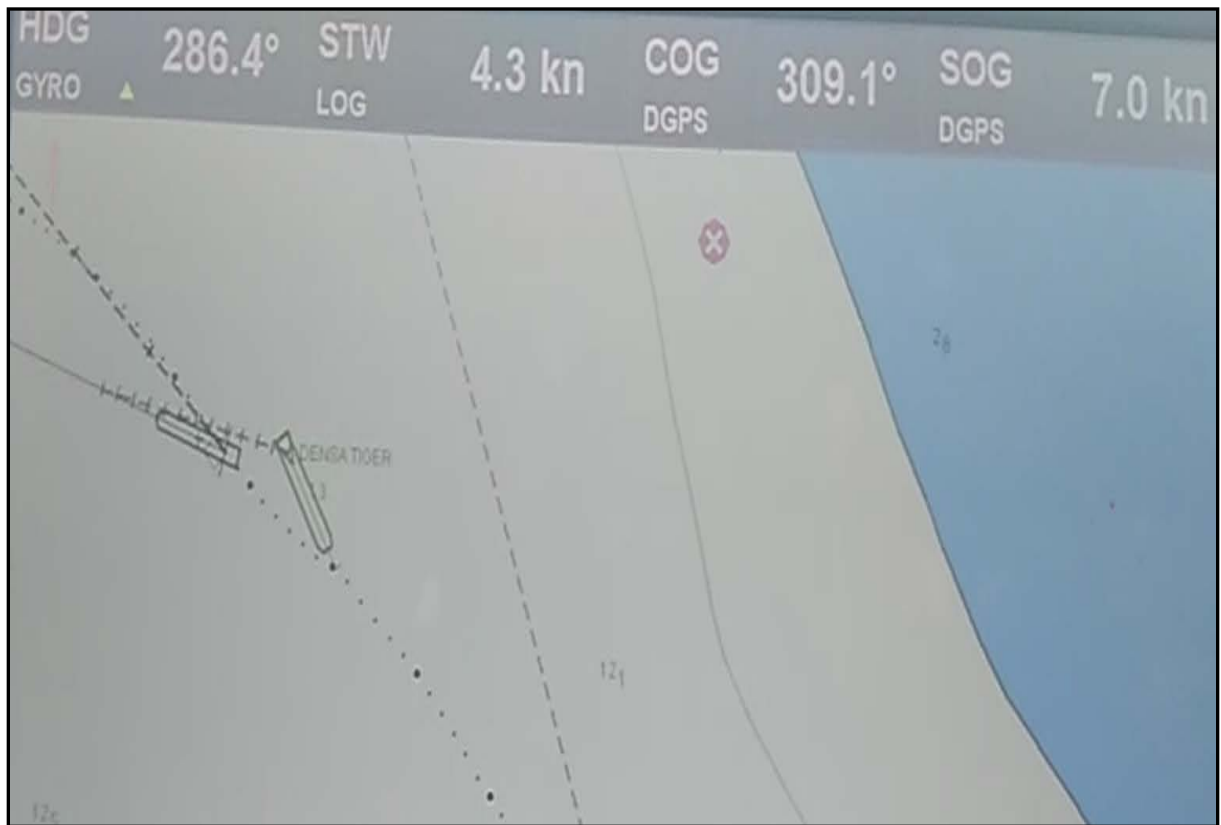


FIGURE 6 ECDIS Playback Position of the NEW LEGACY

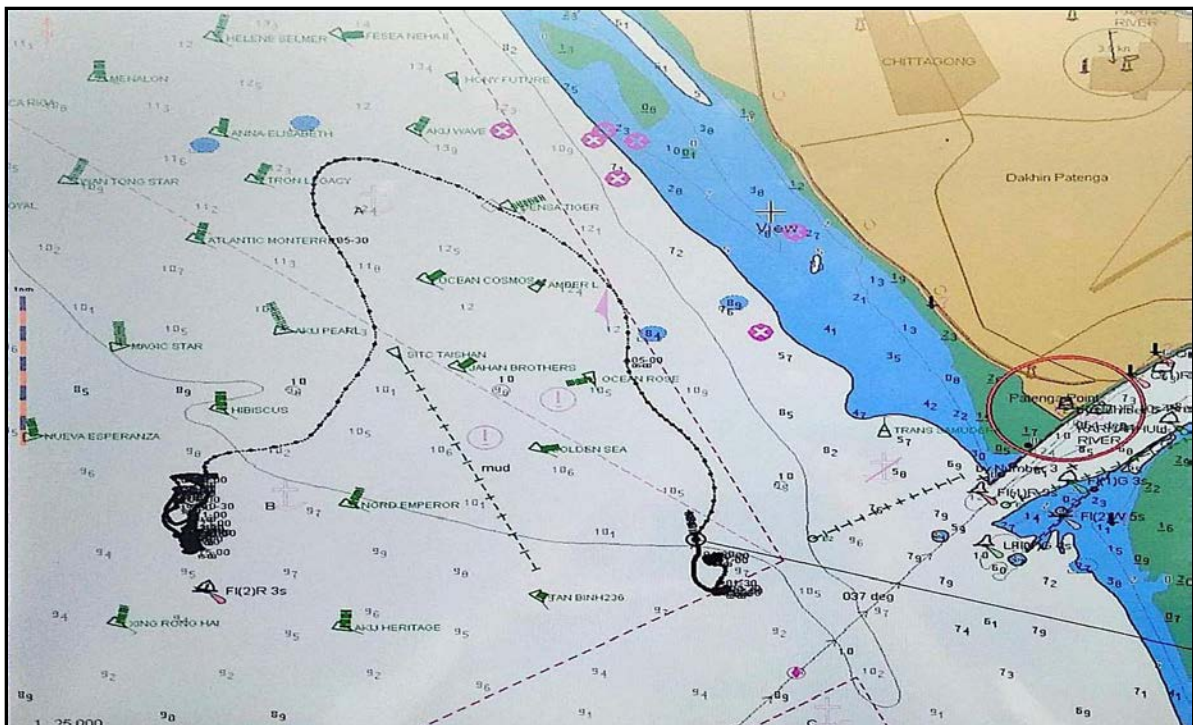


FIGURE 7 Anchorage Shifting Track of the NEW LEGACY

DENSA TIGER

The Malta registered bulk carrier DENSA TIGER arrived and anchored in Chittagong anchorage area "A" on September 23, 2018 at about 1340 LT. Cargo unloading operations had commenced on September 25, 2019, at 0030 LT.

On September 25, 2019, at 2306 LT, the anchor of the DENSA TIGER was weighed to shift her position, since the crew members had observed that another vessel was dragging her anchor and moving towards DENSA TIGER. At 2320 LT, DENSA TIGER dropped her anchor once again, in a determined safer position within anchorage area "A", using her starboard anchor. Thereafter, cargo-unloading operations were resumed.

On September 29, 2018, at 0956 LT, Chittagong Port Control Radio station, as monitored from the DENSA TIGER, called the NEW LEGACY and informed her that she was too close to the pilot boarding station, and that she should shift her position to a suitable area within the anchorage. At 1015 LT, it was observed that the NEW LEGACY was approximately one (1) nautical mile south of her original position (*as shown in Figure 1*)

At 1048H LT, the NEW LEGACY was underway, with all three barges still moored alongside her port and starboard side, and proceeding towards another position within the anchorage. At 1055 LT, it was reported that as NEW LEGACY was about to drop her anchor in a different position, it was heard that the Port Control Radio station called the vessel and advised her to shift to the anchorage area "B", as her draft was suitable for anchorage area "B".

At 1100 LT, the Master of DENSA TIGER noticed that the NEW LEGACY was approaching at a speed of about 6-7 knots, with her closest point of approach (CPA) being 0.3 nautical miles (nm) from the DENSA TIGER. The Master of the DENSA TIGER was expecting that the NEW LEGACY would pass along the DENSA TIGER's port side. At the same time, the Master of the DENSA TIGER heard the Port Control Radio station hailing the NEW LEGACY, and advising her to keep clear of DENSA TIGER. One of the bridge team members aboard NEW LEGACY was heard acknowledging the advice. The Master of DENSA TIGER tried to call NEW LEGACY over the VHF radio, sounding the vessel's whistle to advise the risk, but he received no reply.

As NEW LEGACY drew closer, the master and the AB, who was stationed on the forecastle, noticed that NEW LEGACY had two barges moored along the starboard side. The Master called the Chief Officer on the portable radio, and informed him about the situation. The Chief Officer then proceeded to the bridge and saw the NEW LEGACY slowly approaching the DENSA TIGER. Port Control Radio station once again calling the NEW LEGACY and requesting her to keep clear of DENSA TIGER. At 1104 LT, the Master noticed that the NEW LEGACY had started to slowly alter her course to port, thereby approaching the bow of the DENSA TIGER. At around this time, the Chief Officer noticed that the ECDIS and radar displays indicated that the CPA of NEW LEGACY was zero

The Chief Officer asked the AB over the portable radio, about the position of the anchor cable and the distance of NEW LEGACY from the bow. The AB responded that the cable had a medium stay and that NEW LEGACY was 40 meters off the bow. The Chief Officer then sounded the vessel's whistle and asked the AB to move to a safe location. The Bosun, who had heard all the conversation over the portable radio, proceeded towards the forecastle. At 1109 LT, NEW LEGACY allided with DENSA TIGER, in position 22° 14.67' N 091° 45.54' E, with the inland barge CHAR SHAMAIL moored near the accommodation of the NEW LEGACY getting lodged and crushed in between

the two vessels.

2. WITNESSES

The Master of NEW LEGACY is of Taiwan nationality, age of 64 years old with valid Liberia Master Certificate. He joined the vessel NEW LEGACY since 17 June 2018.

The 3rd Officer of NEW LEGACY is of Chinese nationality, age of 29 years old, was holding valid Liberia Navigation Watch Officer certificate. He had joined NEW LEGACY since 13 July 2018. The 3rd Officer was on the bridge with Master during shifting assisting Master. The duty Able Seafarer (AB) was on wheel as helmsman during the maneuvering to shift anchorage position.

On board the DENSA TIGER at the time of the collision, there were 19 crewmembers on board, all of whom were Turkish nationals.

The Master of DENSA TIGER had a total of 12 years' experience at sea, of which one-year was served in the rank of a master with STCW II/2 qualifications.

The Chief Officer of DENSA TIGER had a total of eight years' experience at sea, of which two years were served in the rank of a chief officer with STCW II/2 qualifications.

The Able Seafarer (AB), who was on watch on the forecastle on the DENSA TIGER had a total of 28 years' experience at sea, all of which in the rank of an AB (deck).

The Bosun of DENSA TIGER had a total of eight years' experience at sea, of which one-year was served in the rank of a Bosun.

The Third Engineer of DENSA TIGER had a total of two years' experience at sea, all of which in the rank of a third engineer with STCW III/1 qualifications.

The Government of Turkey issued the certificates of competency/proficiency of all crewmembers.

3. WORK PLANNING/WHAT LEAD TO EVENT

Both internal and external forces acting on the vessel NEW LEGACY was determined to be factors that have led this very serious marine casualty incident to occur. At the time of allusion between the NEW LEGACY, and the DENSA TIGER that caused the foundering of the inland cargo barge CHAR SHAMAIL, and death to two of her crewmembers, the NEW LEGACY continued with her cargo discharging operations, tagging along both her sides were three (3) lightering barges alongside.

The presence of three (3) barges moored and fasted at both the port and starboard hull of the NEW LEGACY, provided and added weight to the vessel that severely restricted the vessel's ability to safely and make timely maneuver, outside her rated maneuvering ability. The Master nor Duty Officer did not check regular vessel position of the vessel, and was not aware of the dragging movement of the NEW LEGACY until notified by the Port Control Radio station.

The strong tidal currents, shallow water at Chittagong Anchorage was also identified as an external factor that may have led into this incident. Aside from the usual warning as provided by local Port Authority about the risk provided by strong tidal current at Chittagong, several publications are made available that can provide information and warning to mariners and vessels operating in and out the Chittagong port and adjacent anchorage areas.

The NEW LEGACY, after determined to be dragging, was instructed to shift her anchorage position, but bringing with her the barges alongside Port and Starboard of the vessel. The combination of heavy internal weight, and strong environmental tide, together with insufficient passing distance without considering prevailing tidal current, rendered the vessel difficult to maneuver, risking collision with another vessel.

As an added information, prior to the incident, in terms of cargoes, the DENSA TIGER was carrying 41,975 metric tons of granulated blast furnace slag, in bulk. This cargo was loaded in Mizushima, Japan, and all of it was to be unloaded into barges in the Chittagong anchorage area, using the vessel's cranes. At the time of the accident, about 27,000 metric tons of cargo had yet to be unloaded from the vessel.

The NEW LEGACY, aside from the cargo already unloaded, and three barges moored alongside, the vessel was carrying 35,200 metric tons of carbon steel scrap, in bulk. This cargo was loaded in Portland (Oregon), U.S.A., and all of it had to be unloaded into barges in the Chittagong anchorage area, using the vessel's cranes. At the time of the accident, 31,440 metric tons of cargo had yet to be unloaded from the vessel, which still a sufficient dynamic weight rendering the vessel heavy to maneuver at the time.

4. DAMAGES/OUTCOMES/POLLUTION/INJURIES

As post incident event, because of the allision between the NEW LEGACY and CHAR SHAMAIL, it was reported that two crewmembers who jumped overboard from the foundering inland cargo barge CHAR SHAMAIL went missing. Days after the incident, local authorities found bodies of deceased individuals washed ashore near the port city of Chittagong. According to the local P and I correspondent of the owners of the NEW LEGACY, the local authorities, families and friends of the deceased, the bodies were identifies that of the Master, and a Helmsman of the CHAR SHAMAIL. The names of the deceased were not provided as part of this investigation.

As for both the NEW LEGACY and DENSA TIGER, sustained minor damages because of the allision. The NEW LEGACY had long streak of paint scratches on her Starboard side shall plate in way of Cargo hold No 4 & 5. Three tier guard rails deformed at frame No 10 and 20, approximate length about 9.0 meters, and guard pipe of fairlead in way of poop deck on Starboard side were damaged (*as shown in Figure 8*),

DENSA TIGER sustained minor damages, which included dents in her shell plating, in way of her forepeak tank and bulbous bow, and deformation of the associated internal strengthening members. Her starboard anchor and seven shackles of anchor cable were lost.

CHAR SHAMAIL sustained severe damages to her hull, causing her to take in water and founder as a result. The strong currents pushed CHAR SHAMAIL rapidly past DENSA TIGER and at 1117,LT the barge foundered in position 22°15.06' N 091° 45.3' E .

Following the allision, the 2nd Officer DENSA TIGER arrived on the bridge and logged down the details in the bridge logbook. The Chief Officer went onto the starboard bridge wing. He noticed that the anchor cable was leading towards the starboard quarter of NEW LEGACY, while she crossed the bow of DENSA TIGER.

Soon, thereafter, the anchor cable of DENSA TIGER parted and she started to fall astern, with a speed of about 1.4 knots, due to the current. The Chief Officer immediately reported this to the Master and made his way from the bridge towards the forecastle. The Chief Officer Instructed the Bosun over the portable radio, to prepare the vessel's port anchor. On arriving in the forecastle, the Chief Officer noticed that CHAR SHAMAIL was taking in water.

In the meantime, the Master of the DENSA TIGER called the engine-room and informed them about the situation. At 1112 LT, once the DENSA TIGER was under control using the engine, the Master notified Port Control Radio station about the allision.

At 1114 LT, the and the Second Officer of the DENSA TIGER noticed some of the crewmembers of CHAR SHAMAIL in the water, passing by the vessel's starboard side. The Master immediately stopped the engines and later, once the barge and her crewmembers were clear, he kicked the engine ahead, in order to maintain control.

At 1230 LT DENSA TIGER drop anchor, using her port anchor, one (1) nautical mile south of the location of the accident, following which, a damage assessment was carried out by the crewmembers.



FIGURE 8 – Allision Damage to the NEW LEGACY

5. SUBSEQUENT EVENTS/RESULTS

The inland cargo barge CHAR SHAMAIL was crushed and foundered as a result from the collision between the NEW LEGACY and DENSA TIGER. The crewmembers from CHAR SHAMAIL jumped into the water without donning proper lifesaving equipment, including mustering and accounting for personnel, because the ill-fated barge sank rapidly in less than 5 minutes. The survivors were picked up by the nearby fishing vessels. Reportedly stating that there were two crewmembers missing from the barge.

The vessel NEW LEGACY was arrested by the owner of CHAR SHAMAIL for claim against the loss of the barge and of approximately 650 Metric Tons of the cargo, together with other loss/expenses.

After discharging of cargo, the NEW LEGACY was waiting to be released from the court. It was understood that the owner's P&I Club and H&M underwriters with the claimants have reached a financial settlement and the vessel was released from the court on 17 October 2018.

CONCLUSIONS

Based on the review and analysis of all evidences collected as part of the investigation, which includes but not limited to VDR data transcription, crew and witnesses interview statements, it was determined in this investigation that most likely, internal and external forces acting on the vessel NEW LEGACY were factors that have led this very serious marine casualty incident to occur. These factors identified together with the decisions made by the Master of the NEW LEGACY have led into the collision incident, and causing the loss of life and property.

At the time prior to, and during the incident, the NEW LEGACY was already determined to be considered of "heavy laden" condition. This was due to the fact that the presence of three (3) barges moored and fasted at both the port and starboard hull of the NEW LEGACY, provided and added weight to the vessel, that severely restricted the vessel's ability to safely and make timely maneuver, outside her rated maneuvering ability.

With one (1) barge fasted in the port side, and another two (2) barges on the starboard side of the NEW LEGACY, it limited the ability of the vessel to easily turn, particularly when going to port side, considering of the drag and weight caused by the barges moored in the starboard side. When the Master of the NEW LEGACY observed that his vessel is about to make contact with the DENSA TIGER, he ordered 'hard port' rudder, and 'half ahead' the "full ahead", however such rudder and engine action did not effectively assist the vessel to make a faster rate of turn to port, but instead she drifted faster, towards the DENSA TIGER.

In addition, at the time of the collision, the NEW LEGACY is still partially full, with only a partial amount of cargo was discharge for lighter to the barge moored alongside her hull.

The strong tidal currents, shallow water at Chittagong Anchorage was also identified as an external factor that may have led into this incident. The port of Chittagong and her anchorage are known for

her strong tidal currents all year round. The dragging of anchor at the Chittagong outer anchorage is somewhat a common phenomenon with laden vessels and collision between the vessels due to anchor dragging has been happening during shifting of the anchor position by the vessels.

The anchor dragging takes place mostly during spring tides and close to the time of low water. The anchorage area remains congested with vessels and shifting anchor position in most cases result in collision. The reason being the maneuverability of the vessel is impaired due to shallow water effect and the effect of strong tidal current becomes the dominant factor. Invariably, the collisions take place when a vessel crosses the bow of another vessel at anchor, having tidal current from her beam or close to the beam.

The collision between NEW LEGACY and DENSA TIGER was of typical situation and occurred while NEW LEGACY was crossing the bow of DENSA TIGER at anchor.

On 29 September 2018, the NEW LEGACY was anchored at a position close to 'B' anchorage and her draft was suitable for anchoring in this anchorage. The Chittagong Port Authority has a VTIMS and the Port Control Radio station integrated with the VTIMS. The Port Control Radio station could have advised the Master to move to 'B' anchorage a short distance away from her existing anchor position, instead of advising the same when NEW LEGACY has already moved to congested waters of 'A' anchorage. The collision took place while NEW LEGACY started taking turn to move to 'B' from 'A'.

The sinking of the barge and loss of life in this case is an extraordinary issue. At the Chittagong anchorage, during anchor dragging, the best practice to maintain anchor position by using the main engine and watch the anchor cable for an hour or so before the low water time until the high water starts. During this period, the cargo discharging to barges made fast alongside may continue at the discretion of the Master. However, when a vessel heaves up anchor and shift anchor position the barge made fast alongside the vessel are invariably cast off.

In this case, the vessel was shifting anchor position in the anchorage while the three barges were made fast alongside.

The crew of the barge jumped in water without donning lifejacket or using lifebuoy. The sea water current is quite strong, eddies form alongside the vessels and loss of life occurred in previous instances while persons fell in water close to anchored vessels without any lifesaving equipment.

1. CONTRIBUTORY FACTORS

Lack of situation awareness, Master and Navigation Officer on Watch (3rd Officer) of the NEW LEGACY did not regularly check the vessel anchor position, and was not able to notice the vessel was dragging until Chittagong Port Control instructed to shift anchorage position.

Lack of observing COLREG Rule 6, Master and 3rd Officer did not proceed with Safe Distance, Safe Speed, state of wind and current, stopping distance and turning ability in the prevailing conditions, considering the heavy condition of the vessel

2. PROBABLE CAUSE

It appeared that there was no problem with the main engine and the steering system of the NEW LEGACY during the incident. All engine room machinery and bridge equipment have been functioning in good order. A data logger records the engine movement and a print out of the data logger during the incident was obtained from the Master.

The cause of collision was that the Master of NEW LEGACY did not realize the effect of tidal current and limitations of maneuvering in shallow congested waters while maneuvering for shifting anchorage, including the heavy-laden condition of his vessel.

Prior to the collision, the speed of the vessel through the water was 3.7 knots while the speed over ground was 7.1 knots and drift angle was $(315.6 - 294.9) = 20.7$ degrees. This was indicative that the vessel was mainly under the influence of strong tidal current to northerly direction, and in addition, the significant weight on the starboard side of the vessel tend to make the NEW LEGACY drift even faster.

Increasing the speed of the vessel to Full Ahead and helm hard to port, one minute before the contact, could not avert the collision, due to restriction of the vessel to turn to port faster than it should.

The navigation on board is paperless and the vessel is fitted with duplicated ECDIS Transas Navi-Sailor 4000 model. The Master appeared to be not conversant with the proper use of ECDIS and he depends on 2nd and 3rd officer for ECDIS operation. He has been depending on his visual assessment during maneuvering of the vessel rather than evaluating the situation as per ECDIS

This was the Master's first-time experience of calling at Chittagong anchorage.

Keeping three barges made fast alongside while maneuvering the vessel has been a bad practice of seamanship and led to the sinking of the barge and death of two persons. Upon discussion with the Master, it appeared that while heaving up anchor on 29 September 2018 he did not pay attention to the fact that the three barges were made fast alongside. Once underway it was not possible to cast off the barges.

IMMEDIATE STEPS TO CORRECT OR PREVENT RECURRENCE

Ship Managers, Masters, and Crews shall observe the Port Circulars, precautions prior arrival ports. Check reference to port in terms of environmental conditions.

Vessel position should be checked frequently, while at anchor and attention to be paid during tidal changes.

During shifting in similar conditions as provided by this report, the vessel should stop cargo operations, and release the lightering barges prior vessel moving to have better manoeuvrability, despite external weather and current effect, and internal effect of cargo weight.

RECOMMENDATIONS

The Chittagong Port Authority has issued a recent circular on 19 September 2018 with a view to prevent large number of collision incidents in recent times at the outer anchorage of Chittagong port attributable to vessel congestion and limitation of depth of water at the outer anchorage.

The recommended pilotage in the circular means using an optional pilot from the Kutubdia roads (approximately 35 n. miles south) to arrive and anchor at the outer anchorage. The ship-owners/operators and charterers to comply with the contents of this circular.

It is recommended that the optional pilotage service to be used for the Masters calling Chittagong port for the first time. The Master of the vessels arriving Chittagong to be appraised by the ship manager regarding the hazard of anchor dragging and collision at Chittagong outer anchorage. There are a number of publications issued by P&I Clubs and circulars issued by the Chittagong Port Authority. I understand that the manager of NEW LEGACY has sent such publications/circulars to the Master of the vessel but he appeared to have not taken this information seriously.

The DPA of the ship manager should ensure that the Masters calling at Chittagong port are appraised of the navigational and anchorage situation at the port of Chittagong and the same can be incorporated in the Company SMS.

During the course of vessel inspections, it emerges that the older generation of Masters have difficulty in demonstrating full operational use of ECDIS and understanding the full capability of ECDIS. During testing of bridge equipment, the Masters call the 2nd Officer/3rd Officer to operate the ECDIS for the inspector/surveyor.

The DPA of the ship managers should ensure that the Masters engaged on board are not only familiar but also apt in operation of ECDIS equipment fitted on board.

The Chittagong port is equipped with a modern VTIMS but it is not manned by trained controller to advise the Master of vessels in proper manner keeping safety in consideration while maneuvering in the anchorage area. The VTIMS of Chittagong port should be manned by trained and qualified operator/controller.

The barges used for loading cargo at the outer anchorage of Chittagong port are constructed and licensed for inland waters (river) navigation and the barges are given special 'Bay Crossing' permission to navigate in the outer anchorage area.

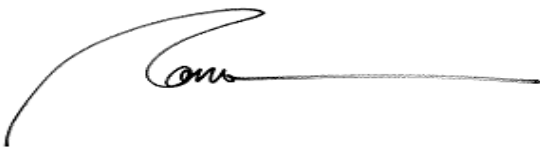
In the 'Bay Crossing' permission, six (6) conditions are given, one mentioning minimum freeboard to maintain and others are related to navigational matters.

The personal safety equipment are provided on board these barges in the form of lifebuoys and lifejackets. During the sinking of barge CHAR SHAMAIL it appeared that the sinking was quite sudden and the crew members jumped into the sea without wearing any lifejacket and no lifebuoy was used.

It is recommended that the barges having 'Bay Crossing' permission should be fitted with an inflatable liferaft with hydrostatic release placed at the aft/forward of the barges.

This report was prepared based on the report and findings from the investigations conducted by the local flag State investigators, and supplemented by VDR data, documented evidence collected and reports during an investigation on board the vessel NEW LEGACY.

All the evidence collected from this investigation were gathered on board the NEW LEGACY which includes but not limited to VDR data, documents, photographs, and crew interviews which were all used as materials to develop the Commissioner's Decision and this report to the investigation of this incident. The content contained therein was reported without prejudice and with regard to all known facts provided.

A handwritten signature in black ink, appearing to read 'A. Romero', is written over a horizontal line. The signature is stylized and cursive.

Alphard V. T. Romero, Director
Marine Investigation, Liberian Registry