REPUBLIC OF THE MARSHALL ISLANDS

Office of the Maritime Administrator

MATISSE CASUALTY INVESTIGATION REPORT

Crewmember Overboard and Missing While Underway Pacific Ocean Offshore the Columbia River

21 April 2012

Official Number: 4355

IMO Number: 9580120

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AUTHORITY

An investigation under the authority of Republic of the Marshall Islands laws and regulations, including all international instruments to which the Republic of the Marshall Islands is a Party, was conducted to determine the cause of the casualty.

Office of the
Maritime Administrator

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TABLE OF CONTENTS

INTRODUCTION

On 21 April 2012 at 0043[1], the Bosun serving on board MATISSE fell overboard on departure from Portland, Oregon, United States of America (USA). while he was attempting to replace the removable section of railing used for pilot access to the ship's main deck port side. The ship was departing to sea from Portland with a cargo of scrap metal. The incident occurred approximately six (6) nautical miles (NM) off the entrance to the Columbia River, approximately halfway between the Columbia River Approach Lighted Whistle Buoy CR and the Columbia River Entrance Lighted Whistle Buoy 2. The Columbia River Bar Pilot had just safely disembarked the ship into a waiting pilot boat utilizing a pilot ladder rigged on the port side. At the time, three (3) crewmembers, the Bosun, and two (2) Ordinary Seamen (OS), were in the process of retrieving and stowing the pilot ladder.

Wind and sea conditions at the time were reported as winds 10 to 15 knots from the east-northeast and swells of three (3) meters (m) from the north-northwest. The ship was rolling moderately. Witness statements indicated that the ship rolled to port at the instant the Bosun fell overboard. Due to the sea conditions, the pilot had requested the helmsman to steer a course of 140° True (T) to create a lee for the pilot boat. The Pilot then recommended that after he disembarked, the ship turn to port to course 000° T in order to intersect the planned track line. The ship was in the process of the turn to port when the Bosun fell overboard.

Search and Rescue (SAR) efforts by the crew of MATISSE began immediately. Shortly thereafter, SAR efforts were followed by the crew of the nearby pilot boat, and then by United States Coast Guard (USCG) aircraft and ships. The Bosun was not found and SAR operations were called off at 0740 on 21 April 2012.

The Administrator determined that the Bosun fell overboard in moderate seas after losing his balance while bringing the pilot ladder on board, after disembarking the pilot. It was also determined that the Bosun was not wearing a lifejacket or safety belt with a lifeline at the time of the incident.

1 All times denoted are local (UTC -7) unless specified.

FINDINGS OF FACT

The following findings of fact are based on information available to the Administrator:

Vessel Particulars: see chart to right.

On 21 April 2012, MATISSE was transiting the Columbia River outbound from Portland. The bridge navigation watch consisted of the Master, Second Officer, an OS, and a Columbia River Bar Pilot. At 0040, the ship reached the pilot boarding area and the pilot disembarked via a pilot ladder to the waiting pilot boat. The pilot ladder was rigged on the main deck, port side, immediately forward of the accommodation. The ship was rolling moderately at the time, and at the request of the Pilot was steering a course of 140° T in order to create a lee for the pilot boat. Following the Pilot's safe disembarkation, per the Pilot's prior recommendation, the ship altered course to port to come to a new heading of 000° T in order to intercept the intended track line.

VESSEL PARTICULARS

Vessel Name
MATISSE

Registered Owner
Matisse Shipping Corporation

ISM Ship Management
Portunato & C.S.R.L.

Flag State
Republic of the Marshall Islands

IMO No. 9580120	**Official No.** 4355
Call Sign V7WO7	**Length** 172.95 meters
Date of Build 2011	**Gross Tonnage** 23,440
Construction Steel	**Persons Onboard** 22

Vessel Type
Bulk Carrier

Safety Management System Recognized Organization
Registro Italiano Navale (RINA)

Classification Society
American Bureau of Shipping (ABS)

1. The reported weather was:

Visibility:	Clear, 10 NM
Air Temperature:	48.2° Fahrenheit (F) (9° Celsius (C))
Wind:	10-15 knots, east-northeast
Swell:	3 m, north-northwest
Sea Temperature:	51.62° F (10.8° C)[2]

2. After the Pilot disembarked, according to the OS's statements, the Bosun was instructed via VHF radio by the Second Officer to stow the pilot ladder. Neither the Master nor the Second Officer stated that they ordered the Bosun to recover and stow the pilot ladder. The Bosun, assisted by the two (2) OS's, proceeded to stow the pilot ladder. A Deck Officer was not present. After the pilot ladder was on board, the OS secured the pilot ladder in a storage rack located outboard of the cargo hatch coaming, while the Bosun started replacing the removable section of railing for the pilot station. The Second Officer, who was on the bridge, stated that at 0043 on 21 April 2012, he observed

2 MATISSE's deck log and National Oceanic and Atmospheric Administration, National Data Buoy Center, Buoy 46243, Clatsop Spit, Oregon, USA (46o12.9'N, 124o7.68'W).

the Bosun fall overboard through the opening in the railing. The Second Officer stated that the ship rolled to port at the time the Bosun fell. The two (2) OS's, who were facing inboard as they stowed the pilot ladder, reported hearing the Bosun call for help and when they turned he was gone. At this time, the ship's speed was 9.6 knots and the heading was 018° T.

Figure 1: Portside pilot embarkation location with the yellow removable railing in place and pilot ladder on deck.

3. While working on deck, the Bosun was reported to be wearing yellow coveralls over blue coveralls and a yellow hard hat. It was reported that the Bosun was not wearing a safety belt with attached lifeline to secure himself to the ship or any type of flotation device.[3]

Onboard Response and SAR

4. One (1) of the OS's reported that he immediately threw a lifebuoy with a light connected by a line in the direction of where the Bosun fell. Neither of the OS's reported seeing the Bosun in the water. They did report seeing the lifebuoy but could not recall seeing the attached self-igniting light.[4] The OS immediately notified the Officer of the Watch (OOW) by handheld radio that there was a man overboard (MOB). According to the Master's statement, two (2) lifebuoys were tossed overboard; this was not corroborated by other crewmembers. When it was announced that there was an MOB, both of the OS's reported to their respective stations. Neither of the OS's stated that they attempted to maintain visual contact with the lifebuoy.

5. At 0044, the general alarm was sounded and the MOB was announced on the public address system. The Master ordered the main engine "All Stop." Notifications were then made by VHF radio to the USCG and the pilot station.

3 The Second Officer and OS's made this declaration during interviews conducted by the flag State investigator.

4 The USCG later reported having recovered a lifebuoy. It was reported to have a line attached, but not a light.

6. According to the Master's statement, in lieu of performing a Williamson Turn[5], he ordered the main engine "All Stop" and continued the ship's turn to port. *See Figure 2*. He stated that this would allow the ship to drift back to the MOB location. The Master stated that his decision not to launch the rescue boat was due to sea conditions being too rough. The MOB lifebuoys mounted on the bridge wings were not deployed; no explanation was given for why they were not deployed. It is noted that the crew did execute other functions appropriate to this stage of the response as specified in the Safety Management System (SMS) Man Overboard Checklist, such as posting lookouts and energizing the ship's searchlight.

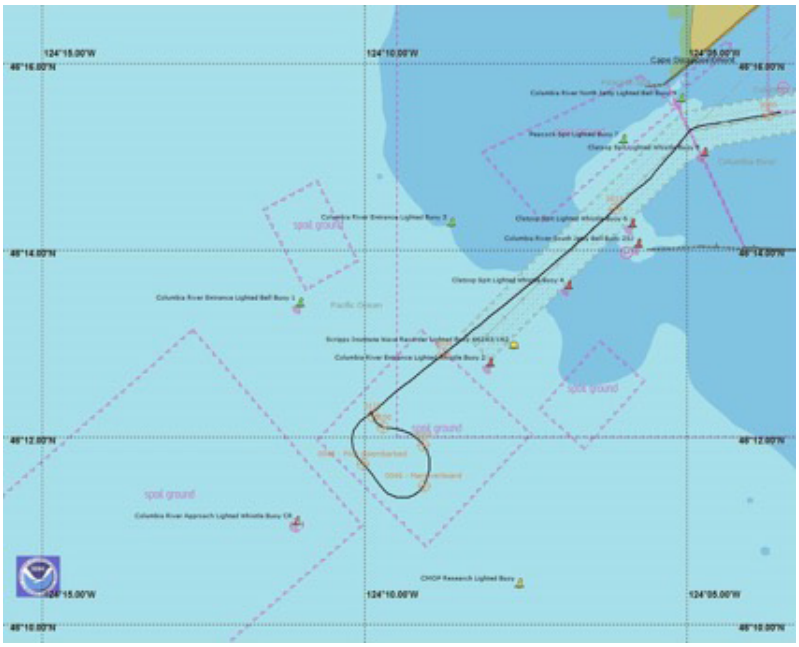

Figure 2: MATISSE's outbound transit across the Columbia River Bar, the location where the Pilot disembarked, and the MOB position (based on MATISSE's voyage data recorder (VDR)).

7. Based on MATISSE's VDR information, at 0047 a radio transmission was made on VHF-FM channel 16 reporting the ship's name and that there was an MOB; the ship's position was not included. At 0048, the pilot boat called MATISSE and reported that they were turning around to assist with the search. At the time, the pilot boat was to the northeast at a distance of approximately 2.5 NM.

8. At 0051, the crew of MATISSE advised the pilot boat that they could not see the Bosun and that he had not been wearing a lifejacket. At 0052, the pilot boat contacted the USCG and reported that there was an MOB from MATISSE. Immediately afterwards, the USCG made a "Pan-Pan"broadcast on VHF-FM channel 16, advising all vessel traffic in the area of the MOB, as well as commenced an active search.[6] The pilot boat subsequently informed the USCG that the Bosun was not wearing a lifejacket and that no lights had been deployed overboard.

5 A Williamson Turn is intended to return the ship to the position where the MOB occurred.

6 The USCG aircraft and boats were reported to be involved in the USCG's active search; those search efforts were not addressed during the Administrator's investigation and are not addressed in this report.

9. At 0107, the pilot boat was on scene with MATISSE and began to proceed toward the ship's position when the Bosun fell overboard. The pilot boat stated they would remain on scene until a USCG aircraft or boat arrived in the area.

10. At 0110, the crew of MATISSE advised the pilot boat that a light had been seen off the ship's stern; based on the VDR information the bearing off the stern was approximately 230° T. At 0111 the pilot boat, which was in the vicinity of the position where the Bosun was reported to have fallen overboard, confirmed seeing a light in that direction and began to proceed toward MATISSE. It was subsequently determined that the source of the light was likely the Columbia River Approach Lighted Whistle Buoy CR. *See Figure 2*.

11. The search for the Bosun continued throughout the night without success and at 0740 on 21 April 2012, the USCG suspended the active search.[7] MATISSE remained in the vicinity looking for the Bosun until 2150. At 2155, a Columbia River Bar Pilot boarded MATISSE and the vessel proceeded to the Columbia River Port of Longview, Washington where the marine safety investigation was conducted.

SMS and Emergency Preparedness

12. Portunato & C.S.R.L.'s SMS contains a section entitled Pilot Procedures (Procedure DM-14), which contains a section for Pilot embarkation and disembarkation. The Procedure indicates that a Deck Officer is to be present during a pilot's embarkation and disembarkation, requires the completion of the Pilot Embarkation/Disembarkation Checklist, and specifies that a lifebuoy with a self-igniting light connected by buoyant rope shall be stationed at the boarding station. A copy of the completed Pilot Embarkation/Disembarkation Checklist on 21 April 2012 was not produced during the investigation.

13. The crew reported that they had been issued personal protective equipment (PPE), including coveralls, hardhats, and safety belts with lifelines. However, they were not provided with lifejackets to use when working near or over the side of the ship.

14. A review of the ship's training records indicated that training or drills were held on a regular basis and included signatures of all the ship's crew, Training Officer, and Master. The ship's training records from June 2011 to April 2012 indicate that abandon ship drills were conducted at least once per month. They also indicate that MOB drills were conducted in September 2011, December 2011, January 2012, March 2012, and instruction provided in July 2011 and August 2011. Based on these records, the rescue boat was launched and operated in January 2012 and March 2012. Ship's training records for the period indicate that instruction was provided on how to start the rescue boat in July 2011 and August 2011.

15. When interviewed, the Chief Engineer, who joined on 15 February 2012, indicated that he thought the rescue boat was operated in 2011. He also stated that he thought an MOB drill, a fire drill, and an abandon ship drill were conducted in March 2011. When interviewed, an Able Bodied Seaman (AB)

7 The predicted survival time for a person not wearing an exposure suit in 10.8° C water is 1-6 hours.

and both OS's stated that they had not taken part in any shipboard drills during the 10 months that they had been on board, although one (1) OS stated a fire drill was conducted prior to an Australian port call. The AB assigned to the rescue boat during the MOB and one (1) of the OS stated that they had never witnessed the rescue boat launched. Additionally, an OS stated that although drills were scheduled on a monthly basis, these drills consisted of signing a sheet of paper presented by a Deck Officer. The ship's records of training and drills are documented on the SMS Training Record Form S-04, copies of which were provided for the period of June 2011 through April 2012.

16. Crewmembers reported that all of the ship's lifebuoys, except those at the port pilot station and on the bridge, were removed from the main deck during the Columbia River transit and stored in the ship's tally room. This was reported to be at the order of a Deck Officer following the ship's departure from Portland; this was not corroborated by the ship's officers.

17. The bridge wing MOB lifebuoys were inspected as part of the investigation to verify their operability. The MOB lifebuoy release pins were able to be successfully removed. However, two (2) items which could hinder their smooth operation were observed: there was heavy corrosion on both release pins, and the tether cable for each of the pins was very short. *See Figure 3*.

Figure 3: MOB lifebuoy release pin showing the length of the tether (left) and the painted over corrosion (right).

18. On 22 April 2012, the attending flag State inspector representative witnessed the ship's crew conduct fire and abandon ship drills. The performance of the crew during these drills was found to be unsatisfactory, which was partially attributed to crew fatigue resulting from previous river transit and SAR operations. The ship was issued a flag State detention order subject to satisfactory drill performance and crew rest. On 23 April 2012, the flag State inspector again witnessed fire and abandon ship drills, which were both observed to be satisfactory.

19. As a condition of the release from the flag State detention, the flag State inspector required that an additional external audit of the SMS be conducted on board. The external audit was conducted on 15 May 2012 and identified two (2) non-conformities related to the crew's drill performance and new crewmember familiarization, with particular emphasis on firefighting and abandon ship procedures. Ship management's causal analysis identified the root cause of the non-conformities as inadequate procedures and supervision, as well as improper review and analysis of the drill records.

ANALYSIS

The purpose of the analysis is to identify the causes of this very serious marine casualty.

Pilot Disembarkation

The Company's SMS is explicit about requiring the completion of a Pilot Embarkation/Disembarkation Checklist. However, neither the Master, nor ship management, provided a copy of the Checklist to the flag State investigator, so it was not possible to determine if it was completed as required.

Although universally considered a good practice[8], none of the crewmembers who were on deck assisting the Pilot were wearing a lifejacket and safety belt or harness fitted with a safety line while working near/over the side of the ship's side. Similarly, none of the crewmembers were wearing thermal protective clothing to reduce the risk of shock in the event they went in the water, even though the ship was operating in cold waters.

It is also noted that a Deck Officer was not reported to be present at the pilot station. The SMS Pilot Procedures states "Designated Deck Officer and Rating shall be standing by at Pilot's embarkation/disembarkation point."

Recovery of the Pilot Ladder

There was a discrepancy between the statements made by the Master and the officers that the Bosun was not instructed to recover the pilot ladder, and what was reported by the OS's. However, it is noted that neither the Master nor the Second Officer intervened when they saw that the Bosun was securing the pilot ladder with assistance from the two (2) OS's.

Absent his direct testimony, it cannot be determined with certainty why or how the Bosun fell overboard. Based on witness statements, it is reasonable to assume that the Bosun, who was working close to the deck edge, was likely thrown off balance or slipped as a result of the ship's roll, and then fell through the opening in the railing he was attempting to secure. Similarly, it is not known why he was not wearing a lifejacket or a safety belt with a lifeline secured to the ship.

The Bosun was an experienced seafarer with over 14 years of overall experience, and had over two (2) years of experience as a Bosun. As the senior deck rating, it would be expected that he would be best qualified to understand deck work procedures and applicable safe work practices, yet shortcomings were apparent. The Master stated that it was unusual for the Bosun to not use his work belt with safety line.

It is noted that the Bosun's current assignment on the ship was approaching 10 months, and it cannot be ruled out that mental or physical fatigue were contributory factors.

8 See for example section 4.12.1 of the United Kingdom Maritime Coastguard Agency's Code for Safe Working Practices for Merchant Seafarers.

Had the Bosun been wearing a lifejacket, he may still have fallen overboard, but his chances of being found would be improved. His chances of survival would have been further improved if he had been wearing a safety harness with lifeline, since he would either have been prevented from falling overboard or his fall would have been arrested by the safety line.

Regardless of the existing weather conditions and the Bosun's experience, the fact that a Deck Officer was not present to supervise this operation as required by the Company's SMS, and that the Bosun had not worn a lifejacket along with a safety harness with lifeline while putting the removable section of railing in place, is one (1) of a number of indicators that there was not a strong safety culture onboard MATISSE.

Factors Related to the SAR

Internal and external notifications were made immediately after the Bosun fell overboard. However, it is noted that neither of the bridge mounted MOB lifebuoys were released as required by the SMS Man Overboard Procedure. It is also noted that the initial radio broadcast was incomplete and did not include the ship's position.

According to the Master's statement, the Williamson Turn was not attempted because he felt that with the prevailing seas and the ship's turning motion that by coming to a main engine "All Stop," the ship would drift back to the position of the MOB. It is noted that the Columbia River Bar can be difficult to navigate due to the unique confluence of the Columbia River current and opposing forces of the Pacific Ocean.

The fact that the bridge MOB lifebuoy was not released was not explained. Whether this was a conscious decision or an act of omission is unknown, and is viewed as a failure by the crew to adhere to the SMS.

Availability of Lifesaving Equipment and Emergency Preparedness

Based on the crew interviews, it was noted to be normal practice to secure the weather deck lifebuoys in the ship's tally room after the ship got underway. For this casualty, the only lifebuoys that remained in their required location were the port and starboard bridge MOB lifebuoys (which were not released) and the one (1) located at the Pilot embarkation station (which was thrown overboard). Based on available information, the Master's statement that two (2) lifebuoys were thrown overboard cannot be corroborated.

On 22 April 2012, as a result of inconsistencies noted by the attending flag State inspector, i.e., statements regarding drill participation, omitted steps in the Man Overboard Procedure, etc., the ship's crew were required to conduct a fire drill and an abandon ship drill. In both instances the drills were unsatisfactory. It is noted that the crew were likely mentally and physically tired. On 23 April 2012, with the crew rested, the drills were determined to be satisfactory.

Analysis of data in this section indicates the ship's emergency preparedness and overall safety culture is lacking. It also indicates that there may have been reluctance or discomfort on the part of the crew to voice their concerns or to make suggestions, and that there was not a strong safety culture onboard.

CONCLUSIONS

The following conclusions are based on the above findings of facts and analysis:

1. The immediate cause of the Bosun falling overboard, resulting in his being lost at sea and presumed dead, is not known. It is considered likely that he slipped or lost his balance due to the ship's rolling movement while he was attempting to replace the removable section of guardrail in way of the port pilot station.

2. A contributory cause of the loss of the Bosun was non-adherence to procedures established in the SMS or basic safe work practices when working near the ship's side. These included:

    a. not wearing a safety harness with a lifeline secured to the ship, nor wearing a lifejacket;

    b. a Deck Officer not being present to supervise the stowing of the pilot ladder, as required by the Company's SMS; and,

    c. a lack of safety awareness on board the vessel, evidenced by the repeated failure to conduct emergency drills and the observed unsatisfactory performance of post incident emergency drills.

3. Another contributory factor was the lack of emergency preparedness onboard MATISSE, including the lack of lifebuoys on deck and the failure to deploy the bridge wing lifebuoys.

ACTIONS TAKEN

The Master and the Company have taken the following corrective actions based on their review of this very serious marine casualty:

1. The Master instructed the ship's safety officers, urging that they ensure strict familiarization by the crew with regards to emergency procedures. In particular this corrective action was stressed for all on-signing crewmembers. The Company distributed a fleet wide bulletin requiring the same to be conducted on their other managed ships.

2. The Master instructed the ship's safety officers that they are to closely monitor the crew's performance during emergency drills, make note of any failings, and to use repetition as necessary to reinforce correct procedures. The Company distributed a fleet wide bulletin requiring the same on their other managed ships.

3. The Company assessed their procedures for reviewing and analyzing their managed ship's training records to ensure the process provides an adequate level of oversight and feedback towards complying with the Company's SMS and regulatory requirements.

The Administrator concurs with these actions.

RECOMMENDATIONS

Based on the analyses and conclusions, the following recommendations are made:

1. It is recommended that the Company review and, as appropriate, revise, its procedures to:

    a. re-familiarize senior officers with the requirements of the SMS, including their responsibility for ensuring onboard compliance; and,

    b. ensure that the Company's shore staff takes an active role in verifying shipboard compliance with the Company's SMS, including if not already done, witnessing and evaluating drills during regular shipboard visits.

2. It is recommended that the Company review and, as appropriate, revise, their SMS procedures in order to:

    a. reduce the necessity for ship's crew to lean over the side while rigging and recovering pilot ladders; and,

    b. ensure that safety harnesses and lifejackets are worn by ship's crew who may need to lean over the ship's rail or near an opening in the rail.

    Any modifications to how pilot ladders are rigged must be consistent with the requirements of SOLAS Chapter V, regulation 23.

3. It is recommended that the Company conduct a review of shipboard operations to identify required PPE and ensure that seafarers serving on their managed ships are provided the appropriate equipment, and are fully trained in its use.

4. It is recommended that the Company establish a no fault policy to encourage officers and crews serving on their managed ships to make recommendations or suggestions regarding safe work practices, availability of PPE, training, etc.

5. It is recommended that the Company regularly share the lessons learned from near misses and marine casualties with sea staff serving onboard their managed ships.

The Administrator's investigation is closed. It will be reopened if additional information is received that would warrant further review.