PKBWM

PAŃSTWOWA KOMISJA BADANIA WYPADKÓW MORSKICH

FINAL REPORT

033/21

a marine casualty

M/V New Leo

The ship *M/V New Leo* scraping against the pedestal of the western beacon of Brama Torowa III in Zalew Szczeciński on 15 May 2021

April 2022

The investigation of a casualty of *m/v New Leo* was conducted under the Act of 31 August 2012 on the State Marine Accident Investigation Commission (Journal of Laws of 2019 item 1374) and the norms, standards and recommended practices agreed upon within the International Maritime Organisation (IMO) that are binding for the Republic of Poland.

In line with the provisions of the above-mentioned Act, the purpose of the investigation of a marine casualty or incident is to determine its circumstances and causes in order to prevent marine casualties and incidents in the future and improve safety at sea.

In the course of its investigation, the State Marine Accident Investigation Commission determines neither liability nor apportions blame to persons involved in the marine casualty or incident.

This report shall be inadmissible in any criminal or other proceedings aimed at attributing blame or liability for the casualty referred to in the report (Act on SMAIC Article 40 para. 2).

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1. Facts

On 15 May 2021, at approx. 00:40[1], on her voyage from Szczecin to Saint Petersburg, the ship *New Leo* scraped against the pedestal of the western beacon of Brama Torowa III. As a result of the scraping, the ship's hull was damaged in the prow part. The damage was located above the water-line, which enabled the vessel to continue her voyage to Świnoujście, where she stayed until the repairs. The beacon structure was also damaged.

Photo No. 1. M/V New Leo at the Port of Świnoujście, 17 May 2021.

2. General information

2.1. Vessel details

Vessel name: New Leo

Flag: Liberia

Owner: New Leo LTD

[1] LT, the time of occurrence is based on the entries in the log-book of *New Leo*, all the times in the report are stated as LT.

Classification society: Bureau Veritas

Vessel type: General cargo vessel

Call sign: D5IU7

IMO identification number: 9113044

Gross tonnage (GT): 5820

Year of construction: 1997

Width: 15.85 m

Overall length: 102.83 m

Hull material: steel

Type of the S-VDR: Kelvin Hughes MDP-A5

2.2. Information on voyage of the vessel

Information on cargo: In ballast.

Port of departure: Szczecin (Poland)

Port of destination: Saint Petersburg (Russia)

Type of navigation: international

Information on crew: 14 crew members

2.3. Information on casualty/incident

Type of casualty/incident: marine casualty

Date and time of occurrence: 15 May 2021, at 00:40 LT

Geographical position at the time of occurrence: 53°42.7’N, 014°27.9’E

Geographical region of occurrence: Zalew Szczeciński

Nature of water body: Lagoon

Weather during occurrence: wind NE 2 to 3 B. Lagoon condition 1 to 2. Good to moderate visibility. Intermittent rainfall.

Operational status of vessel during occurrence: in ballast

Consequences of casualty/incident: damage to the beacon structure (Photo No. 2), damage to the above-water part of the shell plating (Photo No. 3).

2.4. Information on shore-based entities involved and rescue operations

No rescue operations were carried out and no additional entities were involved in a rescue operation.

3. Description of circumstances of casualty/incident

On 14 May 2021, at 22:35, the ship *New Leo* with a pilot on the side unmoored from the Słowacki Quay and started her journey from Szczecin to the anchorage of the Port of Świnoujście, she was to continue her voyage from there after the pilot disembarked.

The master conducted the departure manoeuvres, i.e. the manoeuvres to clear the quay and turn in the Dębicki Channel. Once the ship left the channel, the pilot took over the control of the ship.

As they were passing by Dock No. 5 in the Port of Szczecin, the pilot was informed by a VTS operator about the positions of two dredgers operating in the Szczecin-Świnoujście fairway. The ship passed by the first dredger *Meuse River* at the level of the Port of Police. The other dredger was in Zalew Szczeciński (at approx. 32nd km of the fairway).

At approx. 11:45 pm, as the ship was entering Zalew Szczeciński, the pilot enabled the ship's autopilot. 5 minutes later, at approx. 11:50, the second officer and a cadet came to the bridge.

After the watch was handed over at approx. 00:10, the master arranged with the pilot that he would go to his cabin. The ship was controlled by means of the autopilot.

At 00:26, the pilot contacted the dredger *Vox Amalia* in order to decide how to pass by the dredger. The talk was kept in Polish. Together with the pilot of the dredger, this pilot decided that he would pass behind the stern of the dredger, i.e. on the western side of the fairway.

At approx. 00:35, the vessel was at φ 51°42.0'N, λ 014°29.0'E, at the distance of approx. 1 NM to Brama Torowa III, following the course over ground (COG) of 320.2° at the speed of 11.6 *kn,* the heading was 322.0°. Two minutes later, i.e. at 00:37, the heading was 321° and the course over ground was 316.5°. The ship got outside the fairway (Figure No. 1). As the vessel was entering Zalew Szczeciński, she was exposed to the current and wind, which caused the difference of 4-5° between the heading and the course over ground.

The heading of 321° - 322° was maintained until approx. 00:39, when the pilot noticed the navigational light of Brama Torowa III and rapidly changed the heading to 333° (Table 1).

Figure No. 1. A screenshot of a VTS playback recording.

Time	Heading [°]	COG [°]	SOG [kn]
00:39:33	322	316.9	10.60
00:39:45	323	317.3	10.60
00:39:49	327	318.5	8.30
00:39:55	331	318.8	8.80
00:39:58	333	319.1	9.10
00:40:04	331	323.5	9.60
00:40:13	328	325.3	9.80
00:40:19	328	324.1	9.80
00:40:40	330	326.9	9.90

Table 1. Dynamic data of m/v New Leo based on the VTS playback recording.

At 00:40, the ship *New Leo* scraped with the port side of its hull's prow part against the above-water part of the western beacon of Brama Torowa III and damaged it.

Photo No. 2. Damage to Brama Torowa III

After the allision, the master came to the bridge and the autopilot was switched to the manual control. The second officer took over steering. At the same time, a crew member went to the ship's bow to estimate the damage. Using a VHF radio, he reported to the master that the ship's side was penetrated above the water surface.

Photo No. 3. Damage to the vessel m/v New Leo

At approx. 00:41, the engine speed was reduced and the vessel began slowing down.

Time	SOG
00:41:18	10.2
00:41:32	9.9
00:41:47	9.7
00:41:53	9.4
00:42:08	9.2
00:42:17	8.9
00:42:32	8.5
00:42:47	8.3
00:42:53	8.1
00:43:17	7.9
00:43:33	7.6
00:44:06	7.3
00:45:12	6.9
00:46:04	7.1
00:47:14	8.1

Table 2. Speed of m/v New Leo based on the VTS playback recording.

At 00:44, the pilot called Szczecin Traffic requesting contact on a working channel. The operator indicated channel 20. As a result of failed attempts to call each other, the information about the accident of the vessel was given after approx. 4 minutes, i.e. at 00:48.

At the same time, the dredger *Vox Amalia* finished discharging the dredged material and started her voyage to Szczecin, passing the ship *New Leo*, that followed the course over ground (COG) of 326.6° at the speed of 8.7 kn.

Figure No. 2. A screenshot of a recording in the AIS of m/v New Leo.

Having passed by the dredger, the autopilot of the ship *New Leo* was enabled again and she continued her voyage to Świnoujście. On 15 May, at 03:15, the vessel moored in Świnoujście, at the Chemików Quay.

4. An analysis and remarks concerning the factors that led to the marine casualty or incident, considering the results of investigations and experts' evaluations

4.1. Mechanical factors

The ship was in a good working order. There was no information on any issues related to the equipment aboard.

The vessel has two cranes that form an integral part of the its structure. The cranes are on the port side and partially restrict the visibility in the port side sector. (Photo No. 4) The bow sector of visibility and starboard were not restricted in any manner.

Photo No. 4. The view from the bridge of m/v New Leo – the middle bull's eye window.

4.2. Human factors

The manoeuvres of the vessel were conducted at night; on that account, one of the factors that contributed to the casualty could have been poor mesopic vision, i.e. reduced vision in low light.

In extremely bad conditions, i.e. in scant light, people can see the world without any colours, like in a black and white film. One can only discern the degree of brightness of elements in the surroundings with a limited gradation. The resolution of the eye, i.e. the ability to

distinguish details in an image, is also reduced and the very high resolution in the centre of the visual field is gone.

4.3. Organisational factors

In the SMAIC's judgement, the lack of proper work organisation for the watch and cooperation with the pilot was one of the causes of the occurrence. There was no exchange of information between the pilot and the crew on the bridge. When agreeing upon the manoeuvre required to pass by the dredger that was in the fairway, the pilot spoke Polish. He did not consult his intentions with the officer in charge of the watch and did not inform that officer about his intended actions.

The recommended course to follow in that fairway section is 321.6°. The ship followed the course of 321° -322°; however, this was the actual heading that did not allow for the external conditions, i.e. the wind and current. The course over ground was 316° - 317°, which caused the vessel to get off the axis of the fairway towards its western side; and in consequence, the vessel entirely left the fairway. The light of the western beacon of Brama Torowa III was noticed to the right just a moment before the casualty (Photo No. 5).

Photo No. 5. An image from a CCTV camera on m/v New Leo

Pursuant to IMO Resolution A.960(23) Annex 2 Article 2, the pilot’s presence on board does not relieve the master or officer in charge of the navigational watch from their duties and obligations for the safety of the ship.

The officer in charge of the navigational watch is responsible for the save navigation of the ship and for the compliance with the International Regulations for Preventing Collisions at Sea of 1972 as amended. In line with Rule 5 of the above-mentioned regulations, a careful visual observation shall be maintained at all times in order to:

- maintain a continuous look-out by sight and hearing as well as other available means for any significant changes in the operational environment;

- make a full appraisal of the situation and of the risk of collision, stranding and other navigational hazards; and
- detect ships or aircraft in distress, shipwrecked people, wrecks, wreckage and other dangers threatening the safety of navigation.

During a watch, the course, position and speed should be checked at sufficiently short intervals, using any available navigational aids as required, to ensure the ship follows the course set.

During that journey, the officer in charge of the navigational watch, did not navigate with the radar or the paper navigational chart. There are no entries concerning the position control whatsoever. Neither was observation kept in the proper manner; there was actually no observation kept.

4.4. The impact of external factors, including those related to the marine environment, on the occurrence of the marine casualty

The weather conditions were moderate. There was light wind from the west, the lagoon condition was 1 to 2. Good to moderate visibility. Intermittent rainfall; it could affect the identification of objects on the radar.

A dredger was at the 32nd km of the fairway and it was discharging the dredged material. It was well lit with white light. The navigational light of the western beacon of the Brama Torowa is also white. The lights were at the distance of approx. 1 NM. It could affect the identification of objects.

5. Description of the investigation results, including safety issues and conclusions of the investigation

The SMAIC investigated the casualty on the basis of materials obtained from the ship *New Leo*, VTS station and hearings of the participants to the occurrence. The reading of the ship's data recorder S-VDR did not show any sound or video recordings in the relevant time interval for the occurrence of the casualty, which made it difficult to determine what exactly happened. The data obtained from the ship's S-VDR were from time intervals after the occurrence concerning the ship, that is from 15 May 2021 16:33 UTC to 17 May 2021 08:07

UTC[2]. There were no audio or video recordings in the retrieved data either. There are two supposed causes of the lack of proper data record from the S-VDR: the SMAIC was given a wrong disc or the VDR malfunctioned.

On the basis of materials obtained from the VTS, the vessel's movement was reconstructed according to entries in the AIS. Figure No. 3 shows the route of *m/v New Leo* on 15 May 2021 from 00:35 to 00:50.

Figure No. 3. Route of m/v New Leo based on the VTS playback recording.

It is presumed that the manoeuvre to pass by the dredger had been planned without taking into account the position of the western beacon of Brama Torowa III whose white navigational light could blend in with the lights of the dredger *Vox Amalia* and thus was hardly visible. The intermittent rainfall could also hamper its acquisition on the radar. In addition, schematism due to repetitive tasks and tedious work on numerous occasions cause absent-mindedness and

[2] UTC - Coordinated Universal Time

divert attention from the task, which often results from racing thoughts. Unfortunately, routine is quite often the cause of accidents at work. This results from the fact of our conviction that we already know everything about a task, that we are experts as regards this task and that it is impossible for us to make a mistake here. On numerous occasions, perpetrators of accidents tend to blame other people or entities and cannot accept the thought that they could make a mistake under circumstances they knew perfectly well. However, on the basis of the gathered materials, the SMAIC considers the following decisive factors to have contributed to the casualty:

- poor organisation of work on the bridge,
- lack of on-going determination of the position, and
- lack of proper observation.

6. Recommendations.

The State Marine Accident Investigation Commission finds it advisable to address the following safety recommendations that constitute proposals for measures which could help prevent similar casualties in the future to the following entities.

6.1. Pilot station

The pilot's work requires continued vigilance while piloting ship under any weather conditions. The pilot needs to work in bright or low light depending on the weather or time of day. This profession requires special psychical and technical aptitude.

The State Marine Accident Investigation Commission recommends the introduction of an internal obligation to have eye examinations at well-established eye clinics or by doctors licensed to carry out dark-room[3] tests.

In addition, the SMAIC recommends that this report be used in the training program for marine pilots in line with the provision of Annex 1 to IMO Resolution A.960(23)[4].

7. List of photographs

[3] Mesopic vision testing equipment.

[4] *Recommendations on Training and Certification and on Operational Procedures for Marine Pilots other than Deep-Sea Pilots.*

8. List of figures

9. Sources of information

Casualty notification.

Materials received from VTS Szczecin.

Materials received from the Harbour Master's Office in Świnoujście.

Hearing of persons involved in the casualty.

A recording from the ship's CCTV camera.

10. Composition of the accident investigation team

Head of the team – Monika Hapanionek – Member of the SMAIC

Member of the team – Grzegorz Suszczewicz – Vice Chairman of the SMAIC