



SMAIC
STATE MARINE ACCIDENT
INVESTIGATION COMMISSION

FINAL REPORT

33/20

Marine accident

M/V

X-Press Mulhacen

The pilot's fall into the water on the approach to the Northern Port in Gdansk on June 5, 2020.

June 2021



The investigation of the accident of pilot's fall into the water during the embarkation of the X-Press Mulhacen vessel was conducted under the State Marine accident Investigation Commission Act of 31 August 2012 (The Journal of Laws of 2012 item 1374) as well as norms standards and recommended procedures agreed within the International Maritime Organisation (IMO) and binding the Republic of Poland.

The objective of the investigation of a marine casualty or incident under the above-mentioned Act is to ascertain its causes and circumstances to prevent future casualties and incidents and improve the state of marine safety.

The State Marine Accident Investigation Commission does not determine liability nor apportion blame to persons involved in the marine casualty or incident.

This report shall be inadmissible in any judicial or other proceedings whose purpose is to attribute blame or liability for the accident referred to in the report (Art. 40.2 of the State Marine Accident Investigation Commission Act).

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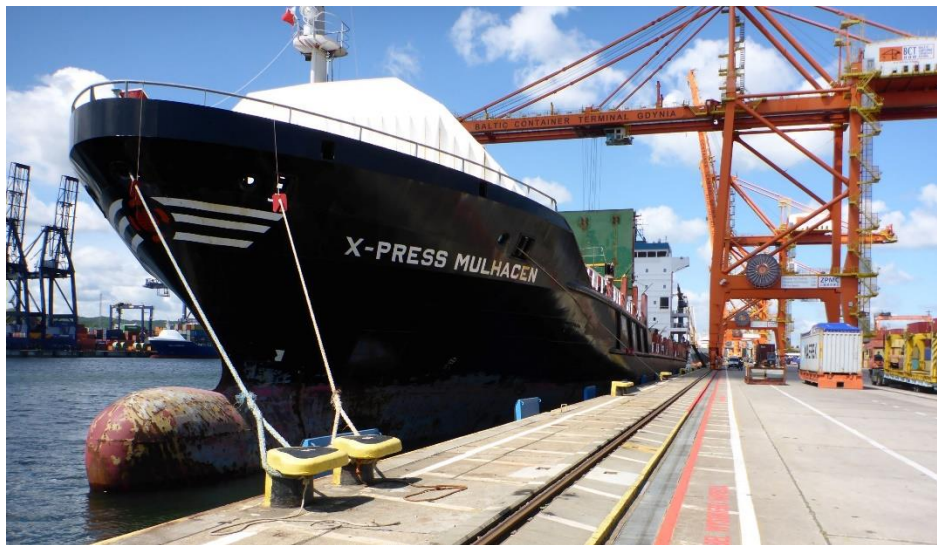


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1. The facts

On June 5, 2020, at approx. 3:48 am¹LT during the embarkation of the X-Press Mulhacen ship at the approach to the Northern Port in Gdansk, the pilot, while climbing the ladder, fell into the water. He was immediately picked up by the pilot boat crew and transported ashore to the Gdansk Pilot Station. The pilot was not injured in this incident and afterwards went home on his own.



Pic. 1 X-Press Mulhacen in Gdynia port on June 23, 2020.

2. General information

2.1. Vessel Particulars

Vessel name:	X-Press Mulhacen
Flag:	Malta
Owner:	Novena Private Limited
Classification society:	Korean Register
Vessel type:	Container ship
Call sign:	9HA3465
IMO No.:	9365960
Gross tonnage:	7702

¹ Time as recorded in the X-Press Mulhacen logbook. According to the notification from the Harbor Master's Office of Gdansk it was approx. 3:45 am.



Year of build:	2008
Breadth:	20.60 m
Length overall:	141,60 m
Hull material:	steel

2.2. Voyage Particulars

Vessel partially loaded.

Last port of call: Gdynia (Poland),

Next port of call: Gdansk, Northern Port.

2.3. Accident Information

Type of accident:	marine accident
Date and time of accident:	June 5, 2020, at 03:48 am.
Position:	54°24,8'N 018°46,2'E
Geographical area of the accident:	Baltic Sea
Nature of the water region:	Port of Gdansk roadstead
Weather during the accident:	wind SE 4-5, state of sea 3, good visibility

The operational condition of the vessel at the time of the accident:

partially loaded - containers

Place of the accident of board:

a pilot ladder, starboard of the vessel

Results of an accident:

fall into the water

2.4. Shore Services and Rescue Action Information

No rescue action was conducted in relation to the event

3. Circumstances of the Accident

On June 4, 2020, at 8:00 am, the pilot taking part in the accident started his service at the Pilot Station in Gdansk.

On June 5, at approx. 3:00 am, he received the first order to lead the ship Volga Maersk out of the DCT Container Terminal of Northern Port in Gdansk and then bring in the X-Press Mulhacen vessel in its place.

At 3:30 am, X-Press Mulhacen's course² was 225°, speed 9.14 knots, and its position was 54°25,8' N 018°53,25' E.

At about 3:44 am, at a position 54°24,5'N 018°45,6', the pilot left the outgoing vessel Volga Maersk and embarked the pilot boat - Pilot 21 (Pic. 2), which headed for the X-Press Mulhacen vessel.



Pic. 2 Pilot boat of the Gdańsk Pilot Co. Ltd sea services company.

While on the pilot boat, the pilot asked, by radio, the captain of X-Press Mulhacen vessel to slow down to a speed of 6 knots. After about a minute, the pilot boat was nearby entering vessel. After sailing around its stern, at about 3:48 am, the boat was alongside to the vessel's starboard side. The speed of the X-Press Mulhacen was about 6.5 knots, and course 236°, the pilot ladder was rigged on the starboard side of the vessel (Pic. 3).

During the approach of the pilot boat to the side of the vessel the pilot was on a platform located on the roof of the pilot boat, and the assistant mechanic was on the deck by the superstructure. Before getting on the pilot ladder, the pilot descended on the first step of the ladder placed on the port side of the pilot boat (Pic. 4). When getting onto the gangplank fixed on the vessel's side, the pilot grabbed it by his left hand and put his left foot on the pilot ladder step while holding the pilot boat deck handrail with his right hand. While trying to reach the pilot ladder with his right arm and leg, he limply turned left, which caused the left foot to slide off the pilot

² Courses and speeds given in the report are over ground read from the VTS radar image.

ladder The pilot could not hold to the pilot ladder with one hand and consequently fell into the water.



Pic. 3 Pilot 21 boat alongside X-Press Mulhacen vessel.



Pic. 4 Pilot 21 pilot boat.



Pic. 5 The pilot boarding the X-Press Mulhacen vessel.

After falling into the water, the pilot pushed himself off the side of the pilot boat then off the side of the vessel. The pilot boat mechanic noticed the pilot's fall into the water, and the crew of the X-Press Mulhacen vessel present on board to secure the pilot's entry to the ship. After about 6 seconds, the pilot boat skipper, alerted by the mechanic, reduced the speed to avoid the pilot run-over. Simultaneously, on VHF channel 14, the skipper sounded the "Man Overboard" alarm and ordered to stop the engine of the X-Press Mulhacen vessel.

Pilot-21 pilot boat made circulation to the right so that the pilot in the water was in front of the boat. The rescue action began. The boat mechanic threw a lifebuoy with a lifeline attached, but it landed too far, and the pilot wasn't able to catch the lifebuoy. The second throw was correct. At that time pilot boat was at drift. At 3:52 am³, the pilot was picked out of the water by the mechanic and skipper of the pilot boat.

On the boat, after the initial examination, the pilot did not report any injuries and refused to call for medical assistance, and, at his request, he was taken to the Gdansk Pilot Station from where he went home with his car. X-Press Mulhacen vessel was directed to the anchorage to wait for the second pilot. At 4:45 am, a new pilot entered the ship and at 6:00 am, the ship moored at the DCT Container Terminal.

The same day the pilot underwent a medical examination, and no injuries were found.

³ Time as recorded in X-Press Mulhacen vessel log-book.



4. Analysis and comments on the factors that contributed to the marine accident or incident, taking into account the results of the investigations.

Climbing a vertically positioned ladder is a complex biomechanical task that requires good balance, coordination and concentration. It is not a particularly difficult task, and it seems that learning to climb is not a strenuous activity. Accident statistics, however, show that the number of accidents while climbing ladders contradicts the ease of climbing as it is generally perceived. Therefore, many research centres worldwide conduct research and analysis of the reasons for this situation and why such accidents happen.

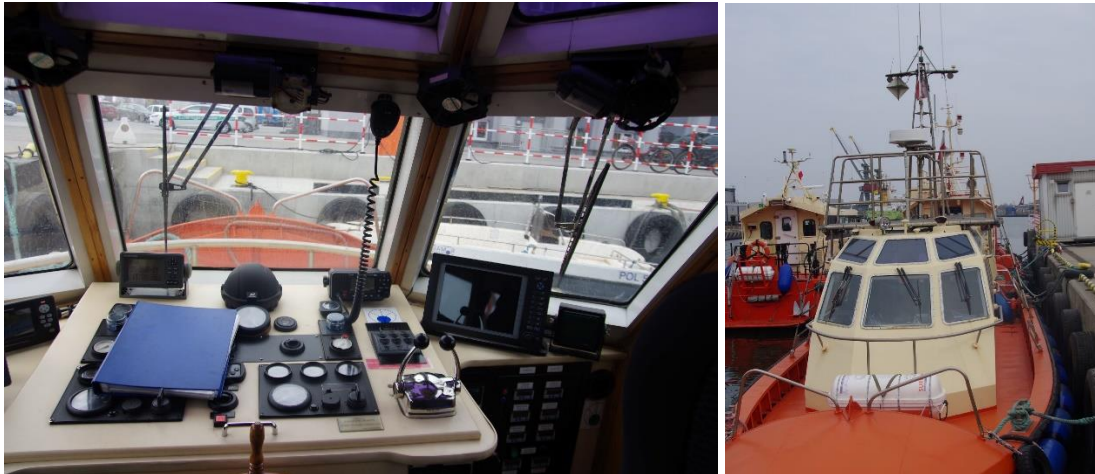
Compared to ladders climbing a rope ladder is much more difficult and requires sufficient physical strength. Both the pilot boat and the pilot ladder hung on the vessel's side, move independently and with different rhythms due to the movement caused by the waves. In such a situation, these tasks become particularly difficult. The embarkation process is even more complicated when it occurs at night and in unfavourable weather conditions.

As a result of the conducted scientific research, it was found that a necessary condition for safe climbing is constant contact with the pilot ladder at three points. Both hands and foot or both feet and a hand. Attempting to remain on the pilot ladder with one hand and the foot on the same side of the body puts excessive stress on the hand that holds the rope of the pilot ladder, double-twisting force on the spine and creates high torque in the body axis.

The analysis of the following factors allowed us to determine the causes of the pilot's fall into the water.

4.1. Mechanical factors

The construction of the Pilot 21 pilot boat makes it impossible to observe the pilot's behaviour while climbing the pilot ladder. Small windows in the sloping roof of the superstructure above the head of the pilot boat do not allow to have a full view of the situation. In addition, the construction of the platform and the ladders attached to it requires the pilot boat to be at a very precise position concerning the pilot ladder of the vessels to be embarked. Lack of stability or the pilot boat navigating the waves makes it difficult for the pilot to climb the pilot ladder.



Pic. 6 The cockpit of Pilot -21 pilot boat.

4.2. Human factors

The pilot involved in the accident had thirty years of seagoing practice and Sea Pilot Certificate. He started his service on June 4 at 8:00 am after a two-week rest period. Pilots at the Gdansk Port Pilot Station work in shifts in the two-week-on and two-week-off cycle.

The first order on this shift was to lead the ship out of the container terminal and then bring the X-Press Mulhacen in its place.

The Pilot 21 pilot boat crew consists of a skipper and a mechanic who assists the pilot in embarking and disembarking the vessel. The manning cycle of the pilot boat is also based on a 24-hour shift (from 8:00 am to 8:00 am on the following day) followed by 48 hours off.

The mechanic has five years of experience working on pilot boats and was employed at the Gdansk station from February 2020 under a contract of mandate⁴. Previously, he worked half-time at the Pilot Station in Gdynia.

4.3. Organisational factors

According to the List of Radio Signals, the pilot embarks the vessel entering the Gdansk North Port has the coordinates of 54°25'85N 018°53'25E, which is approximately 6 NM from the North Port breakwater⁵. The pilot, after disembarking from the vessel leaving the port, was about to embark the X-Press Mulhacen vessel at 54°24,8' N 018°46,2'E, at a distance of less than 2 NM from the breakwater, which significantly reduced the time and route of the vessel

⁴ Additional worker, employed as needed.

⁵ Light Iso G.5s 12m 6M. Northern breakwater.

exiting with the assistance of a pilot (Figure 1). Reducing the distance reduces the time to act and creates a rush.

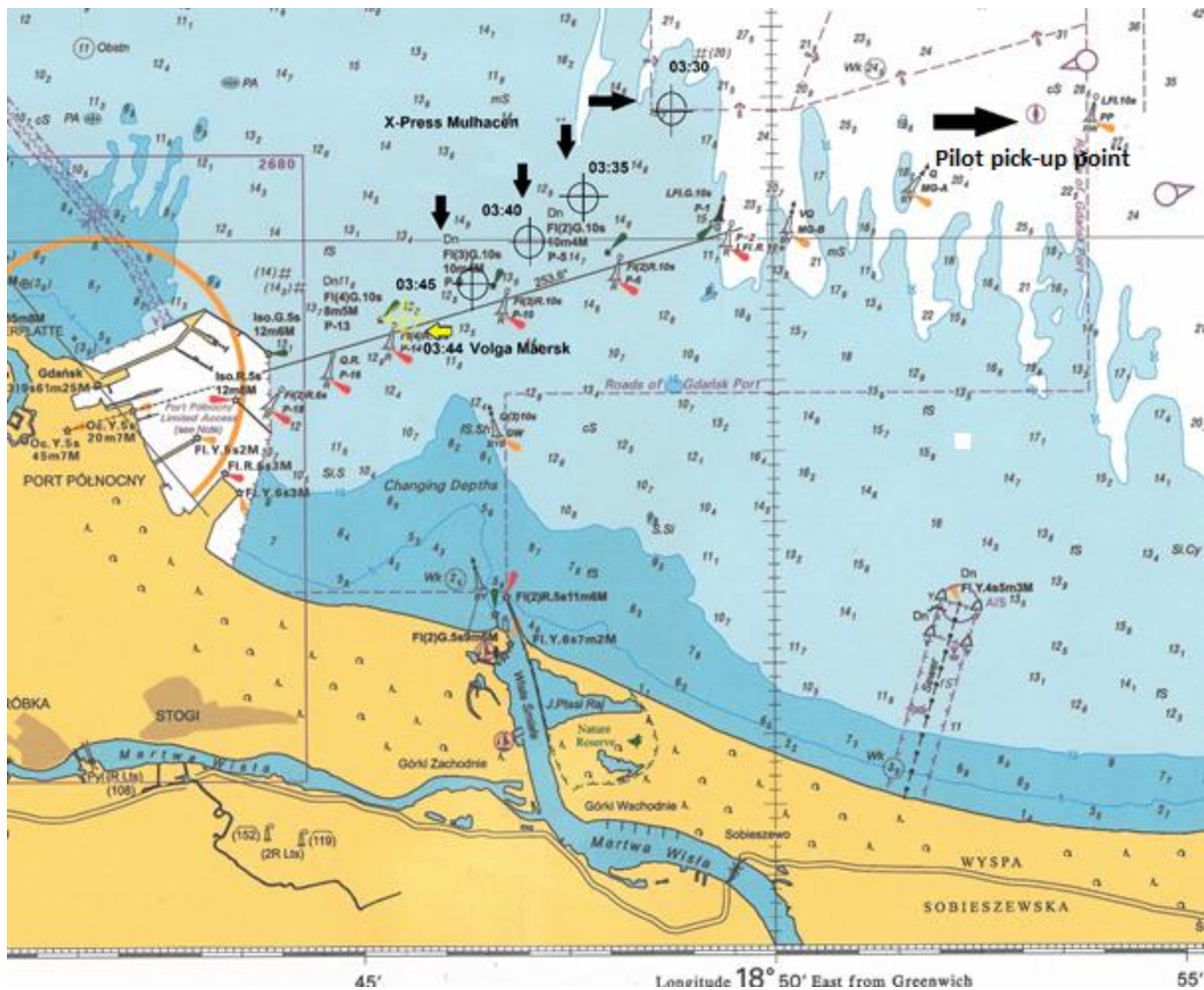


Fig. 1 Scan of the BA 2688 chart. Approach route for the pilot of the X-Press Mulhacén vessel.

Following the rule in force, the pilot boat sailed around the vessel's stern and approached its starboard side. The pilot stood on a platform located on the pilot boat roof, and the assistant mechanic remained below on the deck. When approaching and parallel alignment of the pilot boat along the ship's side, the pilot tried to climb the pilot ladder. When analysing the video from the ship's industrial camera, the Commission found that the reason for the unsuccessful attempt was improper positioning of the pilot boat due to the lack of stabilised contact with the ship's side. When the pilot grasped, with his left hand, the rope of the pilot ladder, the pilot boat touched the ship's side followed by a slight bounce of the pilot boat at the moment when he put his left foot on the pilot ladder and its slight retraction from the side of the vessel. Then the pilot

put his right foot on the ship's pilot ladder and after removing his right hand from the pilot boat railing, he fell into the water (Pic. 7).



Pic. 7 Pilot boarding X-Press Mulhacen.

Due to a small opening between the pilot boat's curvature and the vessels' side, the pilot fell into the water and not on the pilot boat deck. The pilot boat skipper, who did not see the pilot fall into the water, reacted with a strong backwards manoeuvre only after the mechanic alarmed him about the pilot's fall, which happened only after about 6 seconds.

In the Commission's opinion, the position of the pilot boat was not stabilised alongside the vessel. Neither the pilot nor the mechanic who was already on board at the time of the pilot boat approach to the vessel's side knew the skipper's plan of approach to the vessel's side, and he, in turn, did not see the pilot intending to enter the pilot ladder.

The Pilot Station in Gdansk has no formal rules for boarding and disembarking ships. In the opinion of the management of "Gdansk-Pilot" Sea Services Company, as well as of the Pilot Station, there is no need to codify or regulate the rules and regulations of work in maritime pilotage due to its uniqueness, changeability and, above all, the possibility of mastering or learning it only by passing on in everyday practice in the environment of people dealing with the port pilotage.

Many overseas pilot organisations have their codes of safe practice and procedures. Examples include the Pilots Association in Great Britain⁶ or Singapore⁷.

⁶ Code of Safe Practice for the Embarkation and Disembarkation of Pilots Code of Safe Practice.

⁷ Transfer of pilot from Vessel to Pilot Launch or vice versa. PSA Marine (Pte) Ltd – Pilotage Services



4.4. The influence of external factors, including those related to the marine environment, on the occurrence of a marine accident

Embarkation of the X-Press Mulhacen vessel took place at night, affecting the pilot's correct assessment of the situation. The wind force was 4-5 ° B; the wave height was 0.5-1 m. At the pilot's request, the captain changed the vessel's course to protect the pilot boat from wind and waves.

5. The description of the results of the investigation performed, including safety issues and conclusions emerging from the investigation

In the Commission's opinion, the reasons for the fall of the pilot embarking on the X-Press Mulhacen vessel was the improper way of boarding the pilot ladder due to the lack of stabilisation of the position of the pilot boat at the vessel's side. The pilot's action was rushed and may have been due to the limited time at his disposal when the pilot pick-up position was much closer to the port entrance head. In addition, the accident was caused by the limited view or, in fact, the lack thereof, of the position from which the pilot enters the pilot ladder from the pilot boat control point by the skipper and the lack of proper assistance for the pilot entering the ladder by the mechanic who was obliged to do so.

At the time of the accident, the pilot had only two body support points that were in contact with the pilot gangplank; what's more, they were on the same side (left hand and left leg), which had an impact on holding the grip and uncontrolled rotation of the body and consequently falling into the water.

6. Safety recommendations

6.1. Pilot Station in Gdansk

In 1990, when studying the principles of transferring knowledge within professional groups with a specific professional profile, customs, common language and rules of behaviour (e.g. craftsmen, doctors, teachers, aviators, maritime pilots), scientists created the concept of a "community of practitioners".

At times communities of practitioners try to be "hermetic". Assessing the performance of such communities is difficult, and directions and comments from the outside are seen as unnecessary and not welcomed. Sometimes, the pilots think that the good practices that they believe are proven and should be followed" in everyday practice are not always the best because they do



not reflect all the skills and experience of the entire group. The concept of a self-guiding sufficiently motivated professional group has long been rejected.

After years of research, it is now known that documenting knowledge in the form of a "record" (the code, list of conduct and behaviour, safety management system) is the best method of sharing knowledge within the group, accelerating learning and rules of conduct that have so far been treated as implied and passed over in silence.

The record that can be conventionally called a code of good pilotage practices also enables external control, which becomes necessary due to the extensive mutual influence of maritime services on each other based largely on the rapid flow of information connected with the ongoing process of digitisation of all port services. The Commission recommends creating a provision that will also provide a valuable basis for a good program that includes the training of pilots and collaborators.

At the same time, the Commission recommends introducing internal pilot training and practical exercises with the participation of the pilot boats and their crews. The training program should consider critical scenarios such as "Man Overboard" or a pilot boat capsizing.

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9. Sources of information

Accident notification.

Hearing of the participants and witnesses of the accident.



VTS radar image.

CCTV footage of X-Press Mulhacen vessel.

Materials of the Institute of Meteorology and Water Management

10. Participation of countries with significant interest

- Malta Marine Safety Investigation Unit

11. Composition of the team investigating the accident

Team Head – Monika Hapanionek – Team Member

Team Member – Marek Szymankiewicz – Commission's Secretary