

OCCUPATIONAL ACCIDENT

Very serious marine casualty: Three fatalities under the bow ramp on a RO-RO passenger ferry

What happened?

On 11 August 2024, upon arrival at the port of Mali Lošinj, Croatia, the crew members of the RO-RO passenger ferry „Lastovo“, built in 1969, proceeded to inspect the condition of the bow visor rubber gasket. This required the bow ramp to be fully raised in order to access the triangular bulbous bow platform.



Safe operating and securing the ramp has to be performed on three different locations on board, in a specific sequence. On the day of the accident, the crew did not secure the ramp as they had routinely done before departure. This was primarily because the task was not part of their usual routine but was intended only as a quick inspection of the gasket's condition.

When the Master, from the bridge, realized that the ramp had not been secured, he attempted to warn the crew by calling them on the portable radio, but received no response. Internal communication was hindered by the loud noise from the ramp's hydraulic system. In an effort to improve communication, the Master shut down the hydraulics to eliminate the noise and repeated his calls, but still received no response. Meanwhile, the crew had already begun working beneath the ramp. Shortly after, the unsecured ramp crashed to the ground, resulting in three fatalities and one crew member seriously injured.

Why did it happen?

The accident root cause was the crew's incomplete understanding of the design and technical characteristics of the bow ramp system. For example, the crew was not aware that shutting down the hydraulics would lead to a loss of operating pressure in the system, resulting in the inability to hold the ramp in place when not secured. Furthermore, the crew was convinced that the system had automatic braking elements that prevents sudden falls. This lack of understanding stemmed from the absence of operating procedures that should have been posted at operating places on board, as well as the absence of documentation regarding the bow ramp hydraulic system design. As a result, the crew was not fully aware of the system's capabilities, limitations, and the associated risks when operating the bow ramp. In fact, they were confident in their familiarity with the system's features, and their actions were driven by this impression.

In addition, there were other contributing factors, including, inter alia:

- familiarization with the bow ramp operations were passed down by word of mouth, and not according to written documentation reflecting actual system characteristics
- absence of ramp securing and locking alarms and indicators
- limited communication tools (both in quantity and accessories)
- lack of integration of 'stop work authority' principles into company procedures
- inadequate system for maintaining records of evidences of past incidents
- operational tasks take up most of the deck officers' time, leaving them with insufficient time for task planning and risk assessment.

The investigation also revealed unclear ISM procedures and found that both internal and external audits did not effectively assess the system's performance.

What can we learn?

Some types of bow ramp hydraulic systems are designed in such a way that they cannot self-hold if the hydraulic system is turned off and the ramp is not mechanically secured. The company should identify the capabilities and limitations of such technical designs and make this information available to the crew, ensuring appropriate familiarization with specific systems.

Crew members on a ship operate various systems, devices, and equipment. Therefore, operating instructions and a thorough understanding of specific technical designs are essential to ensuring their correct and safe use — especially when tasks require coordination across different locations on the ship. Additionally, crew familiarization with the ship's systems, devices, and equipment should align with the manufacturer's instructions or, at a minimum, accurately reflect the system's technical performance, including its capabilities, limitations, and associated risks. All of the above should be identified, documented, and assessed through ISM procedures.