



## Analysis of The Pilot Fall from The Pilot Ladder While Climbing to The Board of MV Van Star in The Rouen River Area

Samsul Huda<sup>1\*</sup>, Fatimah Fatimah<sup>2</sup>, Iris Azhari Zulkaranen<sup>3</sup>  
<sup>1,2,3</sup> Politeknik Ilmu Pelayaran Semarang, Indonesia

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### Abstract

Therefore, it is important to take care to protect both the equipment and current human resources on board, given how often it is for work accidents to happen there, particularly during the pilot transfer phase—especially causing severe pain for everyone who is exposed to it, as in workplace mishaps involving stair falls, stairway sliding, or other contributing elements like sea waves and wind speed. The goals of this study are to identify the variables that lead to pilot falls, how to maintain pilot ladders, and how to enable pilots to board ships securely. In order to ensure that the research process is in line with the facts, researchers employ theoretical underpinnings as guidelines and qualitative approaches that place a greater emphasis on technical factors. When conducting field research, information is gathered through observation, documentation studies, interviews, and literature reviews. To address the problem formulation, the gathered data was then examined utilizing a fishbone diagram analysis technique. This study shows that during the maneuvering of the MV pilot pick-up, the pilot falls from the deck side of the boat via the pilot ladder. Van Star in the Rouen River area, specifically internal factors, such as a lack of safety awareness and disregard for pilot ladder pilots, and external factors, such as the ship being engaged in the process of maneuvering a pilot pick-up, which resulted in the creation of high waves as the boat pilot approached. It demonstrates that the upkeep and use of the pilot rung, specifically, a deeper understanding of pilot ladder arrangements and performing PMS (plan maintenance system), notably on pilot ladders, are necessary if the ship's draft exceeds the prescribed limit in order to prevent the accident.

**Keywords:** *Pilot; Pilot Ladder; Maintenance; Solutions*

### INTRODUCTION

All jobs have a risk of work accidents due to human error (human negligence), environmental factors that can occur, and the equipment provided. Therefore, considering how rampant the potential for work accidents to occur on board, especially during the pilot transfer process, it is necessary to take preventive measures to protect existing human resources and also the equipment on board.

We also need to know about personal injuries that occur while working on ships, such as falling at work, burns, training with lifeboats, the process of mooring operations, accidents in closed spaces, man overboard, and head injuries. Thus, we can find out what personal injuries can occur during the pilot transfer process in MV. Van Star, that is, fell in work.

From what we know, jobs such as pilots have a great risk if the pilot has an accident, such as falling from the pilot ladder during the onboard pilot process or pilot transfer in water. The author found that maintenance of supporting equipment, such as pilot ladders and combination ladders, was not carried out properly. Therefore, there is a risk of work accidents, which could potentially cause paralysis or death and especially create deep trauma to the Anyone who experiences it can experience an example of a work accident, namely falling from a ladder, slipping while climbing stairs, or other external factors such as water waves and wind speed.

It can be found in the lack of existing knowledge and experience regarding the onboard pilot process, preparation of tools that do not comply with safety standards, lack of understanding of

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Corresponding author's email: [azhari.zulk@gmail.com](mailto:azhari.zulk@gmail.com)

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work implementation, and a series of procedures that have not been carried out properly. The above are the basic reasons for accidents, such as a pilot falling on the pilot boat deck on the MV ship—Van Star maneuvering in the waters of the Rouen River area.

## **LITERATURE REVIEW**

### **Definition of Pilot and Pilot Ladders**

Pilots are sailors who guide hazardous or crowded waters, such as harbors or river mouths and are traversed by ships. However, the pilot is only an adviser, as the skipper retains legal control of the ship. The pilot's job is to safely get the ship in and out of the port because the pilot has more knowledge than the skipper. They understand the local area being navigated so the ship avoids navigational hazards.

Pilot Ladder is a ladder mounted on the hull of the ship, right (starboard) or left (port), for the purpose of raising (embark) or lowering (disembark) guides. For convenience or safety reasons, when a ship is anchored, for example, the crew also uses a pilot ladder for access to get on and off the ship compared to an accommodation ladder or gangway ladder.

### **Purpose**

Knowing the factors that cause a pilot to fall using a pilot ladder on the pilot boat deck side when the process of maneuvering on an MV ship. Van Star in the Rouen River Area. Furthermore, find solutions so that pilots can safely onboard.

### **Type of Factor that cause pilot fall**

Plans, berthing locations, and other topics ensure safe passage across all ports. In terms of ship safety, the ship's maneuverability is one of the factors that is important to note. In addition to the shape of the hull, the propulsion system, and the steering system, there are a number of other parameters that also influence the ship's maneuverability including ship speed, bow trim, change in draft, effect of the longitudinal center of buoyancy, the ratio of the length and width of the ship, the diameter of the ship's propeller blades, rudder area and keel dimensions. The six degrees of freedom that make up the ship's motion behavior are, in theory, surge, sway, yaw, heave, roll, and pitch.

### **Work Accident**

According to the fishbone analysis, the causes of work accidents are divided into:

1. Man :
  - a. Not using PPE according to established procedures.
  - b. Lack of awareness and awareness of safety in pilot ladder climbing activities.
2. Method :
  - a. Lack of supervision from the officer responsible for maintaining the guide ladder.
  - b. Non-compliance with existing standards and procedures.
3. Machine :
  - a. Supporting tools that have a lot of repairs and are not suitable for use.
  - b. Tools that are not maintained and are not placed properly.
4. Environment :
  - a. The condition of the ship that is maneuvering is affected by currents.
  - b. The creation of high waves when the pilot boat approaches.

## **RESEARCH METHOD**

### **Research Method**

The research method used in this research is qualitative. The focus of the qualitative research method is on analysis or description. The technical part of qualitative research is prioritized, and the researchers use the theoretical underpinning as a guide to ensure that the research method is in line with the facts they discover when conducting field research. It is a guide so that the research process is in accordance with the facts they find during field research.

**Data Collection Techniques**

Techniques or methods used to gather data for analysis are referred to as data-gathering techniques. This technique requires strategic and systematic steps to obtain valid data in accordance with reality.

**Data Analysis Technique**

The source of data topic of a study is the area from which information is gathered. A respondent is a person who responds to or answers the researcher's questions, both written and oral, if the researcher conducts interviews to get his or her data.

**Data Validity Testing**

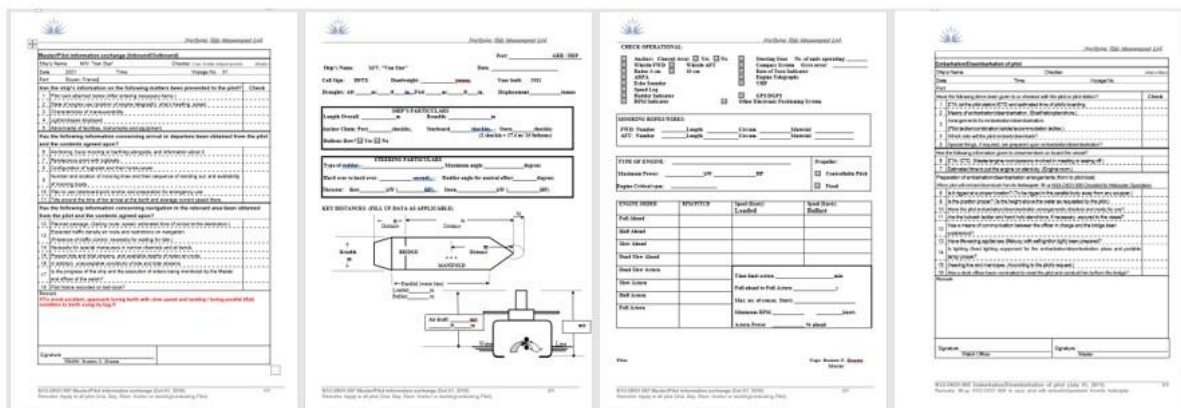
According to Sugiyono (2018: 127), in research testing the validity of the data, it certainly plays an important role in proving that the research under study contains facts, valid data, and no doubt about its truth and existence.

**FINDINGS AND DISCUSSION**

**Findings**

The master must complete the pilot card, which contains information the pilot will need while boarding the spacecraft. It is necessary to have blank cards available in order to use the optional class notation. The current state of the ship's loading, propulsion, and maneuvering equipment and other relevant equipment must be disclosed in the pilot card.

Pilot ladder arrangements are a highly specialized form of rope ladder, normally used on board cargo ships to raise and lower pilots. The design and construction of stairs are strictly defined by international regulations under SOLAS. Generally, it consists of a pilot ladder and, in the case of redundant freeboard (greater than 9 m), a combination ladder (a combination of pilot ladder and accommodation ladder).



**Figure 1. Pilot Card**

(Source : Personal Documentation)

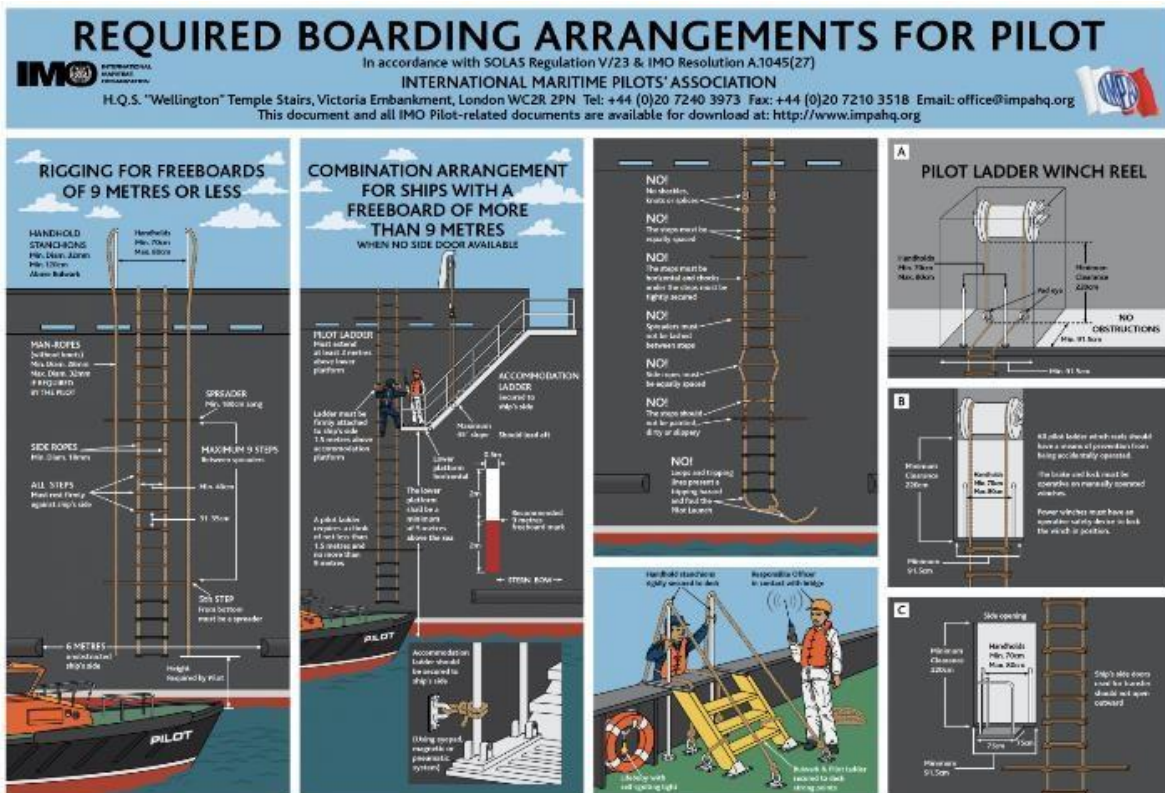


Figure 2. Pilot Ladder Arrangerments

(Source: Personal Documentation)

**Discussion**

Based on the results of observations made by researchers, the results of interviews were conducted with four informants, namely the master, chief officer, second officer, and boatswain, as well as the results of a documentation study. It was found that the man factor (human) got four votes, which was the highest factor in causing the pilot to fall from the pilot ladder while climbing to the board of the MV. Van Star in the Rouen River area.

Based on the data that the researcher has obtained from observations, interviews, and documentation, the researcher concludes that taking care of the pilot ladder if the ship's draft exceeds the specified limit in order to avoid the accident is to deepen the understanding of pilot ladder arrangements and carry out PMS (plan maintenance system), especially for pilots ladder. This aims to prevent the pilot fall accident from happening again and also to create strong evidence that if it does happen again the ship has already carried out activities to maintain the guide ladder if the authorities blame it.

**CONCLUSIONS**

**Conclusion**

In general, the factors causing the pilot to fall via the pilot ladder on the boat's deck side during the maneuvering of the MV pilot pick-up. Van Star in the Rouen River area is that the pilot did not use PPE (personal protective equipment) in accordance with standard procedures, and then there was a lack of supervision from the officer responsible for caring for the guide ladder, so the guide ladder used was unfit for use, as well as the condition of the ship that was being maneuvered which creates high waves when the pilot boat approaches the MV. Van Star.

How to care for and use the pilot ladder if the ship's draft exceeds the specified limit in order

to avoid an accident, namely by paying attention to the pilot ladder arrangements and carrying out a PMS (plan maintenance system), especially for the pilot ladder, in order to prevent the pilot accident from happening again, by means of such as inspections, routine maintenance, maintenance of pilot ladder shackles and carrying out checks before carrying out the pilot pick-up process.

The solution is so that the pilot can safely onboard and avoid the risk of a pilot falling via a pilot ladder on the deckside of the pilot boat when maneuvering. By paying attention to various physical and spiritual aspects, readiness to do a job, calculating all aspects of risk in each activity, starting from climbing the pilot ladder, being on the pilot ladder, and arriving at the bridge on the bridge, and vice versa during disembarkation.

### **Suggestion**

It would be better to pick up pilots with the ship's condition stable and not when the ship is maneuvering in a narrow shipping lane, which can cause a lack of maneuverability for the ship. It would be nice to avoid repeating the procedure error. It is expected to apply the appropriate procedure, especially for any job that can have a big risk. Implement PMS (plan maintenance system), especially on the pilot ladder, in order to minimize pilot accidents when climbing the pilot ladder.

### **LIMITATION & FURTHER RESEARCH**

The limitations of the study are those characteristics of design or methodology that impacted or influenced the interpretation of the findings from your research. Further research should suggest the number of gaps in our knowledge that follow from our findings or to extend and further test of the research.

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