

# Safety Alert

**Number: 24-04**

**Published: 15/05/2024**

**Subject: LTI – Compound Fracture of Right Foot**

## What Happened / Narrative

The incident occurred onboard a Service Operation Vessel (SOV), performing Walk-2-Work duties at an offshore windfarm. The vessel was positioned port side on to the Wind Turbine Generator (WTG) with the maximum wave height of 3m impacting the port quarter and swell of 2.8m impacting the starboard bow.

With the vessel in an optimal position relative to the connection point on the WTG and the prevailing weather, the gangway operator was given permission to make the connection. The gangway operator stood at the base of the telescoping access bridge and used the walk-around box (mobile remote control) to make the connection, which is customary. The gangway operator had difficulty in making the connection due to the vessel movement and retracted the gangway to re-assess the weather conditions. The weather conditions were determined to be within the capabilities of the gangway system and a second attempt was made to connect. The gangway operator again was unable to make the connection and retracted the gangway. It was during this retraction that the telescoping section of the gangway frame travelled over the gangway operators' right foot, entrapping it, and causing the compound fracture of the foot.

## Why Did it Happen / Cause

### Underlying Causes:

- A gap exists between the frame end and gangway floor grating. The IP was standing in the entrapment zone while making the connection and when the telescoping gangway section was retracted, in combination with the effect of the automatic motion compensation by the system, the gangway frame completed its maximum distance of travel over the IP's right foot.

### Root Causes:

- The ends of the telescoping gangway frame are engineered with a chamfer (approx. 45°) as part of the interrelated system design, where there is a gap between the gangway floor and the frame end.
- The final section of the travel path (soft stop) for the gangway frame was not guarded.
- The training delivered to the gangway operators included standing on the Telescope Access Bridge platform (TAB) or in the operator shelter (cabin) during gangway connection attempts, thus normalising the operators to this area.

### Contributory Factors:

- IP was focused on making the gangway connection under difficult vessel movements and had become situationally unaware of his position on the gangway.
- The vessel risk assessment for the operation did not specify the foot entrapment hazard or the control measures necessary to prevent the injury.

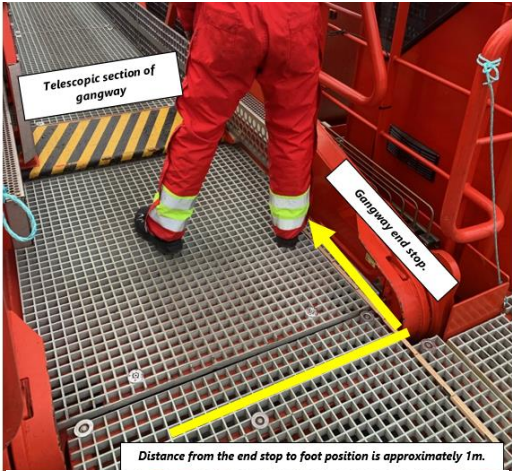
## Corrective Actions Taken / Recommendations

1. Install guarding along the exposed soft stop of the gangway to ensure a person cannot place their feet in the path of the retracting gangway frame and install a physical barrier at the base of the telescopic gangway section, and which will prevent the operator from encountering the gangway when it is fully retracted.
2. Update the gangway operator training program with specific focus on entrapment and shearing potential areas on the gangway. This should include no-go areas for operators and transferring technicians and form part of the gangway operator's assessment at the end of the course.
1. Develop a set of sea state / vessel movement limits for gangway connections that the gangway operators can use as a support to make an informed decision on when to stop the job. (this must be independent from the vessel station keeping abilities)
2. Assess the gangway operator shelter and determine what changes are required to make the cabin more user friendly for the operator.
3. All SOV in the fleet to conduct a targeted hazard identification activity of their respective gangway systems to determine if any shear or entrapment potentials exist (irrespective of likelihood of occurrence)
4. All SOV in the fleet to review their existing Walk-2-Walk risk assessments and ensure the shear and entrapment hazards are recorded with suitable control measures.
5. Develop an onsite competency assessment and re-fresher program for gangway operators to:
  - Ensure good practice is adopted.
  - Update knowledge.
  - Assess skill levels.
  - Transfer lessons learned.
  - Detect and correct unwanted operator habits.

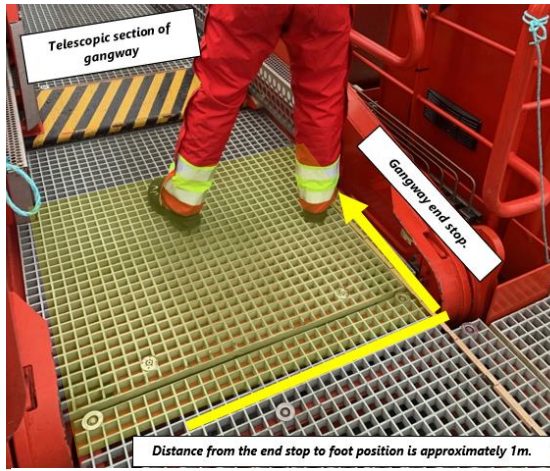
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## Photographs / Supporting Information



Estimated position of IP based on video footage and safety shoe debris on the gangway.



Right foot placement with a yellow marked Safety zone / No-Go area (reconstruction)



Gangway entrance, after installation of guard.

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## Foot Entrapment Potential (Equipment Design)



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