MODALINTA

new net system and deployment method for accommodation ladders that engineers out risk in both positioning and use

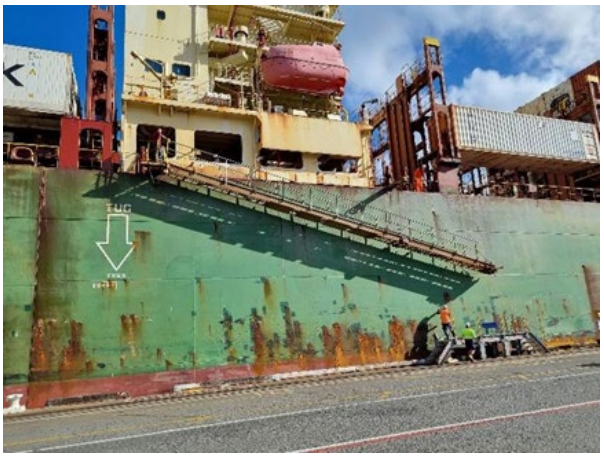
the challenge

Most of the world's cargo vessels have the familiar accommodation ladder and net for accessing the ship. These ubiquitous devices:

- expose workers to an unnetted ladder during deployment
- have dubious functionality as a safety device if incorrectly deployed and/or poorly maintained
- are limited in their ability to prevent a fall
- can take 3 to 6 people, between 20 and 60 minutes to deploy, prolonging the ship's visit with a slow and unpredictable process
- poor design leads to unsafe behaviours such as working outside the safety rails

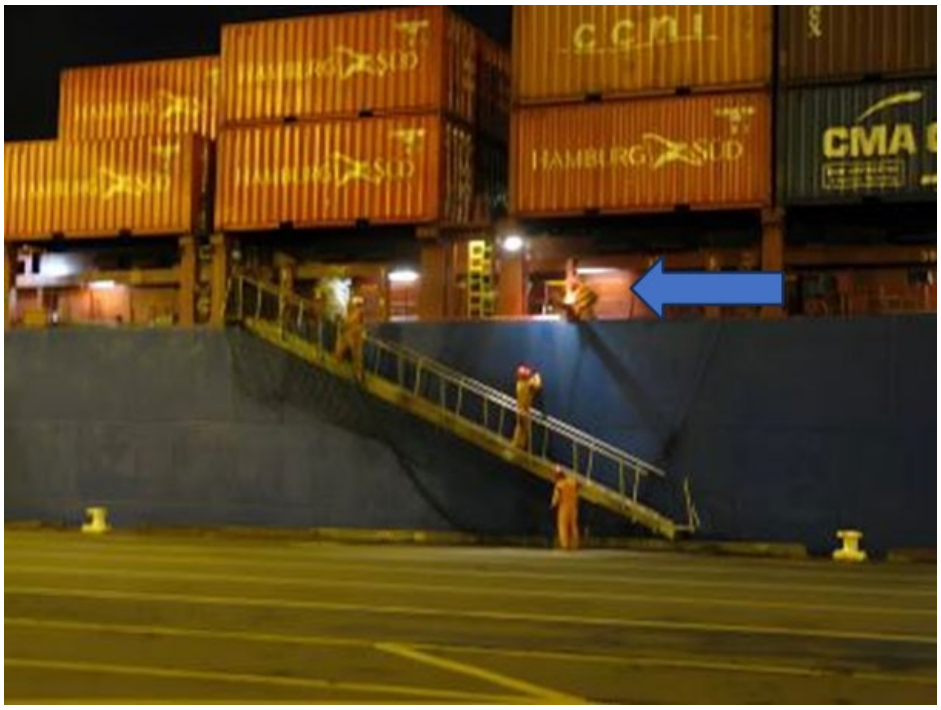
Worker exposed to an un-netted ladder during deployment

Working outside of the ship rail while deploying net



Standing under a suspended load

Net hanging from a bracket. Not tied off and potentially damages the net



Crew person hanging on the outside of the handrail to help guide the net. There were 6 people involved in this deployment. Only 5 are shown in this picture

Vessel crew are often under pressure to reduce the time from All fast to Labour aboard and from Labour ashore to last line. Rushing is often ineffectual and, more importantly, potentially dangerous. An engineered solution addresses the problems at the root.

the innovation

We have patented a new net system and deployment method that:

- properly prevents people from falling over the side even when carrying shoulder-mounted items, such as lashing poles
- never exposes the crew to an unnetted ladder, even during deployment
- reduces deployment to approx. 2-3 minutes
- is maintenance-free and can be safely and effectively repaired if damaged
- improves the presentation of the vessel, sending a strong safety message

The system is available for retrofit to most vessels and will be offered for newbuilds. Retrofitting can be done during a normal port stay.

how it was implemented

Basic creation of the Saf.AXS system was developed in our Sydney workshop, but Prof Mah and a cross-disciplinary team of bright engineering students from OPTIK at the University of Technology, Sydney greatly assisted its development.

Numerous mock-ups and test pieces were made during development. We were also helped with site visits by vessel operators and container terminals.

We rigorously checked published safety requirements and conferred with the regulators in multiple jurisdictions.

what was the result

The solution reduces the time required to deploy a net, making it fully operational in just 3 minutes after the ladder is deployed. The process eliminates most manual handling while deploying the net and does not depend on seafarers and port safety officers “working out" how to do it, as most functions are “preset”

The Auslegers (second rail) sit above the handrail, effectively preventing individuals from accidentally falling over the side.

Working with a partner shipping line, we have estimated that for a small (1700 TEU) vessel making 4 port calls/week, the savings are approximately. $US250K per annum based on fuel savings resulting from slow steaming.

Accounting for time-constrained ports, the extra benefit possible for the same vessel can double if it can load extra cargo in the same window. A 60 minutes saving with 3 cranes at 30 boxes per hour crane rate is 90 extra revenue boxes loaded in the same time.

We are about to conduct production sea trials in Australasia with a well-known vessel operator. We have conducted multiple feedback sessions with seafarers and expect to launch the system at TOC next year.

conclusion

The gangway net problem is so ubiquitous that people don’t see it. It is “just the way we do things”.

A major shipping line did try to fix this problem a few years ago, but the solution was prone to catching, damage, and sometimes was even slower and more difficult than the traditional method.

Saf.AXS has multiple patents and based on the trial estimates will repay itself in months.

Apart from the benefits in duration and safety, it relieves busy crews during a critical time, results in a neater and more professional appearance (housekeeping and safety messaging), and makes labour scheduling easier for the terminals (when to send the lashing gangs).

LINK: https://www.modalinta.com/

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