

Cargo Securing

...in need of shoring up?

Supported by the Dutch government, MARIN initiated the Lashing@Sea Joint Industry Project to obtain a snapshot of current cargo securing practices as a base for ongoing and future research and innovation.

Securing cargo has been a concern for as long as ships have sailed. And although technology has moved on, it is still a concern today. More and more cargo is being put on bigger and bigger ships and in turn, the time available to secure each unit is decreasing. The diversity of the issues surrounding lashing is illustrated by the fact that some shipping sectors are seeking reductions in lashing requirements, while other sectors are struggling to explain incidents with supposedly safe setups. Lashing@Sea therefore, focused on identifying reasons for unexplained cargo incidents involving multiple, collapsed container stacks and on the other hand, on reducing lashing in the RoRO and heavy lift transport sectors. As part of the project, interviews, crew questionnaires, incident reviews and measurement campaigns on five ships took place. In addition, model tests on a dynamic “shaker” test platform were carried out to investigate cargo-securing

dynamics under controlled circumstances. Operational feedback and a review of current practice showed that there are often mismatches between the “as designed” and “as loaded” cargo configuration. The reliability of cargo weights, cargo location, the operational stability of the vessel and additional accelerations because of hull flexibility, were particularly found to introduce uncertainties. Measurements and numerical analysis showed that none of these effects alone will exceed safety margins but unfortunate combinations may trigger dynamic interactions that can damage securing and even lead to the collapse of multiple container stacks.

RECOMMENDATIONS

The findings were forwarded to IACS and the IMO. A proposal for guidance on dealing with weather-dependent lashing was also put forward. Further recommendations included the need to increase the reliability of cargo stows by measuring and checking weights and to assist crews with handling extreme weather and nonlinear ship responses. Operator guidance to prevent hull deformation, fatigue and cargo damage, is addressed in the new TALL-



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SHIP JIP. Lashing@Sea comprises 23 participants including ship operators, class societies, flag states, lashing gear manufacturers, training organisations and onboard systems suppliers.

