



SUB-COMMITTEE ON STABILITY AND
LOAD LINES AND ON FISHING VESSELS
SAFETY
52nd session
Agenda item 9

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GUIDELINES FOR VERIFICATION OF DAMAGE STABILITY REQUIREMENTS FOR TANKERS AND BULK CARRIERS

Submitted by the Royal Institution of Naval Architects (RINA)

SUMMARY

<i>Executive summary:</i>	This document supports the need for instant access to suitable means of checking operational loading conditions for tankers
<i>Strategic direction:</i>	2
<i>High-level action:</i>	2.1.1
<i>Planned output:</i>	2.1.1.2
<i>Action to be taken:</i>	Paragraph 7
<i>Related documents:</i>	SLF 52/9; SLF 51/13/1, SLF 51/13/4 and SLF 51/17, section 13

Background

1 MARPOL regulations require tankers to verify that their distribution of cargo, fuel and ballast (if any) at any stage of the voyage is such that, if damaged to the extent defined, adequate buoyancy and stability would be maintained. Most approved loading instruments currently in use do not have the facility to make this verification as they are intended to check only draught, trim and stability in the intact condition.

2 Regardless of the degree of subdivision of cargo and ballast tanks, it is not possible at the design stage to satisfy these damaged stability requirements for every possible distribution of cargo, fuel and ballast. The large range of cargo specific gravities, fuel and ballast that might be carried and the infinite number of permutations arising from partial tank fillings make this impracticable.

3 The loading conditions on which the design of the vessel is based are defined by the loading conditions in the approved trim and stability book which have, as part of the approval process, been checked against the damage criteria and found to be acceptable. However, it is unlikely that any tanker will be loaded precisely in accordance with one of the approved loading conditions and the MARPOL Regulation does not presently allow for any deviation.

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Proposal

4 In order to comply with the MARPOL Regulations, every tanker should have instant access to some means to check its intended loading condition against the damaged stability requirements.

5 Alternatively, some tolerance in the weights and volumes in each tank could be permitted, so that the approved loading conditions would be accepted for a wider range of actual operational distributions. In this alternative there would still be a need for instant access to the means to check those conditions that are still outside the acceptable tolerance.

6 Various means exist, or could be developed, that would satisfy the requirement for a check on the loading condition for those tankers that do not already comply:

- .1 onboard loading instruments which include the damage criteria as part of the calculation;
- .2 a shore-based loading instrument which includes the damage criteria as part of the calculation, available 24 hours a day; or
- .3 pre-calculated curves of maximum allowable KG, for various tank weights and volumes and ship draughts, in either book form or software, available onboard.

Action requested of the Sub-Committee

7 The Sub-Committee is invited to consider the above information and take action as appropriate.
