INTERNATIONAL MARITIME ORGANIZATION

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SUB-COMMITTEE ON STABILITY AND LOAD LINES AND ON FISHING VESSELS SAFETY
51st session
Agenda item 4

SLF 51/INF.4
6 May 2008
ENGLISH ONLY

REVISION OF THE INTACT STABILITY CODE

Development of Performance-Based Intact Stability Criteria

Submitted by the United States

SUMMARY

Executive summary:	This document provides the abstract of a key document concerning the development of performance-based intact stability criteria for ships. The main focus of this document, which is titled "Toward Performance-Based Criteria for Intact Stability", is on the formulation of objectives and criteria development and addresses the principal issues related to development of performance-based criteria for intact stability of ships. Information is also provided by which the entire document may be obtained.
Strategic direction:	5.2
High-level action:	5.2.1
Planned output:	5.2.1.2
Action to be taken:	Paragraph 4
Related documents:	SLF 51/4, SLF 51/4/1 and SLF 50/4/4

1 This document contains the abstract of a key document concerning the development of performance-based intact stability criteria for ships and provides information by which the entire document may be obtained. The document, which is titled "Toward Performance-Based Criteria for Intact Stability," was authored by V.L. Belenky, J.O. de Kat, and N. Umeda and was published in the April 2008 issue of the professional journal ***Marine Technology***, Volume 45, Number 2, by The Society of Naval Architects and Marine Engineers (SNAME) (ISSN 0025-3316). The authors and discussers of this document are noted experts on the intact stability of ships.

2 Abstract: The document addresses the principal issues related to development of performance-based criteria for intact stability of ships. The motivation for the development is examined and terminology for stability failures and types of criteria is considered. The physics of three modes of stability failures (dead ship conditions; broaching; and variation of righting arm, including pure loss of stability and parametric roll) is reviewed with numerical examples. Special attention is paid to problems that need to be addressed during the development of

probabilistic performance-based criteria, including time dependence, the choice of time interval, and the problem of rarity. Different hypotheses of capsizing are examined. The document also contains a review of methods and techniques for simulating all three modes of stability failure.

3 A copy of the April 2008 issue of ***Marine Technology*** may be obtained from SNAME, 601 Pavonia Avenue, Jersey City NJ 07306 USA, telephone (800)798-2188. Also, the document may be obtained in electronic format through the SNAME website (http://www.sname.org/mtonline_order.htm free for SNAME members) or purchased through Ingenta Connect's website (http://www.ingentaconnect.com/content/sname/mt).

Action requested of the Sub-Committee

4 The Sub-Committee is invited to note the information provided.