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ONLINE ISSN : 1881-1760

PRINT ISSN : 1880-3717

Journal of the Japan Society of Naval Architects and Ocean Engineers

Vol. 1 (2005) pp.111-118

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Improvement of Water Entry Performance of a Free-fall Lifeboat

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(Accepted April 13, 2005)

Summary: Recently, free-fall lifeboats have been widely adopted as efficient and safety life saving apparatuses for large merchant ships such as bulk carriers and tankers. However, because the increase of the size of mother ships leads to increases in fall heights, dangerous behaviours such as the occurrence of boat motion towards the mother ship after water entry and/or intensive acceleration to the occupants in the boat when it enters the water surface must be anticipated.

In past studies, water entry performance has mainly been examined in terms of the launching conditions of free-fall lifeboats; the effect of hull shape has not generally been investigated. In this study, therefore, model experiments and numerical simulations were carried out, and a free-fall lifeboat system to be used for large merchant ships with 25 meter fall heights was examined. Improvement of the hull shape and optimization of the launching parameters were then conducted based on the issues found from the investigation.

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To cite this article:

Makoto Arai, Yohei Tsukioka, Shigeru Tozawa and Kazuyuki Yamane: Improvement of Water Entry Performance of a Free-fall Lifeboat , Journal of the Japan Society of Naval Architects and Ocean Engineers, (2005), Vol. 1, pp.111-118 .



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