

A Feasibility Study on a New Trimaran PCC in Medium Speed – Performance in Still Water and Strong Wind^(PDF)

《船舶与海洋工程学报》 [ISSN:1002-2848/CN:61-1400/f] 期数: 2010年02 页码: 137--141 栏目: 出版日期: 2010-06-25

Title: A Feasibility Study on a New Trimaran PCC in Medium Speed – Performance in Still Water and Strong Wind

作者: 大西 星輝; 桃木 勉; 池田 良穗

Author(s): Tatsuhiro Mizobe*; Yasunori Nihei and Yoshiho Ikeda
Department of Marine System Engineering, Osaka Prefecture University, Sakai, 599-8531, Japan

关键词: trimaran; Pure Car Carrier; EHP; drift angle; speed reduction

分类号: -

DOI: -

文献标识码: A

摘要: In the present paper, a new trimaran Pure Car Carrier (PCC) is proposed and a feasibility study on the ship is carried out. In this study, first, the effective horse power (EHP)/car of the PCC running in still water is predicted. By comparing the predicted EHP/car with that of a conventional mono-hull PCC, it is found that the trimaran PCC is superior to the conventional mono-hull PCC at rather higher speed. As ship speed increases, the reduction of the resistance of the trimaran is bigger. It is also found that at common service speed of PCCs, the EHP/car of a small PCC is lower than that of a conventional PCC. Secondly, the optimal L/B of a main-hull of the trimaran PCC in still water is determined. The optimal L/B of the main-hull varies with ship speed and size because the wave resistance decreases but the frictional resistance increases as L/B of the hull increases. As ship size increases, the optimal L/B of the main-hull of the trimaran PCC decreases. Finally, the increase of the resistance of PCCs running in strong wind is predicted. The results show that drift angle and speed reduction of the trimaran PCC are much smaller than the conventional mono-hull PCC because of large side force created by three demi-hulls.

导航/NAVIGATE

[本期目录/Table of Contents](#)

[下一篇/Next Article](#)

[上一篇/Previous Article](#)

工具/TOOLS

[引用本文的文章/References](#)

[下载 PDF/Download PDF\(450KB\)](#)

[立即打印本文/Print Now](#)

[推荐给朋友/Recommend](#)

统计/STATISTICS

[摘要浏览/Viewed](#) 554

[全文下载/Downloads](#) 461

[评论/Comments](#)



参考文献/REFERENCES

- Fujiwara T, Ueno M, Ikeda Y (2006a). Cruising performance of a large passenger ship in heavy sea. Proceedings of the Sixteenth International Offshore and Polar Engineering Conference. The International Society of Offshore and Polar Engineers, San Francisco, USA, 304-311.
- Fujiwara T, Ueno M, Ikeda Y (2006b). Cruising performance of ships with large superstructures in heavy sea -2nd report: Added resistance induced by wind and waves, and optimum ship routing-. Journal of the Japan Society of Naval Architects and Ocean Engineers, 3, 147-153.
- Ikeda Y, Sone T (2007). A concept design of a new trimaran PCC. Conference Proceedings of the Japan Society of Naval Architects and Ocean Engineers, 4, 1-4.
- Kijima K, Katsuno T, Nakiri Y (1990). On the manoeuvring performance of a ship with the parameter of loading condition. Journal of the Society of Naval Architects of Japan, 168, 141-148.
- Momoki T, Onishi S, Katayama T (2009). A study on wind pressure characteristics of ships with large superstructures. Proceedings of the Nineteenth International Offshore and Polar Engineering Conference. The International Society of Offshore and Polar Engineers, Osaka, Japan, 563-569.

备注/Memo: -

