

RESISTANCE PREDICTION OF TRIMARAN SHIP IN
CALM WATER

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RESISTANCE PREDICTION OF TRIMARAN SHIP IN CALM WATER

By

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**A thesis submitted in partial fulfilment of
the requirement for the award of degree of
Bachelor of Applied Science (Maritime Technology)**

**DEPARTMENT OF MARITIME TECHNOLOGY
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DEPARTMENT OF MARITIME TECHNOLOGY
FACULTY OF MARITIME STUDIES AND MARINE SCIENCE
UNIVERSITI MALAYSIA TERENGGANU

DECLARATION AND VERIFICATION REPORT
FINAL YEAR RESEARCH PROJECT

It is hereby declared and verified that this research report entitled:

RESISTANCE PREDICTION OF TRIMARAN SHIP IN CALM WATER by
KHAIRUN NAIM BIN TAHIR, Matric No. **UK 20569** have been examined and all errors identified have been corrected. This report is submitted to the Department of Maritime Technology as partial fulfillment towards obtaining the **BACHELOR DEGREE OF APPLIED SCIENCE (MARITIME TECHNOLOGY)**, Faculty of Maritime Studies and Marine Science, Universiti Malaysia Terengganu.

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DECLARATION

I hereby declare that this thesis entitled “Resistance Prediction of Trimaran Ship in Calm Water” is my own researched except as cited in the bibliography.

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ABSTRACT

This thesis describes a study about the trimaran ship and the frictional resistance analysis with different side hull ratio and position. A trimaran hull form consists of long slender main hull and two relatively small side hulls. There are a lot of research papers available that investigated the advantages of large trimaran configurations for future cargo ships and alternative frigate/destroyer size warships. There are also several trimaran designs being investigated, which claim both high speed and high hull efficiency. In this study, the author focus on how to reduce the trimaran ship resistance in calm water. In order to achieve that goal, the suitable layout for trimaran ship will be investigate. The layout for trimaran ship are the length of side hulls to the center hull for trimaran ship, the longitudinal position of the side hulls and the distance between the side hulls with the center hull.

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ABSTRAK

Kertas kerja ini membicarakan tentang penyelidikan terhadap kapal trimaran dan rintangan air kapal tersebut dengan nisbah badan kapal sisi yang berbeza dengan kedudukannya. Kapal trimaran terdiri daripada satu badan kapal utama yang langsing bentuknya dan dua badan kapal sisi yang lebih kecil. Terdapat banyak penyelidikan yang telah dilakukan dan kebanyakannya lebih tertumpu kepada kelebihan konfigurasi kapal trimaran yang besar bagi kapal-kapal kargo untuk masa hadapan dan juga alternatif bagi kapal perang. Terdapat juga beberapa reka bentuk kapal trimaran yang sedang dikaji oleh penyelidik dan mereka mendakwa kapal trimaran boleh mencapai kelajuan yang tinggi serta mempunyai kecekapan yang lebih efisien. Dalam kajian ini, penulis memberi tumpuan kepada bagaimana caranya untuk mengurangkan rintangan kapal trimaran di dalam situasi air yang tenang. Dalam usaha untuk mencapai matlamat tersebut, konfigurasi yang sesuai bagi kapal trimaran akan dikaji. Konfigurasi bagi kapal trimaran adalah panjang badan kapal sisi kepada badan kapal utama, kedudukan memanjang bagi badan kapal sisi dan juga jarak di antara badan kapal sisi dengan badan kapal utama.