

A PRELIMINARY DESIGN OF CATAMARAN FOR FISHING
VESSEL OF 100 GT

HAMDAM MOHD KASA

FACULTY OF MARITIME STUDIES AND MARINE SCIENCE
UNIVERSITI MALAYSIA TERENGGANU

2012

**A PRELIMINARY DESIGN OF CATAMARAN FOR FISHING VESSEL OF
100 GT**

By

HAMDAM BIN MOHD KASA

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

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

2012



DECLARATION AND VERIFICATION REPORT
 FINAL YEAR RESEARCH PROJECT

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

A PRELIMINARY DESIGN OF CATAMARAN FOR FISHING VESSEL OF 100 GT

By **HAMDAM BIN MOHD KASA**, Matric No. **UK 18144** have been examined and all errors identified have been corrected. This report is submitted to the Department of Maritime Techonlogy as partial fulfillment towards obtaining the Degree of Applied Science (Maritime Technology), Faculty of Maritime Studies and Marine Science, Universiti Malaysia Terengganu.

Verified by:

Principal Supervisor
 Name: Ir. Ferry Manuhutu
 Official stamp:

FERRY MANUHUTU
 JABATAN TEKNOLOGI MARITIM
 FAKULTI PENGAJIAN MARITIM DAN SAINS MARIN
 UNIVERSITI MALAYSIA TERENGGANU (UMT)
 21030 KUALA TERENGGANU

Date: 20/6/2012

Second Supervisor
 Name: Prof Madya Dr Khalid B. Samo
 Official stamp:

ASSOC. PROF. DR. KHALID SAMO PhD MIMarEST
 LECTURER & CO-ORDINATOR B.App.Sci (Maritime Technology)
 DEPARTMENT OF MARITIME TECHNOLOGY
 FACULTY OF MARITIME STUDIES AND MARINE SCIENCE
 UNIVERSITI MALAYSIA TERENGGANU (UMT)
 21030 KUALA TERENGGANU

Date:

Head of Department of Maritime Technology
 Name: Dr. Mohamad Fadhli B. Ahmad
 Official stamp:

ASSOC. PROF. DR. MOHAMMAD FADHLI AHMAD
 ASSOC. PROF. DR. MOHAMMAD FADHLI AHMAD
 DEPARTMENT OF MARITIME TECHNOLOGY
 FACULTY OF MARITIME STUDIES AND MARINE SCIENCE
 UNIVERSITI MALAYSIA TERENGGANU (UMT)
 21030 KUALA TERENGGANU

Date: 20/6/12

DECLARATION

I hereby declare that this thesis entitled “A Preliminary Design of Catamaran for Fishing Vessel of 100 GT” is my own research except as cited in the references.

Signature : 

Name : Hamdam Bin Mohd Kasa

Matrix No. : UK 18144

Date : 31th May 2012

ACKNOWLEDGEMENT

All praise to Allah SWT, the Most Gracious and Most Merciful, Who created the mankind with knowledge, wisdom and power. Being the best creation of Allah, one still has to depend on other for many aspects, directly and indirectly. Praised again to Allah SWT blessing me and give me a capability to complete this Final Year Project.

The person I most wish to express my deep appreciation and extend gratitude to my main supervisor, Mr. Ir. Ferry Manuhutu for his encourage and guidance given during this thesis be done. Also appreciation goes to my co-supervisor, Assoc. Prof. Dr. Khalid Bin Samo, to my Final Year Project Coordinator, Dr Ahmad Faisal Bin Mohammad Ayob and to my lecturer, Dr. Fitryadi for the guide during this project.

My thanks are also extended to all my classmates, Shahrul Munir, Ariffudin, Mohd Faiz, Ahmad Najmi, Aizat, Khairul Da'i, Farmie, Khairul Azhar, Mohd Sufian, Mohd Asyraf, Nor Suzela and Nurul Asmarehan for their undoubted kindness in assisting me to complete this drawing design and thesis. Thanks to all my friends who assisted me in different ways during this drawing process.

Finally, my special thanks to my family, Mohd Kasa Bin Sabu and Naimah Binti Nusu and my best friend, Nurul Ain Binti Hassan who helped me directly or indirectly and give me continuous support and courage to finishing of this thesis.

A PRELIMINARY DESIGN OF CATAMARAN FOR FISHING VESSEL OF 100 GT

ABSTRACT

This study is aim to establish a preliminary stage design of a catamaran for fishing vessel of 100 gross tonnage in technically. The fishing vessel design has to be suitable with the environment of Malaysian fishery and feasible to operate in Malaysia waters. Three desired ship's length are fixed as the primary independent variable in the design project and the others correlation parameters are thus contribute to achieve the gross tonnage as required. Evaluate the performance for three difference catamaran of fishing vessel design in the influence of resistance, powering requirement and stability condition. The evaluations of the performance for three new designs of fishing vessels use the Maxsurf Pro, Hullspeed and Hydromax software. The lines plan and general arrangement plan will be generated from the Maxsurf and AutoCAD. The preliminary stage of fishing vessel design methods and process will be discussed detailed in this project study. Finally in this paper, be found the most suitable dimension of the selected catamaran which are more stable, less power requirement due to less hull resistance were determined by comparing the results obtained.

REKABENTUK AWAL UNTUK KATAMARAN SEBAGAI KAPAL IKAN LAUT 100 GT

ABSTRAK

Kajian ini adalah bertujuan untuk mewujudkan rekabentuk awal sebuah katamaran untuk kapal nelayan yang mempunyai 100 tanan kasar dari segi teknikal. Rekabentuk kapal nelayan ini perlu sesuai dengan persekitaran perikanan Malaysia dan beroperasi di perairan Malaysia. Panjang tiga buah kapal yang diinginkan telah ditetapkan sebagai pembolehubah bebas dan parameter lain berkorelasi untuk mencapai tanan kasar seperti yang telah ditetapkan. Menilai prestasi untuk tiga rekabentuk katamaran yang berbeza dalam aspek rintangan, kuasa yang diperlukan dan kestabilan. Penilaian prestasi bagi tiga rekabentuk baharu kapal nelayan ini menggunakan perisian Maxsurf, Hullspeed dan Hydromax. Pelan garis dan pelan susun atur am akan dihasilkan menggunakan perisian Maxsurf dan AutoCAD masing-masing. Kaedah dan proses rekabentuk peringkat awal kapal nelayan ini akan dibincangkan secara terperinci dalam projek kajian ini. Di akhir kajian, akan diketahui dimension kapal nelayan bagi katamaran yang paling sesuai akan dipilih dengan mempunyai lebih kestabilan, kuasa yang diperlukan kurang disebabkan oleh rintangan kapal yang kurang yang mana ditentukan melalui perbandingan analisis keputusan yang diperolehi.