PAINT ESTIMATION FOR A 45METERS UTILITY PERSONAL CARRIER (UPC) VESSEL

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2012

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LP 44 FMSM 2 2012

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Lihat sebelah

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By

Z. Irma binti Z. Ismail

Research Report submitted in partial fulfilment of
the requirement for the degree of
Bachelor of Applied Science (Maritime Technology)

Department of Maritime Technology
Faculty of Maritime Studies and Marine Science
UNIVERSITI MALAYSIA TERENGGANU
2012

DEPARTMENT OF MARITIME TECHNOLOGY
FACULTY OF MARITIME STUDIES AND MARINE SCIENCE

DECLARATION AND VERIFICATION REPORT

FINAL YEAR RESEARCH PROJECT

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

PAINT ESTIMATION FOR A 45M UTILITY PERSONAL CARRIER (UPC) VESSEL

by **Z. IRMA BINTI Z. ISMAIL**, Matric No. **UK 18363** have been examined and all errors identified have been corrected. This report is submitted to the Department of Maritime Techonolgy as partial fulfillment towards obtaining the 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 Paint Estimation for a 45m UPC Vessel is the result of my own research except as cited in the references.

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ACKNOWLEDGEMENT

My greatest gratitude and thanks goes to my supervisor, Assoc Prof Dr Khalid bin Samo and my co-supervisor, Mr Mohd Azlan bin Musa for all the supervision, ideas improvement and the encouragement. Constructive and positive comments and ideas from both of them had brought this research to the higher level than I ever expected it to be.

Thanks are also due to all my supervisors at MSET Shipbuilding Corporation Sdn Bhd, Mr Ariffin bin Yusof, Mr Mazlan bin Musa, Mr Mohd Adib bin Mohd and all Project Management Team's staff for providing such a great help and environment during my data collecting process and also for giving bombastic, great ideas to help improve the project.

A special thanks also goes to family members and friends for being so supportive and helpful that it eased me to complete this research.

PAINT ESTIMATION FOR A 45M UTILITY PERSONAL CARRIER (UPC) VESSEL

ABSTRACT

Paint is almost a crucial matter when it comes to shipping industry. Painting is necessary to reduce percentage of corrosion that may occur in surface of a vessel. However, when it comes to paint estimation, it has always become a problem. To assist in this problem, this research was conducted. As for this research, it has been specifically on the Paint Estimation for a 45m UPC Vessel. The research was conducted at the MSET Shipbuilding Corporation Sdn Bhd's yard at Pulau Duyung. This study was conducted in order to provide a better and more accurate estimation of painting amount and cost for the 45 meter Utility Personal Carrier (UPC) vessel. The estimation included the detailed amount of paint for every compartments that required painting, the total amount of paint (in litre), the detailed cost for each compartments painted, the total cost for painting process (paint product only) for the 45m UPC vessel and also have predicted the paint amount and cost for different sizes of ships. From that, the value can later be used on any other sizes of vessels, including this 45m UPC vessel. However, the method involved in this research would be slightly different, where the Simpson Rule was used to calculate the total area of hull for both port and starboard side. As for the industry, the usual method used to estimate the surface area of hull to be painted was based on Rectangular Box Theory. At the end of this experiment, it has been shown that by applying Simpsons Rule as one of the techniques in finding the area of hull gave smaller value on the quantity of paint needed than the industrial method and hence lead to a saving in cost for the 45m UPC Vessel.

ANGGARAN CAT UNTUK KAPAL UPC 45 METER

ABSTRAK

Cat merupakan perkara yang dikategorikan sebagai perkara yang sangat penting apabila berkait dengan industri perkapalan. Cat diperlukan bagi mengrangkan peratusan kakisan yang mungkin terjadi di mana mana permukaan kapal. Namun begitu, apabila ia melibatkan anggaran cat, ia sentiasa menjadi satu masalah. Untuk membantu mengatasi masalah ini, kajian ini telah dijalankan. Untuk kajian ini, ia telah dijalankan di MSET Shipbuilding Corporation Sdn Bhd, yang bertempat di Pulau Duyung. Secara rasionalnya, kajian ini dijalankan bagi memberikan anggaran jumlah cat dan kos bagi kapal 45m UPC yang lebih baik dan tepat. Anggaran tersebut melibatkan anggaran cat yg diperlukan secara terperinci bagi setiap bahagian kapal yang perlu dicat, jumlah keseluruhan cat (dalam liter), kos terperinci bagi setiap bahagian kapal yang dicat, jumlah kos yang diperlukan untuk proses mengecat bagi kapal 45 meter tersebut (hanya melibatkan produk cat tersebut sahaja) dan turut melibatkan ramalan untuk kapal dengan saiz yang berbeza. Daripada ramalan tersebut, nilai yang diperolehi akan boleh digunakan untuk mana-mana saiz kapal yang lain, termasuklah kapal sepanjang 45 meter ini. Walau bagaimanapun, kaedah yang digunakan dalam kajian ini adalah sedikit berbeza, iaitu penggunaan Simpsons Rule. Simpsons Rule telah digunakan untuk mengira jumlah keseluruhan badan luar kapal bagi kedua belah, kiri dan kanan. Bagi industri pula, kaedah yang digunakan untuk menganggarkan jumlah kawasan yang perlu dicat adalah Rectangular Box Theory (teori kotak segiempat). Di akhir kajian ini, ia membuktikan bahawa penggunaan Simpsons Rule untuk mendapatkan nilai dan jumlah kawasan badan kapal yang perlu dicat adalah lebih sedikit berbandimg penggunaan Rectangular Box Theory dan seterusnya mempengaruhi jumlah cat dan kos yang diperlukan untuk keseluruhan kapal sepanjang 45 meter ini.