

**THE STUDY TO REVIEW CATEGORY OF AIDS TO  
NAVIGATION IN ACCORDANCE WITH IALA  
RECOMMENDATION**

**MUHAMMAD KHAIRUL AZHAR BIN AHMAD**

**FACULTY OF MARITIME STUDIES AND MARINE SCIENCE  
UNIVERSITI OF MALAYSIA, TERENGGANU**

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**THE STUDY TO REVIEW CATEGORY OF AIDS TO NAVIGATION IN  
ACCORDANCE WITH IALA RECOMMENDATION**

**By**

**Muhammad Khairul Azhar Bin Ahmad**

**Research Report submitted in partial fulfilment of the  
requirement for the degree of  
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**Department of Nautical Science and Maritime Transportation  
Faculty of Maritime Studies and Marine Science  
University of Malaysia, Terengganu**

**2012**



DEPARTMENT OF NAUTICAL SCIENCE AND MARITIME TRANSPORTATION  
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:

*The Study to Review Category of Aids to  
Navigation in Accordance with IALA Recommendation*

by *Khairul Azhar b. Ahmad*, Matric No. *16967* have been examined

and all errors identified have been corrected. This report is submitted to the

Department of Nautical Science and Maritime Transportation as partial fulfillment

towards obtaining the Degree *of Science Nautical Science*,

Faculty of Maritime Studies and Marine Science, Universiti Malaysia Terengganu.

Verified by:

Principal Supervisor

Name:

Official stamp:

Date: *18/06/2012*

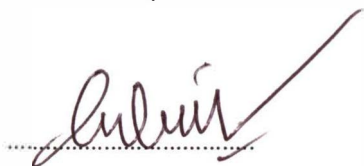
AHMAD FAIZAL BIN AHMAD FUAD  
Lecturer  
Department of Nautical Science and Maritime Transportation  
FACULTY OF MARITIME STUDIES AND MARINE SCIENCE  
UNIVERSITI MALAYSIA TERENGGANU (UMT)  
21030 KUALA TERENGGANU

Second Supervisor (where applicable)

Name:

Official stamp:

Date: .....



Head of Department of Nautical Science and Maritime Transportation

Name:

**CAPT. MOHD NAIM BIN FADZIL, CMILT**  
**Ketua**

Official stamp:

Jabatan Sains Nautika dan Pengangkutan Maritim  
FAKULTI PENGAJIAN MARITIM DAN SAINS MARIN  
UNIVERSITI MALAYSIA TERENGGANU (UMT)  
21030 KUALA TERENGGANU

Date: 18/06/2012

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## **ABBREVIATION**

%	Percentage
IALA	International Association of Marine Aids to Navigation and Lighthouse Authorities
MARDEPT	Marine Department Malaysia
GPS	Global Positioning System
AIS	Automatic Identification System
AtoN	Aids to Navigation
Nm	Nautical mile

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## **ABSTRACT**

Northern region peninsular Malaysia is divided into 4 states which is Kedah, Perak, Perlis and Pulau Pinang whereby each state has their own coastal area for maritime activity. In this area, there are marine Aids to Navigation such as Buoy, beacon and lighthouse. This aids to navigation which is very important to guide maritime activities in their operation in sailing. By these marine aids to navigation, navigator can avoid unwanted incidents and ensure their safe navigation. However IMO implemented that each vessel which have their voyage over 25 nautical miles must be equipped with electrical navigational equipments such as Radar, GPS, AIS etc to avoid any accidents for safe voyage and to determine their position. The vessel which equipped with electrical navigational equipment do not rely on marine aids to navigation while in open sea because AtoN can't be recognize exactly when the vessel position exceeds than 25 miles from the AtoN where the visibility range is reduced. However AtoN is very important to fishermen who has operate in Zone B and above where they have no full navigational equipment and AtoN which is also very important to vessels which experiences system breakdowns. All merchants ship which enters into the port area relies on AtoN especially buoy and beacon light to ensure their safety and their position in the right way. Therefore MARDEPT plays an important role to maintain availability functioning of the AtoN according to IALA recommendation to ensure the safe operation for merchant ships and fishermen.

## **ABSTRACT**

Zon utara semenanjung Malaysia terbahagi kepada empat buah negeri iaitu Kedah, Perak, Perlis dan Pulau Pinang dimana setiap negeri mempunyai kawasan perairan untuk aktiviti maritim. Di setiap kawasan perairan ini terdapatnya alat bantu pelayaran seperti rumah api, tanda suar dan boya. Peralatan ini sangat penting bagi membantu aktiviti maritim dalam operasi mereka terutama didalam pelayaran. Dengan adanya alat bantu pelayaran para pelayar sama ada nelayan mahupun kapal dagang dapat menjamin keselamatan pelayaran mereka daripada terlibat dengan kemalangan. Walaubagaimanapun international maritime organization (IMO) telah menetapkan bagi setiap kapal yang belayar di kawasan lebih dari 25 batu nautika dari persisiran pantai mesti mempunyai kelengkapan navigasi elektrik seperti radar, GPS, AIS, echosounder, dan sebagainya. Ini penting bagi sesebuah kapal untuk mengelak dari sebarang kemalangan serta menentukan arah dan kedudukan mereka. Oleh hal yang sedemikian bagi kapal yang memiliki kelengkapan navigasi elektrik yang lengkap tidak terlalu bergantung kepada alat bantu pelayaran apabila berada dikawasan laut lepas kerana alat bantu pelayaran tidak mampu dikenal pasti sekiranya kedudukan terlalu jauh iaitu melebihi 25 batu nautika. Walaubagaimanapun alat bantu pelayaran sangat penting kepada nelayan kelas B dan keatas yang tidak memiliki alatan navigasi elektrik yang lengkap serta kapal yang mengalami masalah teknikal terhadap peralatan navigasi elektrik. Sekiranya kapal dagang memasuki kawasan pelabuhan kebanyakannya mereka sangat bergantung kepada boya dan tanda suar untuk memastikan berada dilaluan yang betul serta selamat. Maka, Jabatan Laut Malaysia berperanan untuk memastikan alat bantu pelayaran ini sentiasa berfungsi bagi menjamin keselamatan kapal dagang serta bot nelayan di perairan mereka dengan mematuhi garis panduan yang telah ditetapkan oleh IALA.