

**CHEMICAL SHIPMENTS THROUGH THE STRAITS OF MALACCA:  
AN ANALYSIS FROM A MALAYSIAN LEGAL PERSPECTIVE**

**WAN SITI ADIBAH BINTI WAN DAHALAN**

**THESIS SUBMITTED IN FULFILLMENT OF THE REQUIREMENTS  
FOR THE DEGREE OF DOCTOR OF PHILOSOPHY**

**FACULTY OF LAW  
UNIVERSITY OF MALAYA**

**2011**

## **ABSTRACT**

This thesis seeks to examine the shipment of chemical substances otherwise known as hazardous and noxious substances (HNS) through the Straits of Malacca (SOM). The SOM is important to Malaysia from navigational, economic, environmental and strategic considerations. In this thesis, the term “chemical shipments” are also referred to as Hazardous and Noxious Substances (HNS) shipments and both terms are used with the same meaning.

The legal framework of the study comprises international laws and international environmental law principles, regional laws such as the Asia-Pacific MOU on Port State Control of 1993 and 2009, and domestic laws of Malaysia, Indonesia and Singapore. Collectively, Malaysia, Indonesia and Singapore are referred to as the straits States.

With the ratification of the 1982 LOSC by the strait States, the Straits of Malacca and Singapore fall within the legal definition of “a strait used for international navigation” and are governed by the transit passage regime encapsulated in Part III of the 1982 LOSC. This thesis examines HNS shipments through the SOM as follows:

The thesis has six chapters.

Chapter One deals with the Overview.

Chapters Two analyses the current regime of navigation and shipping statistics as recorded at vessel traffic systems at several ports in Peninsular Malaysia bordering the SOM namely Klang, Penang and Johore, shipping incidents in the designated sea lanes of the SOM with a special focus on the increasing number of ships reporting and types of ships carrying HNS at the Klang Vessel Traffic System and chemical pollution and marine scientific research on chemical pollution control. It argues in conclusion that the status quo on legal aspects in the SOM must change.

Chapter Three analyses international environmental law principles, HNS shipments on safety and security of navigation, marine pollution control, liability and compensation framework and waste control regulations for HNS pollution. The 1996 HNS Convention and the 2010

Protocol HNS Convention are not enforced yet and have not been ratified by the strait States. It concludes by stressing the importance of ratification of the HNS Conventions.

Chapter Four analyses the sub-regional response action plans for chemical spill containment or HNS substances with a focus on comparative analysis with the oil spill response action plans. It stresses the need to adopt a sub-regional approach to chemical or HNS pollution as there is none available at present.

Chapter Five assesses the adequacy of Malaysian, Indonesian and Singaporean laws for chemical or HNS shipments and in particular on liability and compensation. It underscores the importance of adopting the chemical or HNS liability and compensation provisions of chemical or HNS Conventions as the claimant of chemical or HNS incident will face problems in the absence of the element of strict liability and ship and cargo owners will face problems in the absence of compulsory insurance against liabilities arising from chemical or HNS incidents.

Chapter Six contains several Recommendations and stresses to develop a SOM sub-regional model on chemical or HNS pollution response and a national Malaysian approach to the regulation of chemical or HNS shipments through the SOM and presents the Conclusion to the thesis.

**The law is stated as at January 2010 and includes updates as recent as September 2010.**

## ABSTRAK

Tesis ini mengkaji pelayaran kapal-kapal yang membawa muatan bahan-bahan kimia atau bahan-bahan toksik dan berbahaya melalui Selat Melaka.

Selat Melaka penting kepada Malaysia dari aspek pelayaran, ekonomi, persekitaran dan kedudukannya yang strategik. Tesis ini mengguna pakai terma “pelayaran kapal-kapal yang membawa bahan-bahan kimia” dan juga mengguna pakai terma “pelayaran kapal-kapal yang membawa bahan-bahan toksik dan berbahaya” kerana kedua-dua terma ini membawa maksud yang sama.

Rangka kerja perundangan bagi kajian ini mengandungi konvensyen undang-undang antarabangsa, prinsip-prinsip undang-undang alam sekitar antarabangsa, undang-undang serantau seperti Memorandum Persefahaman Asia Pasifik mengenai *Port State Control* tahun 1993 dan 2009 serta undang-undang domestik bagi Malaysia, Indonesia dan Singapura. Malaysia, Indonesia dan Singapura adalah dirujuk sebagai negara-negara Selat.

Negara-negara Selat telah meratifikasi Konvensyen Undang-Undang Laut Antarabangsa 1982 dan sehubungan itu perairan Selat Melaka dan Selat Singapura termasuk dalam definisi “Selat Yang Digunakan Bagi Pelayaran Antarabangsa” seperti termaktub dalam Bahagian III, Konvensyen Undang-Undang Laut Antarabangsa 1982. Tesis ini mengkaji pelayaran kapal-kapal yang membawa muatan bahan-bahan kimia atau bahan-bahan toksik dan berbahaya melalui Selat Melaka seperti berikut:

Tesis ini mengandungi enam bab.

Bab Satu mengenai keseluruhan tesis.

Bab Dua menganalisis rejim pelayaran dan statistik laluan kapal-kapal yang melapur di Sistem Trafik Perkapalan di beberapa pelabuhan di Malaysia Barat yang mendampingi Selat Melaka seperti di Klang, Pulau Pinang dan Johor, kemalangan kapal dalam Laluan Laut Yang Telah Dipersetujui di Selat Melaka dengan memberi fokus kepada pertambahan bilangan kapal-kapal yang telah melapur dan jenis-jenis kapal yang membawa muatan bahan-bahan toksik dan berbahaya di Sistem Trafik Perkapalan Pelabuhan Klang di samping mengkaji pencemaran bahan-bahan kimia dan penyelidikan saintifik marin dalam pengawalan pencemaran bahan-bahan kimia. Bab ini membuat kesimpulan *status quo* dari aspek perundangan di perairan Selat Melaka perlu dipinda.

Bab Tiga menganalisis prinsip-prinsip alam sekitar antarabangsa, pelayaran kapal-kapal yang membawa muatan bahan-bahan kimia dan bahan-bahan toksik dan berbahaya yang melibatkan keselamatan dan pertahanan, pengawalan pencemaran marin, rangka kerja ganti rugi dan tanggungan bagi pencemaran pelayaran kapal-kapal yang membawa muatan bahan-bahan kimia dan bahan-bahan toksik dan berbahaya di bawah Konvensyen-konvensyen mengenai bahan-bahan kimia dan toksik dan peraturan pengawalan bahan buangan. Konvensyen paling penting mengenai pelayaran kapal yang membawa bahan-bahan toksik dan berbahaya ialah Konvensyen Mengenai Tanggungan Dan Ganti Rugi Bagi Kerosakan Yang Melibatkan Muatan Kapal Yang Membawa Bahan-bahan Toksik dan Berbahaya 1996 dan Protokol Konvensyen Bahan-bahan Toksik dan Berbahaya 2010 yang belum dikuatkuasakan dan belum diratifikasi oleh negara-negara Selat. Bab ini menyimpulkan penekanan mengenai pentingnya meratifikasi Konvensyen mengenai bahan-bahan toksik dan berbahaya dan protokol tersebut.

Bab Empat mengkaji mengenai keperluan perancangan tindakan separa serantau dalam menghadapi masalah mengawal tumpahan bahan-bahan kimia atau bahan-bahan toksik dan berbahaya dengan membuat fokus perbandingan menganalisis perancangan tindakan tumpahan minyak. Bab ini menekankan keperluan melaksanakan tindakan terhadap pengawalan pencemaran bahan-bahan toksik dan berbahaya kerana tidak terdapat kemudahan tersebut buat masa ini.

Bab Lima menilai sama ada kecukupan undang-undang Malaysia, Indonesia dan Singapura bagi tanggungan dan ganti rugi bahan-bahan kimia atau bahan-bahan toksik dan berbahaya. Kajian ini mendapati kepentingan dalam menerima pakai konvensyen mengenai tanggungan dan ganti rugi bahan-bahan toksik dan berbahaya kerana mangsa yang menuntut kemalangan bahan-bahan toksik dan berbahaya akan mengalami masalah menuntut kerana tiada elemen tanggungan keras manakala tuan punya kapal dan tuan punya kargo mengalami masalah tiada tanggungan bagi pembayaran insurans yang wajib dibayar oleh tuan punya kapal dan tuan punya kargo jika berlaku kemalangan yang melibatkan bahan-bahan toksik dan berbahaya.

Bab Enam memberikan beberapa cadangan dan menekankan untuk membangunkan model bagi separa serantau menghadapi pengawalan pencemaran bahan-bahan kimia atau bahan-bahan toksik dan berbahaya di Selat Melaka dan keduanya membentuk undang-undang

Malaysia bagi pelayaran yang membawa bahan-bahan kimia atau bahan-bahan toksik dan berbahaya dan seterusnya memberikan kesimpulan terhadap tesis ini.

**Undang-Undang yang diguna pakai adalah pada Januari 2010 dan termasuk perkembangan terkini pada September 2010.**

## **DECLARATION**

I hereby declare that this dissertation is the result of my own investigations, except where otherwise stated. I also declare that it has not been previously or currently submitted as a whole for any other degrees at UM or other institutions.

**Wan Siti Adibah Binti Wan Dahalan**

**Signature .....**

**Date .....**

## ACKNOWLEDGEMENTS

I wish to express my deepest gratitude, first and foremost to Allah Subhanallah Taala for has blessed me with patience, strength, knowledge and guide me to the completion of this thesis.

This thesis would not have been possible unless with the support, advice, constructive and valuable comments of my supervisor, Associate Professor Datin Dr Mary George.

It is an honor for me to thank the Deans and the Deputy Deans (throughout my research) of the Law Faculty of the University of Malaya and from the Law Faculty of the Universiti Kebangsaan Malaysia, in particular Professor Datuk Dr Khaw Lake Tee, Associate Professor Dr Yong Chiu Mei and Professor Datin Dr Norhanom Abd Wahab from the University of Malaya, Professor Dr Kamal Halili Hassan and Professor Dr Aishah Bidin from the Universiti Kebangsaan Malaysia. Thank you for believing in me.

I would like to thank the Universiti Kebangsaan Malaysia, in particular Madam Hajah Normah Adam, Senior Principal Assistant Registrar, Human Resource Management, Madam Hajah Nor Aini bt Mohd Ariff, Senior Principal Assistant Registrar, Legal Unit, Department of Registrar UKM and the Ministry of Higher Education for the grant of scholarship throughout my research.

It is a pleasure to thank those who made this thesis possible; Madam Farhatun Samat, Legal Officer, Malaysian Marine Department, Encik Ahmad Nordin Ibrahim, the Head of Vessel Traffic Services Unit, the Malaysian Marine Department, Captain Noor Apandi Osnin from the Maritime Institute of Malaysia, Professor Dr Martin Tsamenyi and Professor Dr Greg Ross from the Faculty of Law, University of Wollongong, Australia, Professor Dr Vivian Forbes from the Faculty of Law, Western University of Australia Dr Melda Kamil Ariadno from the Faculty of Law, University of Indonesia and Madam Ikaningkyas from the Faculty of Law, University of Brawijaya.

I am equally grateful to the librarians, in particular Madam Rosnah Suliman, Head of Law Library of the Universiti Kebangsaan Malaysia, Madam Ummu Aiman, the Senior Assistant Registrar Faculty of Law UM, the staffs of the main office the Faculty of Law UM, in particular Madam Nor Faizah Mohd Nor, the Institute of Ocean and Earth Science, Law and Policy Unit, UM and the librarians of the Faculty of Law, University of Malaya.

I owe my gratitude to my mother, Madam Hajah Sumah Bulin, my father in law, Tuan Haji Mohd Nopiah Meh, my mother in law, Madam Hajah Sarinam Manan and my brothers and sisters. Thank you for your love, prayers and support.

I cannot find words to express my gratitude to my beloved husband, Associate Professor Dr Zulkifli Mohd Nopiah and my precious children Zikri, Zafrul, Sarah, Zarif and Hajar for their undying loves, sacrifices, patience, prayers and encouragement throughout my research. This couldn't be possible without you all.

Lastly, I offer my appreciation to friends in particular, Associate Professor Dr Zinatul Ashiqin Zainol, Professor Dr Noor Inayah Yaakub and those who supported me in any respect during the completion of my research.



## **DEDICATION**

This thesis is dedicated with loving memories of my father (Allahyarham Wan Dahalan B Wan Abd Rahman-2005) and my brother in law (Allahyarham Muhd Yussak B Ismail-2008).

## **LIST OF THE INTERNATIONAL CONVENTIONS**

International Maritime Dangerous Goods Code.

Kyoto Protocol 1997.

Regulation of the Carriage of Dangerous Substances on the Rhine 1970.

Regulations Concerning the International Carriage of Dangerous Goods by Rail 1985.

Resolutions of the Final Act of the International Conference on Hazardous and Noxious Substances 1996.

The Athens Convention relating to the Carriage of Passengers and their Luggage by Sea 1974.

The Basel Convention on Transboundary Movement of Hazardous Waste 1989.

The Barcelona Convention for the Protection of the Mediterranean Sea Against Pollution 1976.

The Convention on Limitation of Liability for Maritime Claims 1976 Protocol 1996.

The Protocol of HNS Convention 2010.

The Convention Concerning International Carriage By Rail 1924, 1985.

The Convention on International Civil Aviation 1944.

The Convention on Civil Liability for Damage Caused During Carriage of Dangerous Goods by Road, Rail and Inland Navigation Vessel 1989.

The Convention on the International Satellite Organization (INMARSAT) and Operating Agreement 1976.

The Desertification Convention 1994.

The European Agreement Concerning the International Carriage of Dangerous Goods by Road 1957.

The Helsinki Convention on the Transboundary Effects of Industrial Accidents 1992.

The Helsinki Convention on the Protection of the Marine Environment of the Baltic Sea Area 1992.

The International Code for the Construction and Equipment of Ships Carrying Dangerous Chemical in Bulk 1983.

The International Convention for the Prevention of Pollution from Ships 1973 as modified by the Protocol of 1978.

The International Convention for the Safety of Life at Sea 1974.

The International Convention on Civil Liability for Bunker Oil Pollution Damage 2001.

The International Convention on Civil Liability for Oil Pollution Damage 1969 the Protocol of 1976 the Protocol of 1984 the Protocol of 1984 the Protocol of 1992.

The International Convention on Liability and Compensation for the Carriage of Hazardous and Noxious Substances by Sea 1996.

The International Convention on Establishment of an International Fund for Compensation for Oil Pollution Damage 1969 The Protocol of 1976, 1984, 1992, 2000, 2003.

The International Treaty on Plant Genetic Resources for Food and Agriculture 2001.

The International Ship and Port Facility Security Code 2004.

The International Regulations for Preventing Collisions at Sea 1972.

The International Convention on the Standards of Training, Certification and Watch Keeping for Seafarers 1978.

The International Convention on Tonnage Measurement of Ships 1969.

The International Convention on the Control of Harmful Anti-Fouling Systems on Ships 2001.

The International Convention for the Safety of Life at Sea 1960.

The London Convention on the Prevention of Marine Pollution by Dumping Wastes and Other Matter 1972.

The Law of the Sea Convention 1982.

The Maastricht Treaty 1992.

The Montreal Guidelines on the Protection of the Environment of the Baltic Sea Area 1992.

The Merchant Shipping (Minimum Standards) Convention 1976.

The Paris Convention on Third Party Liability in the Field of Nuclear Energy 1960.

The Protocol on Preparedness, Response, and Co-operation to Pollution Incidents by Hazardous and Noxious Substances 2000.

The Rio Declaration on Environment and Development 1992.

The Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade 1998.

The Stockholm Convention on Persistent Organic Pollutant 2001.

The Stockholm Declaration on the Human Environment 1972.

The Vienna Convention on Civil Liability for Nuclear Damage 1963.

United Nations Convention on Biological Diversity 1992.

## LIST OF STATUTES

- Malaysian Federal Constitution 1965. (Malaysia)
- Singaporean Constitution 1965. (Singapore)
- The Indonesian Constitution 1945. (Indonesia)
- Baselines of Maritime Zones Act 2006 (Act 660). (Malaysia)
- Emergency (Essential Powers) (Amendments) Ordinance Number 7 1969. (Malaysia)
- Environmental Quality Act 1974 (Act 127). (Malaysia)
- Governmental Regulation Number 19 Year 1999. (Indonesia)
- Governmental Regulation Number 69 Year 2001. (Indonesia)
- Governmental Regulation Number 51 Year 2002. (Indonesia)
- Hazardous Waste (Control of Export, Import and Transit) Act (Chapter 122A) 13 of 1997, 1998 Revised Edition, Amended 9 of 2003. (Indonesia)
- Kep.Ka Bapedal No. Kep.02/Bapedal/09/1995 - Waste Document 09/1995. (Indonesia)
- Kep. Ka Bapedal No. Kep.02/Bapedal/09/1995* - the Rules to Treat the B3 Waste. (Indonesia)
- Law Number 32 Year 2009 - Environmental Protection and Management. (Indonesia)
- Law Number 17 Year 1985 - the 1982 LOSC. (Indonesia)
- Law Number 6 Year 1996. (Indonesia)
- Law Number 23 Year 1997. (Indonesia)
- Law Number 1 Year 1993. (Indonesia)
- Law Number 5 Year 1983 - Indonesian Exclusive Economic Zone. (Indonesia)
- Maritime and Port Authority of Singapore Act (Chapter 170A) 1997. (Singapore)
- Ministry of Transportation Decree Number 167/HM.207/PHB-86. (Indonesia)
- Ministry of Transportation Decree Number KM.215/AL/506/Phb-87. (Indonesia)
- Number 453/MEN.KES/PER/XUII/1983. (Indonesia)

Order of the Head for the Agency for Environmental Impact Control. (Indonesia)

Presidential Decree Number 46 Year 1986. (Indonesia)

President Republic of Indonesia Number 161 Year 1999. (Indonesia)

Presidential Decree Number 61 Year 1993. (Indonesia)

Single European Act 1987.

The Customs Act 1967 (Act 235). (Malaysia)

The Continental Shelf (Amendment) Act 2009 (Act 311). (Malaysia)

The Klang Port Authority (Amendment) By Laws 1989. (Malaysia)

The Environmental Protection and Management Law 2009. (Indonesia)

The Exclusive Economic Zone Act 1984 (Act 311). (Malaysia)

The Malaysian Maritime Enforcement Agency Act 2004 (Act 633). (Malaysia)

The Merchant Shipping Ordinance 1952. (Malaysia)

The Pesticides (Amendment) Act 2004 (Act A1226). (Malaysia)

The Prevention of Pollution of the Sea Act 1990. (Singapore)

The Territorial Waters Jurisdiction Act 1878. (Singapore)

The Dangerous Goods Merchant Shipping (Safety Convention) Regulations 1990. (Singapore)

The UK Merchant Shipping 1979. (United Kingdom)

The Australian Protection of the Sea Act 1983. (Australia)

United States Comprehensive Environmental Response, Compensation and Liability Act 1980. (United States)

United States Oil Pollution Act 1990. (United States)

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Corfu Channel Case (*United Kingdom v Albania*) [1949] ICJ Rep 14.

Exxon Valdez 1989.

Grandcamp 1947.

*Jupiter Shipping Pte Ltd v Public Prosecutor* [1993] 2 SLR 69.

*Heaven v Pender Brett* [1883] 11 QBD 503.

*Esso Petroleum Co Ltd and Another v Southport Corporation* [1955] 3 All ER 864.

*Tan Ah Yeo & Anor v Seow Teck Ming & Anor* [1991] SLR 169.

The Buyat Bay 1996.

Torrey Canyon 1967.

## LIST OF ABBREVIATIONS

<b>AIS</b>	Automatic Identification System
<b>AMSA</b>	Australian Maritime Authority
<b>ChemPlan</b>	Australian National Marine Chemical Spill Contingency Plan 2010
<b>ASEAN</b>	Association of Southeast Asian Nations
<b>APMM</b>	Malaysian Maritime Enforcement Agency
<b>BC Code</b>	Code of Safe Practice for Solid Bulk Chemicals
<b>CERCLA</b>	Comprehensive Environmental Response, Compensation and Liability Act
<b>CLC</b>	International Convention on Civil Liability for Oil Pollution Damage
<b>COLREGS</b>	International Regulations for Preventing Collisions at Sea
<b>CSR</b>	Corporate Social Responsibility
<b>DGPS</b>	Differential Global Positioning System
<b>DWT</b>	Deadweight tonnage
<b>ECDIS</b>	Electronic Chart Display System
<b>ENC</b>	Electronic Navigational Charts
<b>EU</b>	European Union
<b>EIA</b>	Environmental Impact Assessment
<b>FSC</b>	Flag State Control
<b>GBP</b>	Great Britain Pound Sterling
<b>HNS</b>	Hazardous and Noxious Substances
<b>IMO</b>	International Maritime Organization
<b>IMDG</b>	International Maritime Dangerous Goods
<b>ISPS Code</b>	International Ship and Port Facility Security Code
<b>IMB</b>	The International Maritime Bureau



<b>ISO</b>	International Standard Organisation
<b>JICA</b>	Japan International Co-operation Agency
<b>JITI</b>	Japan International Transport Institute
<b>LME</b>	London Metal Exchange
<b>LNG</b>	Liquid Natural Gas Carriers
<b>LOA</b>	Length Overall (or over 30 m in height)
<b>LME</b>	London Metal Exchange
<b>LOSC</b>	1982 Law of the Sea Convention
<b>MALSINDO</b>	Malaysia, Singapore and Indonesia
<b>MEH</b>	Marine Electronic Highway
<b>MENAS</b>	Middle East Navigational Aids Service
<b>MIMA</b>	Maritime Institute of Malaysia
<b>MMEA</b>	Malaysian Maritime Enforcement Agency
<b>MSC</b>	Malaysia Shipping Circular
<b>MSQ</b>	Maritime Safety Queensland
<b>MOU</b>	Memorandum of Understanding
<b>NIP</b>	National Implementation Plan
<b>OPRC</b>	Protocol on Preparedness, Response and Co-operation to Pollution Incidents
<b>OECD</b>	Organization for Economic Co- Operation and Development
<b>OSPAR</b>	Oil Spill Response Action Plan
<b>OSRAP</b>	ASEAN Oil Spill Response Action Plan
<b>SEA</b>	Strategic Environmental Assessment
<b>PSSA</b>	Particularly Sensitive Sea Area
<b>PIC</b>	Prior Informed Consent
<b>PSC</b>	Port State Control
<b>POP</b>	Persistent organic pollutants
<b>REEFVTS</b>	Great Barrier Reef and Torres Strait Vessel Traffic Service

<b>REEFREP</b>	Great Barrier Reef and Torres Strait Ship Reporting System
<b>REEFVTS</b>	Great Barrier Reef & Torres Strait Vessel Traffic Service
<b>SOLAS</b>	Safety of Life at Sea
<b>SSS</b>	Sea Surveillance System
<b>STCW</b>	Standards of Training, Certification and Watch keeping for Seafarers
<b>STRAITREP</b>	Malacca Straits Ship Reporting System
<b>TBT</b>	Organic Tributyltin
<b>TTEG</b>	Tripartite Technical Experts Group
<b>TSS</b>	Traffic Separation Scheme
<b>UMMRec</b>	University of Malaya Maritime Research Centre
<b>UN</b>	United Nations
<b>USD</b>	United States Dollar
<b>VLCC</b>	Very Large Crude Carriers
<b>VTs</b>	Vessel Traffic System
<b>VTsO</b>	Vessel Traffic Service Operator
<b>VHF</b>	Very High Frequency

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