

STIMSON

**Maritime Commerce and Security:
The Indian Ocean**

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Rupert Herbert-Burns with
Junko Kobayashi

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Preface

Globalization – or global economic integration – is among the handful of organizing principles for contemporary international relations. It has assumed a status as an analytical and explanatory tool on a par with traditional considerations such as geo-strategic location, national military power, size and natural resource endowment of territories, level of industrial development and human elements such as demography, educational endowment and culture.

Maritime commerce is now, and for almost all of modern history has been, the key to global trade and therefore to globalization. Indeed, we may trace the roots of modern globalization to the onset of the age of European maritime discovery half a millennium ago. Yet seaborne commerce remains a decidedly neglected dimension of the discourse on international relations.

The present work looks at the Indian Ocean as an increasingly vital maritime space. It looks at the maritime agenda from an economic and shipping perspective, but also factors in issues of security, from the safety of ships and their crews, to the larger security concerns of littoral states and major powers for whom the sea is a lifeline for prosperity and growth. We have organized this study, which we hope will serve as a useful reference document to diverse audiences, into three broad categories: Maritime Commerce, Maritime Infrastructure and Maritime Issues and International Security.

In addition to extensive research in the trade and academic press, this volume is based on field visits and interviews with scholars, government officials, and regulators, mariners, port officials and business executives in several sectors of the shipping industry. The authors visited ports and other maritime institutions in Singapore, Malaysia, Indonesia, India, Bangladesh, Pakistan, the United Arab Emirates, Egypt, Tanzania, Kenya and Mauritius.

Stimson's work on the Indian Ocean region began as part of a project conducted between 2007 and 2010 entitled *Regional Voices: Transnational Challenges*. That project sought to delineate and describe, from a multi-disciplinary perspective, the emerging security trends and challenges (environmental, economic, demographic, institutional, and in the realm of ideas) in the countries of Southeast Asia, South Asia, the Middle East and East Africa – in other words, most of the countries of the Indian Ocean littoral.

We saw developments in the maritime sphere – in resources, environment, governance, and security – as critical to the broader regional security environment; in a region of rapid economic growth, of shifting balances in economic and military power, and of emerging strategic competition. The first part of the work related to the Indian Ocean was embodied in *The Indian Ocean: Resource and Governance Challenges*, (Stimson 2009). It was followed by *Coastal Zones and Climate Change* (Stimson 2010), focused on the environmental dimensions of the Indian Ocean.

I am deeply grateful to Amit Pandya, currently serving in the US government, for his leadership of this project. He directed the Regional Voices program for three productive years, and co-authored this impressive study as a labor of love after his Stimson work was completed. Rupert Herbert-Burns, based in the UK, is a man of many maritime talents, based on his considerable experience in the Royal Navy, as a consultant to the maritime industry, and as a writer and analyst on maritime issues. Stimson has benefitted greatly from his contributions to our work on maritime issues, which will continue in 2011. Lastly, Junko Kobayashi, a Research Associate at Stimson from 2007 to 2009, provided important research assistance and was the principal author of the ports and environmental sections of the report.

Sincerely,

A handwritten signature in cursive script, reading "Ellen Laipson".

Ellen Laipson
February 2011

President and CEO
The Stimson Center

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In addition to expressing our thanks to the hundreds of executives, officials, naval officers and experts from throughout the region and in the United States and United Kingdom, who were so generous with their time and knowledge, we particularly acknowledge the assistance of the following people. It is no exaggeration to say that without them, this work would not have been possible.

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Abbreviations and Acronyms

| | |
|-----------------------|--|
| AIS | Automatic Identification System |
| APEC | Asia-Pacific Economic Cooperation |
| AQ | Al Qaeda |
| AQAP | Al Qaeda in the Arabian Peninsula |
| AQI | Al Qaeda in Iraq |
| ASEAN | Association of Southeast Asian Nations |
| AU | African Union |
| BCI | Baltic Exchange Capesize Index |
| BDI | Baltic Exchange Dry Index |
| Bpd | Barrels per Day |
| BRIC | Brazil, Russian Federation, India and China |
| Btm | Billion Ton Miles |
| C4I | Command, Control, Communications, Computers and Intelligence |
| CENTCOM | US Central Command |
| CINC | Commander-in-Chief |
| CJTF-HOA | US Combined Joint Task Force-Horn of Africa |
| CO₂ | Carbon Dioxide |
| CTF | Combined Task Force |
| DWT | Deadweight Tonnage |
| EIA | Energy Information Agency (US Department of Energy) |
| EiS | Eye in the Sky |
| EU | European Union |
| FEU | 40-foot Equivalent Unit |
| FPSO | Floating Production and Storage Unit |
| FSO | Floating Storage Unit |
| GCC | Gulf Cooperation Council |
| GDP | Gross Domestic Product |

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| GRT | Gross Registered Tonnage |
| GT | Gross Tonnage |
| ICC | International Chamber of Commerce |
| ICS | International Chamber of Shipping |
| ILO | International Labour Organization |
| IMB | International Maritime Bureau |
| IMO | International Maritime Organization |
| IPCC | Intergovernmental Panel on Climate Change |
| IRTC | Internationally Recognized Transit Corridor |
| IPSP | International Port Security Program |
| ISPS | International Ship and Port Facility Security Code |
| IWAS | Irregular Warfare at Sea |
| JWC | Joint War Committee |
| LMA | Lloyd's Market Association |
| LNG | Liquefied Natural Gas |
| LOA | Length Overall |
| LPG | Liquefied Petroleum Gas |
| LRIT | Long Range Information and Tracking |
| LSCI | Liner Shipping Connectivity Index |
| LTTE | Liberation Tigers of Tamil Eelam |
| MARLO | US Maritime Liaison Office (Bahrain) |
| Mbd | Million Barrels per Day |
| MDA | Maritime Domain Awareness |
| MNC | Multinational Corporation |
| MSC | Maritime Safety Committee (IMO) |
| MSC(HOA) | Maritime Security Center (Horn of Africa) |
| MSO | Maritime Security Operations |
| NATO | North Atlantic Treaty Organization |
| OBO | Ore/Bulk/Oil Carrier |
| OECD | Organization for Economic Cooperation and Development |
| PRC | Peoples Republic of China |
| PSI | Proliferation Security Initiative |
| RN | Royal Navy |

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| Ro-Ro | Roll-on/Roll-off |
| RPG | Rocket Propelled Grenade |
| SCA | Suez Canal Authority |
| SIDS | Small Island Developing States |
| SLOC | Sea Lanes of Communication |
| SOLAS | Safety of Life at Sea Convention |
| STCW | Standards of Training, Certification and Watchkeeping for Seafarers |
| SUA | Convention for the Suppression of Unlawful Acts Against the Safety of Maritime Navigation |
| TCO | Transnational Crime Organization |
| TEU | 20-foot Equivalent Unit |
| TNC | Transnational Corporation |
| TOC | Transnational Organized Crime |
| UAE | United Arab Emirates |
| UAV | Unmanned Aerial Vehicle |
| UHF | Ultra High Frequency |
| UIC | Union of Islamic Courts |
| UKMTO | UK Maritime Trade Organization |
| ULCC | Ultra Large Crude Carrier |
| UNCLOS | United Nations Convention of the Law of the Sea |
| UNCTAD | United Nations Conference on Trade and Development |
| UNFCCC | United Nations Framework Convention on Climate Change |
| US | United States |
| USCG | United States Coast Guard |
| USN | United States Navy |
| VBSS | Vessel Board Search and Seizure |
| VHF | Very High Frequency |
| VLCC | Very Large Crude Carrier |
| VLGC | Very Large Gas Carrier |
| VLOC | Very Large Ore Carrier |
| WBIED | Water-borne Improvised Explosive Device |
| WCO | World Customs Organization |
| WTO | World Trade Organization |

Glossary

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| <i>Armed robbery at sea:</i> | An act of armed crime against a vessel and her crew inside territorial waters that may include theft of stores, cash and personal belongings, assault, kidnapping and seizure of the vessel. |
| <i>Asymmetric warfare:</i> | Armed conflict between belligerents whose relative military strength and tactical approach differs significantly, with the effect that the nominally weaker side will attempt to offset this inferiority by exploiting the vulnerabilities of the militarily stronger side. |
| <i>Ballast:</i> | Any weight (usually water) used to improve the stability of a vessel (usually when steaming with reduced or no cargo), or to change the trim or draft of a vessel. |
| <i>Baltic Exchange:</i> | <p>The world's only independent source of maritime market information for the trading and settlement of physical and derivative shipping contracts.</p> <p>Members are responsible for a large proportion of all global dry cargo and tanker fixtures as well as the sale and purchase of merchant vessels.</p> |
| <i>Break-bulk:</i> | Cargo that is conveyed as individual packages/parcels. |
| <i>Bulk carrier (Bulkier):</i> | A vessel that conveys cargo (usually dry) in bulk form, such as iron ore or coal. |
| <i>Bunkering:</i> | The act of a vessel taking propulsion fuel onboard. |
| <i>Classification society:</i> | A non-governmental organization that certifies a vessel's seaworthiness and construction standards. |
| <i>Combined task force:</i> | A multinational coalition naval task force formed to address a shared maritime security problem or common foe. |
| <i>Container rates:</i> | Rate or charge for transporting a whole container (TEUS or FEU). |
| <i>Container terminal:</i> | Ship/shore interface with several different types and sizes of lifting equipment such as gantry cranes and straddle lifters, and gate/reception facilities for processing ground transportation. |

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| <i>Deadweight tonnage:</i> | The total weight that a ship can carry, including cargo, bunkers, water, stores, and crew. |
| <i>Demurrage:</i> | A charge levied on cargo for delayed receipt of a container held in facilities/location at which the line incurs a consequential cost. |
| <i>Dispatch:</i> | Premium payment made for reducing the time a vessel must spend in port loading/discharging cargo. |
| <i>Draft:</i> | Depth of a vessel below the waterline (surface of the water). |
| <i>Feeder vessels:</i> | Small, short sea vessels (usually small container vessels or general cargo vessels) that transport cargo from local/regional ports to larger transshipment ports (load centres) from where it is shipped on much larger vessels to distant locations. |
| <i>Freeboard:</i> | Vertical distance from the waterline to the top of the weather deck. |
| <i>Freight all kinds:</i> | Also referred to as FAK, it is the standard rate, regardless of commodities, loaded into a container. |
| <i>Freight rates:</i> | Prices or rates charged for carriage of goods by sea. |
| <i>General cargo vessel:</i> | Multi-purpose vessels, designed to handle and stow a variety of freight. This may include forest products, manufactured goods, heavy equipment, vehicles, machinery, bagged goods, steel and food products, and containers. |
| <i>Handymax bulk carrier:</i> | 35,000 – 54,999 DWT |
| <i>Handysize bulk carrier:</i> | 10,000 – 34,999 DWT |
| <i>Intermodal:</i> | Conveyance system that encompasses different modes of transport (ship/road/rail) with minimal disruption to speed and flow of goods during transition process. |
| <i>International Maritime Organization:</i> | Specialised, self-governing agency that is part of the UN. Its role is to develop and maintain a comprehensive regulatory framework for shipping, including: safety, environmental concerns, legal matters, technical co-operation and maritime security. |
| <i>ISPS Code:</i> | An amendment to the SOLAS Convention on minimum security arrangements for ships, ports and government agencies. It prescribes responsibilities to governments, shipping companies, shipboard personnel, and port/facility personnel to “detect security threats and take preventative measures against security incidents affecting ships or port facilities used in international trade.” |

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| <i>Large capesize bulk carrier:</i> | 150,000 DWT + |
| <i>Liner service:</i> | An ocean common carrier service (usually on panamax and post-panamax container ships) that operates on an established route, which has published, fixed sailing times and published tariffs. |
| <i>Maritime security operations (MSO):</i> | A term referring to the actions of naval forces to combat maritime terrorism and other illegal activities, such as smuggling, hijacking, piracy, and human trafficking. |
| <i>Maritime terrorism:</i> | A variant of terrorism that takes place within the maritime realm – at sea, onboard ships, against ships, within ports, on offshore infrastructure, and inland water ways and riverine areas. As with its terrestrial cousin, its objective is the application of violence for political aims. Piracy, which is perpetrated for financial gain, is NOT maritime terrorism. |
| <i>MARPOL:</i> | An IMO convention for the prevention of pollution by shipping. |
| <i>Naval escort:</i> | A warship, usually a of corvette, frigate or destroyer size, which is tasked with actively protecting merchant vessels (either solo or in convoy). Originally, in a wartime context of protecting convoys, these ships were employed primarily for anti-submarine warfare in wartime. In the contemporary context of MSO, naval escorts offer protection in the form of rapid reaction to a piracy attack, but are not usually engaged in continuously escorting groups of ships. |
| <i>Panamax bulk carrier:</i> | 55,000 – 84,999 DWT/breadth <3231 m |
| <i>Panamax container ship:</i> | Breadth <32.31 m (no length restrictions) |
| <i>Piracy:</i> | As defined by UNCLOS, “piracy is any illegal act of violence or detention, or any act of depredation, committed for private ends...on the high seas (in international waters) against another ship...,or against persons on board such a ship in a place outside the jurisdiction of any state.” |
| <i>Post-Panamax container ship:</i> | Breadth >32.31 m (no length restrictions) |
| <i>Post-Panamax crane:</i> | A gantry crane capable of servicing container ships of breadths greater than the Panamax-sized vessels (usually up to 17 TEUs across) |
| <i>Q-Flex:</i> | A membrane-type LNG carrier with a cargo capacity of between 210,000 m ³ and 216,000 m ³ |
| <i>Q-Max:</i> | The largest LNG carrier class in the world. The name Q-Max refers to (Q) Qatar Max - the maximum size of ship able to dock at Ras Laffan terminal in Qatar. The Q-Max has a cargo capacity of 266,000 cubic meters. |

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| <i>Reefer:</i> | Shorthand term referring to refrigerated vessels or cargoes. |
| <i>Ro/Ro:</i> | Roll-on/Roll-off vessels or cargoes. |
| <i>Sea lanes of communication (SLOCs):</i> | The primary maritime routes between ports and regions and/or seas areas that are used for commercial sea trade, logistics supply and naval forces. |
| <i>Small capsized bulk carrier:</i> | 80,000 – 149,999 DWT |
| <i>SOLAS:</i> | The Safety of Life at Sea Convention is an IMO convention that specifically addresses the safe operation, practices of merchant ships, including the fitting and operation of relevant equipment such as life boats, emergency communications, and fire fighting. |
| <i>String/loop:</i> | The fleet or grouping of container vessels required to provide a required TEUS/FEU capacity and service frequency along a specific route, such as Europe to Asia. |
| <i>SUA convention:</i> | <p>UN(IMO) protocol governing measures to prevent unlawful acts which threaten the safety of ships and the security of their passengers and crew from dangers of piracy, armed robbery and other unlawful acts. The main purpose of the convention is to ensure that appropriate action is taken against persons committing unlawful acts against ships.</p> <p>These include: the seizure of ships by force; acts of violence against persons on board ships; and, the placing of devices on board a ship which are likely to destroy or damage it. The convention obliges governments either to extradite or prosecute alleged offenders.</p> |
| <i>Suezmax tanker:</i> | 125,000 – 199,999 DWT |
| <i>Tramp shipping:</i> | A shipping service wherein the shippers contract to transport cargo in shipload consignments between ports designated by the charterer. |
| <i>Transshipment port:</i> | Very large hub ports that function to aggregate/consolidate cargo (usually containerised) from a number of smaller regional ports for onward shipment to distant markets/ports in high-volume liner services. |
| <i>ULCC:</i> | Ultra Large Crude Carriers of 350,000 DWT + |
| <i>VLCC:</i> | Very Large Crude Carriers of 200,000 – 349,999 |