



THE NAVAL CONTRIBUTION  
TO NATIONAL SECURITY AND  
PROSPERITY

EDITED BY  
ANDREW FORBES

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SEA POWER CENTRE - AUSTRALIA



# **The Naval Contribution to National Security and Prosperity**

**Proceedings of the Royal Australian Navy  
Sea Power Conference 2012**

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# The Naval Contribution to National Security and Prosperity

Proceedings of the Royal Australian Navy  
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Edited by  
Andrew Forbes

Sea Power Centre - Australia

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The Sea Power Centre - Australia was established to undertake activities to promote the study, discussion and awareness of maritime issues and strategy within the Royal Australian Navy, the Department of Defence and civil communities at large. Its mission is:

- to promote understanding of sea power and its application to the security of Australia's national interests
- to manage the development of RAN doctrine and facilitate its incorporation into ADF joint doctrine
- to contribute to regional engagement
- contribute to the development of maritime strategic concepts and strategic and operational level doctrine, and facilitate informed forces structure decisions
- to preserve, develop, and promote Australian naval history.

Comments on this volume or any enquiry related to the activities of the Centre should be directed to:

Director  
Sea Power Centre - Australia  
Department of Defence  
PO Box 7942  
Canberra BC ACT 2610  
AUSTRALIA

Email: [seapower.centre@defence.gov.au](mailto:seapower.centre@defence.gov.au)

Website: [www.navy.gov.au/spc](http://www.navy.gov.au/spc)

# Contents

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Contents	v
Foreword	ix
Notes on Contributors	xiii
Abbreviations	xv

## Part 1 Keynote Addresses

Congress Opening <i>Stephen Smith</i>	3
Chief of Navy <i>Ray Griggs</i>	17
Chief of Army <i>David Morrison</i>	23
Chief of Air Force <i>Geoff Brown</i>	29

## Part 2 Economics of Sea Power

The Economics of Sea Power: Testing Maritime Narrative for the 21st Century <i>Geoffrey Till</i>	39
Is There a Threat to Australia's Seaborne Trade? <i>Andrew Forbes and David Neumann</i>	55
The Importance of the Australian Hydrographic Service to Seaborne Trade <i>Jenny Daetz</i>	75
Australian Shipping <i>Noel Hart</i>	89

## Part 3 Naval and Interagency Cooperation

Promoting Australia as a Maritime Power: The Significance of the Law of the Sea <i>Sam Bateman and George Galdorisi</i>	97
Interagency Arrangements in New Zealand <i>Martyn Dunne</i>	115

Maritime Cooperation in the Malacca Strait <i>Datuk Mohd Amdan</i>	125
Enhancing Maritime Security Cooperation <i>Ng Chee Peng</i>	135

## Part 4 Sea Power

The Marine Nationale in the Southwest and Southern Indian Ocean <i>Christian Bouchard</i>	141
A South African Perspective on the Indian Ocean <i>Frank van Rooyen</i>	161
Enhancing Mutual Trust and Cooperation to Jointly Build a Harmonious Ocean: PLAN Escort Missions in the Gulf of Aden <i>Liao Shining</i>	177
An Australian Perspective on International Naval Cooperation <i>Greg Sammut</i>	183
Maritime Operations in the Asia-Pacific Region <i>Scott Swift</i>	193
The Role of Sea Power in the 21st Century <i>Andrew Davies</i>	199
Sea Power and Security in the East and South China Seas <i>Alession Patalano</i>	209
Maintaining Good Order at Sea <i>Norman Friedman</i>	225

## Part 5 Royal Australian Navy

The Naval Reserve: Helping Navy Reach Further into the Community <i>Richard Phillips</i>	237
Maritime Medical Diplomacy as an Instrument of Soft Power <i>Rob Curtis</i>	243
Naval Engineering: A Lead Indicator of National Security and Prosperity <i>Mark Purcell</i>	259
Australia's Future Submarine <i>Rowan Moffitt</i>	267

Australian Navy Shipbuilding  
*Henry Ergas, Mark Thomson and Andrew Davies*

275







## Foreword

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The 2012 Sea Power Conference was the seventh since the current format was conceived in 2000. Over the last 12 years this prestigious gathering, combined with the Pacific series of International Maritime Expositions and International Maritime Conferences, has explored many and varied themes, ranging from an examination of maritime war in the 21st century (2000) to old and new challenges (2004), and combined and joint operations from the sea (2010).

The theme of the 2012 conference, held between 31 January and 2 February at the Sydney Convention and Exhibition Centre, was ‘The Naval Contribution to National Security and Prosperity.’ The premise was designed to focus on the wider utility of navies as part of a continuing effort to inform the public about the value of navies. While similar initiatives have been undertaken before, the issue of public (and wider Defence) education and awareness is perennial. This problem is faced by many navies, and is relevant to Australia where a continentalist mindset has typified public debate. The maritime domain remains vital to Australia’s national security and prosperity, a point made in the 2009 Defence White Paper, *Defending Australia in the Asia Pacific Century: Force 2030*.

The 26 papers presented are divided into five parts. As has become a regular feature of recent conferences, the opening sessions included a series of speeches delivered by the Australian Defence Force’s senior leadership: the Minister for Defence and the three Service chiefs. These comprise Part One of the conference proceedings. What is striking about the Service chiefs’ papers in particular is the degree of convergence in thinking regarding the future of the ADF, the importance of a maritime strategy for Australia and their Services’ role in that maritime strategy. This collaborative thinking has been a theme in many of their follow on speeches throughout 2012, indicating an evolution in appreciation for the centrality of maritime strategy in Australian Defence policy.

Part Two, The Economics of Seapower, underpins the notion of navies as key stakeholders in national prosperity. Emeritus Professor Geoffrey Till, one of the world’s foremost maritime strategists, begins by testing the maritime narrative for this century. Following an historical analysis, he settles on two essential pieces of advice for those powers that seek to defend their capacity to profit from the maritime approach’s cost-effectiveness: defend the system against whatever may threaten it, and moderate objectives in order to keep costs manageable. As Professor Till acknowledges, there is little new in that suggestion. The maritime approach of direct and indirect defence of trade, maintenance of maritime security, capacity building, offshore balancing and limited engagement for maximum effect, is a strategy that

has served maritime powers well for several hundred years. With this in mind, Dr Sam Tangredi; Mr Andrew Forbes and Commander David Neumann, RANR; Captain Jenny Daetz, RAN; and Mr Noel Hart provide various perspectives of Australian shipping and seaborne trade.

Having laid the foundation for navies as guarantors of prosperity, Part Three, Naval and Interagency Cooperation, examines the role of maritime cooperation. Doctor Sam Bateman and Captain George Galdorisi, USN (Rtd), lead by postulating how Australia might use the law of the sea as a tool to promote Australia as a maritime power. His Excellency Major General Martyn Dunne, CNZM (Rtd), details the interagency cooperative approach used by New Zealand, while Admiral Datuk Mohd Amdan bin Kurish of the Malaysian Navy and Rear Admiral Ng Chee Peng, RSN, outline aspects of maritime security cooperation from Malaysian and Singaporean perspectives respectively.

Part Four examines the fundamentals of seapower through a range of lenses. Doctors Christian Bouchard and William Crumplin provide a French view of the Indian Ocean, and Captain Frank van Rooyen, SA Navy (Rtd), a South African one. Commodore Greg Sammut, RAN, provides an Australian perspective of international naval cooperation, framed by his experiences in command of Combined Task Force 150 and overseeing the provision of maritime security covering the Red Sea, Gulf of Aden, Indian Ocean and Gulf of Oman. Vice Admiral Scott Swift, USN, complements this paper with his own thoughts on maritime partnerships, seen from his vantage on the opposite side of the Indo-Pacific, in command of the Japan-based US 7th Fleet. Doctor Andrew Davies's paper is a worthy contribution to the discussion. Although he takes a dissenting view on some aspects of current maritime strategic thought, it is an important reminder to naval professionals to consider carefully the use of history in the critical analysis of contemporary circumstances. Still, Mark Twain observed that 'while history may not repeat itself, it sure does rhyme.' Doctors Alessio Patalano and Norman Friedman use the lessons of history liberally in their analysis respectively of sea power and regional security in East Asia and the maintenance of good order at sea - the latter being a global public good. The Chinese People's Liberation Army Navy (PLAN) was also invited to speak at the conference. Although unable to do so, we have included a paper submitted by Rear Admiral Liao Shining, PLAN, which shares Chinese perspectives on the PLAN's recent escort missions in the Gulf of Aden.

The final part of these proceedings focuses on the Australian standpoint. Commodore Richard Phillips, RANR, outlines the role of the reserves in supporting the Navy's mission and the importance of cross pollination of skills and experience between industry, the broader community and the Navy. Commander Rob Curtis, RAN, examines soft power through the lens of maritime medical diplomacy. In the wake of the Rizzo Review into Naval Engineering, Commodore Mark Purcell, RAN, provides a timely reminder of the significance of engineering as a key enabler of naval operations. We overlook this at our peril. The nature of the engineering function is

a neat segue for Rear Admiral Rowan Moffitt, RAN, who imparts the benefit of his intimate knowledge of the future submarine project's challenges and opportunities. The final paper is one of the most thought provoking from the conference. Professor Henry Ergas, Doctors Andrew Davies and Mark Thompson examine from economic and strategic perspectives the question of whether Australia should remain in the ship building business.

Chief of Navy Vice Admiral Ray Griggs, RAN, remarked this year that the nature of maritime trade in the global system is more pervasive than ever before, which underpins a notion that we have entered a maritime century as much as an Asian century. Indeed, a close read of the Government's recently released white paper, *Australia in the Asian Century*, reveals opportunities for the Navy to assist meaningfully in the achievement of the aspirations contained therein. Fundamentally, navies exist as a means of national insurance; as tools for the application of force in statecraft. Yet, the broader utility of navies across a wide spectrum of operations is often overlooked. This compilation of conference papers affords a rich array of views that will contribute to the ongoing debate regarding the link between navies and national security and prosperity. I hope you enjoy the range of views presented.

Captain Justin Jones, RAN  
Director, Sea Power Centre – Australia  
December 2012



# Notes on Contributors

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**Admiral Maritime Datuk Mohd Amdan bin Kurish** is the Director General Malaysian Maritime Enforcement Agency.

**CDRE Sam Bateman, PhD, AM RAN (Rtd)** is a professorial research fellow at the Australian National Centre for Ocean Resources and Security (ANCORS) at the University of Wollongong.

**Dr Christian Bouchard** is an associate professor at Laurentian University, Sudbury, Canada.

**Air Marshal Geoff Brown, AO** is the Chief of Air Force.

**Dr William Crumplin** is an assistant professor at Laurentian University, Sudbury, Canada.

**Commander Robert Curtis, RAN** is the Director for Complex Case Services-Navy.

**Captain Jenny Daetz, CSC, RAN** is the Deputy Hydrographer.

**Dr Andrew Davies** is the Director of the Operations and Capability Program at the Australian Strategic Policy Institute.

**Major General Martyn Dunne (Rtd), CNZM** is the New Zealand High Commissioner to Australia.

**Professor Henry Ergas** is Senior Economic Adviser, Deloitte, and inaugural Professor of Infrastructure Economics at the SMART Infrastructure Facility at the University of Wollongong.

**Mr Andrew Forbes** is the Deputy Director (Research) in the Sea Power Centre - Australia.

**Dr Norman Friedman** is an internationally known strategist and naval historian.

**Captain George Galdorisi, USN (Rtd)** is Director, Corporate Strategy Group at SPAWAR Systems Center Pacific.

**Vice Admiral Ray Griggs, AM, CSC, RAN** is the Chief of Navy.

**Mr Noel Hart** is the Chairman of the Australian Shipowners Association and a Commissioner of the Australian Transport Safety Bureau.

**Rear Admiral Liao Shining, PLAN** is a Deputy Chief of Staff.

**Rear Admiral Rowan Moffitt, AO, RAN** is the Head of Australia's Future Submarine Program.

**Lieutenant General David Morrison, AO** is the Chief of Army.

**Commander David Neumann, RANR** is the Deputy Director of Operations for Maritime Trade Operations (MTO) Team 1.

**Rear Admiral Ng Chee Peng, RSN** is the Chief of Navy.

**Dr Alessio Patalano** is a lecturer in War Studies at the Department of War Studies, King's College London.

**Commodore Richard Phillips, RANR** is the Director General Reserves-Navy.

**Commodore Mark Purcell, RAN** is the Director General Technical Seaworthiness.

**Commodore Gregory Sammut, RAN** is the Director General Submarine Capability.

**Mr Stephen Smith** is the Minister for Defence.

**Vice Admiral Scott Swift, USN** is the Commander Seventh Fleet.

**Dr Mark Thomson** is the Director of the Budget and Management Program at the Australian Strategic Policy Institute.

**Professor Geoffrey Till** is Emeritus Professor of Maritime Studies and Director of the Corbett Centre for Maritime Policy Studies at King's College London.

**Captain Frank van Rooyen, SA Navy (Rtd)** is a senior security research fellow at the South African Institute of International Affairs.

# Abbreviations

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AAT	Australian Antarctic Territory
ACV	Australian Customs Vessel
ADF	Australian Defence Force
ADMM+	ASEAN Defence Ministers' Meeting +
AEW&C	Airborne Early Warning and Control (aircraft)
AHS	Australian Hydrographic Service
AIP	ASEAN Information Sharing Portal
AMSA	Australian Maritime Safety Authority
ANZUS	<i>Security Treaty between Australia, New Zealand and the United States 1951</i>
APEC	Asia-Pacific Economic Community
ASA	Australian Shipowners Association
ASEAN	Association of Southeast Asian Nations
C4ISR	Command, Control, Communications and Computing, Intelligence, Surveillance, Reconnaissance
CCAMLR	<i>Convention on the Conservation of Antarctic Marine Living Resources, 1980</i>
DCP	Defence Capability Plan
DDG	Guided Missile Destroyer
DMO	Defence Material Organisation
EEZ	Exclusive Economic Zone
ECDIS	Electronic Charts Display and Information Systems
ENC	Electronic Navigation Charts
ERA	Effective Rate of Assistance
FAZSIO	French Army Forces based in the Southern Indian Ocean
FPDA	Five Power Defence Arrangements
FS	French Ship



HMAS	Her Majesty’s Australian Ship
HMS	Her Majesty’s Ship
HMNZS	Her Majesty’s New Zealand Ship
IFC	Information Fusion Centre
IHO	International Hydrographic Organisation
IISS	International Institute for Strategic Studies
IMO	International Maritime Organization
IONS	Indian Ocean Naval Symposium
IOR-ARC	Indian Ocean Rim Association for Regional Cooperation
ISR	Intelligence, Surveillance and Reconnaissance
IUU	Illegal, Unregulated and Unreported (fishing)
JDS	Japan Defence Ship
JICA	Japan International Cooperation Agency
JMSDF	Japan Maritime Self-Defense Force
km	kilometre
KRI	Indonesian navy vessel
LHD	amphibious ship
LOSC	<i>United Nations Convention on the Law of the Sea 1982</i>
MAN-R	Multi-Agency Network at the restricted level
m	metre
MMEA	Malaysian Maritime Enforcement Agency
MOTS	Military off the Shelf
nm	nautical mile
NATO	North Atlantic Treaty Organization
NZ	New Zealand
OCV	Offshore Combatant Vessel
PACOM	Pacific Command
PC AEM	Coordinating unit for state action at sea
PLAN	People’s Liberation Army Navy
RAAF	Royal Australian Air Force

RAN	Royal Australian Navy
RANR	Royal Australian Navy Reserve
RCC	Rescue Coordination Centre
R&D	Research and Development
RFA	Royal Fleet Auxiliary
RoE	Rules of Engagement
ROKS	Republic of Korea Ship
RSN	Republic of Singapore Navy
RSS	Republic of Singapore Ship
SAF	Singapore Armed Forces
SIPRI	Stockholm International Peace Research Institute
SLOC	Sea Lines of Communication
SM	Standard Missile
SOLAS	<i>International Convention for the Safety of Life at Sea 1974</i>
SSF	Support Service to the Fleet
TNI-AL	Indonesian Navy
UN	United Nations
USNS	United States Naval Ship
USS	United States Ship



PART 1

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# Keynote Addresses



# Congress Opening

Stephen Smith

Chief of Navy, Vice Admiral Ray Griggs; visiting chiefs of navies; distinguished guests; ladies and gentlemen.

I commence by saying how pleased I am to be working so closely with Ray Griggs, Australia's Chief of Navy, as we confront the challenges and opportunities for the RAN into the future.

I warmly welcome the 8 chiefs of navy from overseas participating in this Sea Power Conference, along with representatives from another 35 countries.

I am pleased to be here today at what is recognised as a significant longstanding and important forum. This is particularly relevant today as maritime security moves to the forefront of strategic considerations in our region and beyond. Combined with the Pacific 2012 International Maritime Exposition, we have a unique forum where Navy and defence and maritime industry can showcase their products to an international audience.

I am pleased that as part of the conference, five RAN ships are open for delegate tours, including Australia's newest amphibious ship, HMAS *Choules*, and two frigates, HMA Ships *Sydney* and *Ballarat*, all three berthed at Fleet Base East; together with two coastal minehunters, HMA Ships *Huon* and *Yarra* berthed at Cockle Bay.

The conference theme *Naval Contribution to National Prosperity and Security* is deeply relevant to our region's circumstances as strategic, political, economic, military and maritime weight shifts to the Asia-Pacific region and the Indian Ocean rim. Your deliberations will be of significance to navies around the world and will complement the ongoing dialogue on maritime security in the Western Pacific Naval Symposium, the Indian Ocean Naval Symposium, and the ASEAN Defence Ministers' Meeting (ADMM+) Plus Maritime Security Experts Working Group.

## Historic Shift Towards Asia

In this century, the Asia-Pacific region and the Indian Ocean rim will become the world's centre of gravity. The rise of China is a defining element of Asia's growing influence, but it is far from the only or whole story. Everyone sees the rise of China but the rise of India is still under-appreciated, as is the rise of the ASEAN economies combined. The major and enduring economic strengths of Japan and South Korea also need to be acknowledged. So must the great individual potential of Indonesia - as it emerges from a regional to a global influence.

The ongoing shift in influence is, however, not just about economics or demographics; it is also about military power, including maritime power. The Asia-Pacific region is

home to four of the world's major powers and five of the world's largest militaries - the United States, Russia, China, India, and North Korea. It is also home to many of the world's largest navies - including the navies of the United States, China, Russia, and India. The implications of this historic shift continue to unfold. Some seem to assume that the economic and strategic influence of the United States, the world's largest economy and superpower, will somehow be rapidly eclipsed overnight as a result of the new distribution of power. That is not Australia's view.

In Australia's view, the United States has underwritten stability in the Asia-Pacific region for the past half century and will continue to be the single most important strategic actor in our region for the foreseeable future, both in its own right and through its network of alliances and security relationships, including with Australia. The United States presence in this region is underpinned by the US Pacific Command, which comprises about one-fifth of total US military strength, and includes 6 US Navy aircraft carrier strike groups, 2 Marine Expeditionary Forces and 185,000 naval and marine personnel. An ongoing United States presence in the Asia-Pacific region is essential to peace and stability in our region. Indeed, as the world moves to the Asia-Pacific, it is even more important that there is a United States' presence in our region.

These considerations have informed our discussions with the United States on their Global Force Posture Review. This has acknowledged that our respective military forces must be able to respond in a timely and effective way to the range of humanitarian assistance, disaster relief, peacekeeping or stabilisation contingencies that may arise in our region. Stability in the Asia-Pacific region has enabled economic and social development and prosperity, as well as the creation of a regional framework based on APEC and the ASEAN related fora, in particular the East Asia Summit.

But with the rise of the Asia-Pacific region comes a range of challenges. Tensions have emerged over maritime and territorial disputes. Australia reiterates its national interest, along with the international community, in freedom of navigation, the maintenance of peace and stability, respect for international law, and unimpeded lawful commerce in international waters. Australia unequivocally opposes the use of coercion or force to advance the claims of any party or interfere with legitimate economic activity. Tensions have emerged over maritime disputes in the South and East China seas. More recently Iran's posturing on the Strait of Hormuz has been unwelcome. Australia will match the European Commission's additional sanctions against Iran over its nuclear program, announced earlier this month. Ahead of this announcement, Iran had already threatened to use military force to protect the Strait of Hormuz and we saw the presence of Iranian military assets in the strait. United States, British and French vessels subsequently sailed through the Strait of Hormuz, as they were and are perfectly entitled to do so in accordance with international law. Threats to freedom of navigation in the Strait of Hormuz are of serious concern and

are unhelpful to security in the region. We urge Iran to abide by its international legal obligations with respect to freedom of navigation in international seas.

Sea lines of communication are essential to trade and commerce. Abiding by international law, abiding by law of the sea, abiding by international norms in that respect is very important for trade and prosperity and also for peace and security. And that applies not just to those straits in our region but to other sea lines of communication in other parts of the world.

We do not take a position on the competing territorial claims in the South China Sea and call on nations to clarify and pursue their territorial claims and accompanying maritime rights in accordance with international law, including the *United Nations Convention on the Law of the Sea 1982*. Australia welcomes the agreement last year between ASEAN and China on the set of draft guidelines to implement the *Declaration on the Conduct of Parties in the South China Sea* as the starting point for the resolution of these issues. The Declaration encourages each of the parties to comply with their commitments, to exercise self-restraint and to resolve their disputes through peaceful means. This is a good starting point but more needs to be done.

## India and the Indian Ocean

India's role and place in the 'Asia-Pacific century' continues to be under-appreciated. Australia and the region need to look west as well as east.

India is the largest democracy in the world, and as India assumes the mantle of global influence accorded to it by its democratic status, growing economy and capacity, its strategic weight in the world will naturally increase. India has global interests, but its expanding strategic role has increasingly focused on our shared Asian neighbourhood. The critical strategic importance of the Indian Ocean is also substantially under-appreciated. The countries of the Indian Ocean rim are home to more than 2.6 billion people, almost 40 per cent of the world's population.

The security of its waters goes to the heart of global, regional and Australian strategic interests. The proportion of world energy supplies passing through critical transport chokepoints, including the Malacca Strait, the Strait of Hormuz and the Suez Canal will increase in the coming years. The Indian Ocean already ranks among the busiest highways for global trade. It will become a crucial global trading thoroughfare in the future. Crucial trading routes, the presence of large and growing naval capabilities, as well as transnational security issues such as piracy, drive Australia to put the Indian Ocean alongside the Pacific Ocean at the heart of our maritime strategic and defence planning.

In recognition of this imperative, Australia has joined the Indian Ocean Naval Symposium (IONS), an initiative of the Indian Navy. Australia will host the IONS Conclave of Chiefs in Perth in 2014. India and Australia are also leading the Indian Ocean Rim Association for Regional Cooperation (IOR-ARC), a ministerial-level



forum with membership ranging across the entire Indian Ocean region. With India as the current chair and Australia as the vice chair, we are jointly leading efforts to strengthen regional security architecture, with a particular focus on maritime security. Australia will take over as chair for a two year period, and Indonesia is expected to follow us.

India, Australia and Indonesia can all provide regional leadership through a forum that has much potential to deal with regional challenges. This reflects a natural extension of significant and growing bilateral relationships between the three countries. The IOR-ARC Ministerial Meeting in India late last year agreed to examine renaming the forum, including the option of an 'Indian Ocean Community'. This is consistent with India's and Australia's efforts to lift the organisation to greater prominence.

During my most recent visit to India in December 2011, I agreed with Indian Defence Minister AK Antony that Australia and India would boost defence cooperation, particularly in the maritime sphere. We agreed to strengthen military to military interaction across the navy, army and air force and to establish a 1.5 Track Defence Strategic Dialogue, to be held in Australia this year. Most significantly, we agreed that Australian and Indian officials would work towards establishing a formal bilateral maritime exercise. While in India, I visited Headquarters Western Naval Command in Mumbai, which highlighted the value of enhanced cooperation between our navies. India's and Australia's navies are the two most significant navies of the Indian Ocean littoral states. Both our countries have much to gain in working together to boost maritime security in the region.

Earlier this month, I visited London for the Australia-United Kingdom Ministerial Consultations (AUKMIN). I was pleased to announce that Perth will host the next consultations in 2013, following on from the Commonwealth Heads of Government Meeting in 2011. Perth's status as Australia's Indian Ocean capital makes it a natural choice to host next year's consultations, underlining the growing international importance of the region.

## **The Importance of Regional Architecture**

Australia has greatly benefited from the Asia-Pacific region's long period of peace, security, stability and prosperity. We owe this in great part to the creation and growth of regional institutions like ASEAN and its related forums, institutions that continue to build habits of dialogue and cooperation in the region.

Since coming to office, the government has advocated the need for a regional leaders' meeting which can consider both strategic and security matters, as well as economic matters, with all the relevant countries of our region in the same room at the same time. That is why Australia strongly supported the inaugural meeting of the ADMM+ in Hanoi in October 2011.

That is why we very much welcome the entry of the United States and Russia into an expanded East Asia Summit in 2012. The United States and Russia joined with ASEAN countries plus Australia, China, India, Japan, New Zealand and the Republic of Korea. In that context I am looking very much forward to meeting with Russian Foreign Minister Sergey Lavrov later this morning.

Presidents and prime ministers, foreign ministers and defence ministers from all key countries in the region now meet to discuss the full gamut of issues, from the economy and trade and investment through to peace and security.

Australia is pleased to co-chair with Malaysia the maritime expert working group of the ADMM+. The establishment of the ADMM+ offers real opportunities for practical military to military and defence to defence cooperation, including for disaster relief and humanitarian assistance.

Another important regional security forum is the Five Power Defence Arrangements (FPDA), which brings together Australia, Singapore, New Zealand, Malaysia and the United Kingdom. The FPDA was established in 1971 to provide transitional security assurances for the newly formed independent states of Malaysia and Singapore. As their defence capabilities increased, the Arrangements have developed into a forum for continued multilateral defence interaction between members. Today, the FPDA retains conventional capabilities while also adapting to deal with modern non-convention challenges, such as counter-terrorism, maritime security, humanitarian assistance and disaster relief.

## Modern Navy

This is an historic time for the RAN. In the coming years we will see it reach a level of capability it never previously contemplated. A strong, capable and versatile navy able to undertake the full spectrum of operations is a key element of any maritime nation's strategic planning.

The 2009 Defence White Paper included a significant focus on enhancing our maritime capabilities for the 21st century.

Australia's amphibious capability received a major boost with the commissioning last month of *Choules*, named after former Chief Petty Officer Claude Choules. It weighs 16,000 tonnes and its cargo capacity has the equivalent of HMA Ships *Manoora*, *Kanimbla* and *Tobruk* combined. Its flight deck has room for 2 large helicopters and can also carry around 150 light trucks and 350 troops.

Later this year the hull of the first *Canberra* class amphibious ship (LHD) will arrive in Melbourne. The LHD will be the largest ships the RAN has ever had. Each ship is capable of carrying a combined armed battlegroup of more than 1100 personnel, 100 armoured vehicles and 12 helicopters, as well as a 40-bed hospital. The introduction into service of these ships will mark a significant change in the way the Australian Defence Force (ADF) deploys its land forces and conducts amphibious operations.

The conduct of amphibious operations will be further strengthened through the implementation of Plan Beersheba, a major restructure of the Australian Army announced by the government last month. Plan Beersheba will ensure that Army is able to respond effectively to future challenges, including humanitarian assistance and disaster relief and other operations. It includes the dedication of the 2nd Battalion, Royal Australian Regiment to form the core of Army's contribution to a future amphibious force capable of conducting humanitarian and disaster relief and other operations, particularly in our immediate region. Army is working closely with the RAN to enhance amphibious interoperability, in particular in operations with the LHD, *Choules* and other amphibious platforms.

Other major maritime capabilities already under construction or planned in the 2009 Defence White Paper include new destroyers, manned and unmanned long range surveillance aircraft and a range of important new or upgraded capabilities, including naval weapons and communication systems.

The Air Warfare Destroyer project is the most complex naval ship construction program ever undertaken in Australia. When complete, the *Hobart* class DDG will be one of the most capable types of warship of its size in the world. The three ships will provide advance air defence against missiles and aircraft for self-protection, as well as for other ships and for land forces in coastal areas.

In 2014, the first two of 24 MH-60R Seahawk 'Romeo' naval combat helicopters will arrive in Australia. Acquisition of 24 Romeos will allow the RAN to provide at least eight warships with a combat helicopter at the same time, including the *Anzac* class frigates and the new *Hobart* class destroyers. They will be equipped with a highly sophisticated combat system designed to employ Hellfire air-to-surface missile and the Mark 54 anti-submarine torpedo.

All eight *Anzac* class frigates are being upgraded with an advanced anti-ship missile defence system which is able to identify, track and guide missiles to multiple targets at the same time at a cost in excess of \$650 million. The upgrade of HMAS *Perth* as the lead ship for the program was successfully completed in 2011 and the installation of the system on the remaining seven ships of the class will be completed by 2017.

## Future Submarines

The government is committed to acquiring 12 new Future Submarines, to be assembled in South Australia over the coming 3 decades. The Future Submarine project will be the largest and most complex defence project ever undertaken by Australia. The project is a major national undertaking and is of a scale, complexity and duration never before experienced within Defence. Options for the Future Submarine range from a proven military off the shelf design through to a completely new submarine. All options are being considered, other than nuclear propulsion which the government has ruled out.

Last month I announced that a series of important steps were underway, including that government had approved the release of requests for information to three overseas submarine designers, and that Defence had entered into a contract with Babcock for a study into a land-based propulsion site. In addition I announced the development of a Future Submarine Industry Skills plan. The government will consider the Future Submarine project early during the course of this year and more announcements will follow in due course.

## Lessons Learnt

These are challenging times for Defence and the RAN in particular. Problems with the availability of our ships and submarines have seriously impacted on naval capability. A lot of progress has been made but there is still more to be done. Nearly 12 months ago when Cyclone Yasi hit north Queensland, Defence was unable to provide amphibious ships to support the recovery and response efforts. I, like many Australians, was very disappointed by this lack of amphibious capability in a time of national need. I made it very clear to Defence that this was an unacceptable situation that could never be allowed to happen again.

Since February 2011, the government has undertaken a range of reforms and measures to address the issues with Navy's amphibious fleet. In April 2011, the government purchased RFA *Largs Bay* from the British government and last month it was commissioned as HMAS *Choules*. In addition, *Tobruk* underwent a period of scheduled maintenance to make it ready for sea. Over the past 12 months Defence has also undertaken a series of commercial leases to augment the Navy's amphibious capability. Subsea Operations Vessel *Windermere* will today complete its operations as an additional support vessel for the cyclone season. Last month as well I announced the government's decision to purchase an additional humanitarian and disaster relief ship to provide additional support to *Choules* and *Tobruk*.

In the face of a gap in our amphibious capability, I commissioned Mr Paul Rizzo to develop a plan to improve the maintenance and sustainment of our naval fleet. His report identified a number of significant issues and made 24 recommendations to improve operational availability and outcomes to ensure the ongoing technical integrity of Navy's ships. The recommendations of that report are being implemented.

The *Collins* class submarine fleet remains our most significant sustainment challenge. In December 2011 I released the report of Phase 1 of the *Review of the Sustainment of Australia's Collins Class Submarines*, the Coles Review. This Review is examining complex engineering issues associated with submarine sustainment. It will play an important role in guiding improvements to the way our *Collins* class submarines are sustained into the future in much the same way as the Rizzo Report is doing for the Navy's amphibious fleet.

Phase 2 of the Coles Review will report in April this year and focus on: integration and program management, commercial, engineering reliability and Navy, and costing. In Phase 2, the review team will gather and analyse data to put forward well-evidenced findings and recommendations on how to improve performance in *Collins* submarine sustainment. Lessons learnt from the Coles Review will also play an important role in the development of the Future Submarine project.

The lessons learnt from the challenges we have faced in the past, and the outcomes from the Rizzo and Coles reviews, will be applied to future acquisitions and future sustainment. This includes projects already underway, such as the Future Submarines, as well as future projects to provide essential naval capabilities, including supply and logistic ships, frigates and offshore combatant vessels.

## Reform

The reforms I have referred to are specific to the RAN, but in the past 12 months the government has initiated a range of major reforms to improve the acquisition and sustainment of military equipment.

These include increasing the rigour of the *Defence Capability Plan*; improving contestability in capability decision making; the establishment of an Independent Project Performance Office; introduction of an 'early warning system' to identify problems in projects before they become critical; the extension of 'gate reviews' to all major capability projects; and more rigour in the 'projects of concern' process.

It is important that we get our capability development and acquisition process right. Last year the government approved a record 46 first pass, second pass and other major project approvals with a combined total value of the projects in excess of \$6 billion.

In order to realise the full potential of the capability Australia is acquiring in the coming decades, we need to ensure the ADF is correctly geographically positioned.

## US Global Force Posture Review

The US Global Force Posture Review was established to ensure the United States could respond to current and likely future changes in the international security environment. It seeks a politically sustainable, operationally resilient, and geographically dispersed US force posture.

The United States considers its engagement in the Asia-Pacific region to be an increasingly important strategic priority given the region's location between the Pacific and Indian oceans, its proximity to vital strategic sea lanes, and increased great power interest in the area.

One of the key Force Posture Review priorities for the United States is to increase engagement with Australia and its partners in Southeast Asia, and to strengthen regional confidence in US engagement in the region.

We have seen that reinforced by President Obama's commitment to enhancing US engagement with the Asia-Pacific region during his visit to Australia and more recently in the United States. In his speech to the Australian Parliament in Canberra, President Obama committed the United States to making its 'presence and missions in the Asia-Pacific a top priority', while at the same ensuring that 'reductions in US defence spending will not come at the expense of the Asia-Pacific'.

The President reiterated the US commitment to the Asia-Pacific region with the release of their new strategic guidance document *Sustaining US Global Leadership: Priorities for the 21st Century* in January, and Secretary of Defense Panetta confirmed that the US enhanced commitment to the Asia-Pacific region would be quarantined from US defence budget cuts in his announcement last Friday of the *Defense Budget Priority and Choices*.

Prime Minister Gillard and President Obama announced during the President's visit to Australia new force posture initiatives that significantly enhance defence cooperation between Australia and the United States. Coming on the 60th anniversary of the ANZUS Alliance, these initiatives strengthen an already robust partnership that has been an anchor of stability and peace in the Asia-Pacific region.

Starting this year, Australia will see the rotational deployment of US marines to Darwin and northern Australia, for around six months at a time, where they will conduct exercises and training on a rotational basis with the ADF. The initial deployment will consist of a small liaison element and a company of 250 marines, which will expand over the coming 5-6 years to a rotational presence of up to a 2500 person Marine Air Ground Task Force. The marines will exercise and train on a rotational basis with the ADF in the Northern Territory.

The increased training and exercising with the marines will be an important opportunity for the ADF to build and refine its amphibious capability as the LHD come on line and as the ADF implements Plan Beersheba.

As part of our ongoing work with the US on its Global Force Posture Review, we will also examine the possibility of increased US access to Australia's Indian Ocean port, HMAS *Stirling*.

## Australian Defence Force Posture Review

It is equally essential that the ADF is correctly geographically positioned to meet future security and strategic challenges. That is why I announced the Force Posture Review in June 2011.

The Review is addressing the range of present and emerging global, regional and national strategic and security factors which require careful consideration for the future. These strategic and security factors include:

- the rise of the Asia-Pacific as a region of global strategic significance
- the rise of the Indian Ocean rim as a region of global strategic significance
- the growth of military power projection capabilities of countries in the Asia Pacific
- the growing need for the provision of humanitarian assistance and disaster relief following extreme events in the Asia-Pacific region
- energy security and security issues associated with expanding offshore resource exploitation in our north-west and northern approaches.

The Force Posture Review will feed into the 2014 Defence White Paper [subsequently brought forward to 2013].

The last time we did something of this significance was in the 1980s when Paul Dibb and Robert Cooksey did some work for one of my predecessors, Kim Beazley, that informed the 1987 Defence White Paper and its outcomes. Those reviews resulted in the establishment of some of our so-called bare bases, RAAF Scherger in Queensland for example and also saw the move of some of our naval assets and submarines to *Stirling* (Fleet Base West) in Western Australia.

The need for an ADF Posture Review is driven by our strategic circumstances. Australia's strategic interests are overwhelmingly positioned to the north, the north-west and north east, and to the Indian Ocean rim. A 'Brisbane Line' disposition of navy, army or air force assets does not reflect the reality of where the ADF must operate, whether for military operations or humanitarian assistance and disaster relief, or other contingencies. It is essential to consider whether the ADF is appropriately geographically positioned to respond in a timely way to Australia's strategic and security demands. Two of our leading national security experts, Allan Hawke and Ric Smith, both former secretaries of the Department of Defence, are overseeing work on the Force Posture Review.

Yesterday, I released their progress report, which is essential and compulsory reading for the RAN and anyone interested in the navy.

The progress report offers a range of thoughts and options on how the ADF could be better geographically positioned to respond in a timely way to Australia's strategic and security demands. It points to the Asia-Pacific century as reinforcing the need for a force posture that can support operations in Australia's northern and western approaches, as well as operations with our partners in the wider Asia-Pacific region and the Indian Ocean rim.

The progress report points to expanding maritime capabilities as significantly influencing Australia's future force posture. Joint amphibious capability is envisaged as having a transformational effect on navy, army and the ADF generally, driving force posture considerations.

They also examined possible basing options in the north and north-west of Australia and the possibility of arrangements that enhance access to commercial ports, highlighting the potential for greater wharf capacity and support facilities at Fleet Base West to support major surface combatant capability and operations.

They noted that while Fleet Base East remains a highly effective homeport location for the RAN, in the future, the impact of encroachment pressures on its presence in Sydney could present increasing challenges and that an additional fleet base in a location like Brisbane could complement and relieve that pressure.

As Allan Hawke and Ric Smith wrote to me in their covering letter forwarding the report: 'In our view, Navy faces the greatest challenges in accommodating the practical and conceptual changes required ...'. I agree with that.

That challenge is reflected by their preliminary conclusions as they relate to Navy:

- While permanent navy bases in the north-west are not operationally necessary given the availability of bases at Perth and Darwin, there is a case for Defence to pursue improved access arrangements at commercial ports such as Exmouth, Dampier, Port Hedland and Broome.
- Defence to increase the prominence of the Fleet Base West command and upgrade the current rank level of the Commanding Officer HMAS *Stirling* from Captain to Commodore in view of:
  - the prominence of the ADF and Navy presence in Western Australia
  - the increasing importance of the Indian Ocean and the need to support whole-of-government and international engagement efforts.
- Defence to proceed with its plans to homeport the DDG and LHD at Fleet Base East in the short term but also develop additional options as set out below.
- Defence to develop options to expand wharf capacity and support facilities at Fleet Base West to:
  - support major surface combatant capability and operations by:
    - providing adequate infrastructure and facilities, including missile loading and maintenance facilities, to homeport at least one DDG as well as the Future Frigate



- providing facilities that are also able to be used for deployments and operations in Southeast Asia and the Indian Ocean by US Navy major surface combatants and aircraft carriers.
- support submarine capability and operations by:
  - enabling Fleet Base West to continue as the primary submarine homeport when the expanded Future Submarine fleet enters service
  - providing facilities that are also able to be used by US Navy nuclear-powered submarines.
- Defence to develop a long term option for establishing an additional east coast fleet base for the LHD and/or Future Submarine, noting that Brisbane is:
  - well provided with industry capacity for maintenance, repair and sustainment
  - closer to mounting bases (for embarking land forces) and likely operating areas in the archipelago to our north and the South Pacific
  - out of the ‘cyclone belt’
  - located in a nuclear powered warship-rated port, to facilitate US Navy visits.
- Defence to plan to expand the capacity of bases at Darwin and Cairns to accommodate the new offshore combatant vessel (OCV) and replacement heavy landing craft, noting:
  - the scale and cost of any expansion at Darwin and Cairns would depend on the final size of the OCV
  - the OCV will also need to be postured for its mine countermeasures and hydrographic survey roles.
- Defence to develop a more consolidated long term master plan for meeting Navy’s Force 2030 basing requirements, which also addresses the implications of increased US activities and presence in Australia.

And in the context of the ADF’s joint amphibious capability:

- Plans for developing an amphibious mounting base capacity at Townsville are appropriate and on track.
- Defence to develop an alternative amphibious mounting option for Darwin that includes the development of roll-on, roll-off loading

facilities at East Arm wharf, rather than rely on embarkation and loading via watercraft (noting the benefits for the ADF and future US marine rotations through Darwin).

- Defence to develop options to allow large amphibious ships to embark Army units based in Brisbane and (as a lesser priority) Adelaide, in addition to Townsville and Darwin.

More broadly, the Review is also examining logistics support requirements, training areas for large-scale and joint training exercises, demographic and economic factors, public communications strategies, and engagement with industry, particularly the minerals and petroleum resources industries in Australia's north and west.

The Review's final report will be submitted to the government at the end of March 2012. The government will then closely examine the Force Posture Review, which will form part of the security and strategic considerations for the 2014 White Paper [now 2013].

A closely related independent review, also being undertaken by Allan Hawke, is examining the future use of the naval docks at Garden Island in Sydney by visiting cruise ships. This review is assessing whether there is scope to enhance cruise ship access to Garden Island without adversely impacting on its priority role of supporting naval operations. The review will focus on the opportunities for greater civil-military cooperation in the use of finite berthing resources for very large vessels in Sydney. I expect to receive this review early next month.

## Concluding remarks

The Asia-Pacific is a region in strategic flux. The changes in our immediate region present a number of strategic challenges for Australia, but also enormous opportunities in the years ahead.

Australia sees the continued and enhanced presence of the United States as fundamental to ensuring the continuation of the security and stability in our region that has underpinned the economic growth and prosperity in the post-World War II period. Australia will continue to play a role in ensuring the security and stability of the region, including with our Alliance partner the United States.

Fundamental to this is the need to have strong, modern and capable naval and maritime capabilities able to respond to the full range of challenges ahead. As we look to the future, it is vital that we heed the hard lessons learnt over the past few years in preparing for the future.

As we increasingly recognise the importance of maritime security, I wish you well in your discussions on the challenges facing navies and the broader maritime community in the future, in the Asia Pacific region and beyond.



# Chief of Navy

*Ray Griggs*

May I extend a very warm welcome and express my sincere thanks to my fellow Service chiefs David Morrison and Geoff Brown for taking the time to come and speak this morning. In 2010 our predecessors did something similar and it made an enormous impact. I thought it was a great initiative then and something that I was very keen to see repeated, primarily because there is very little that Australia does militarily that is not fundamentally a joint endeavour. The maritime domain more than any other relies on joint effects to realise the objectives we seek to achieve.

As the chiefs, we represent the interests of our respective combat arms of the Australian Defence Force (ADF), but we do that with an inherently joint outlook. The joint journey for Australia was initially largely one of financial necessity; we could not afford to duplicate capabilities that were used exclusively in one domain or by one organisation. As we progressed it became ever more clear, as it has to many other defence organisations, that the power of a joint combat approach had its own compelling logic. We have managed to move through a number of phases in our joint development to the point where you will have a Service chief arguing for a capability for another Service because of its inherent value to the joint force - even at times at the expense of another preferred capability for their own Service. When you reach that point you know you are well along the path to truly jointly focused warfighting.

Today, though, I want to talk about the theme of this conference, the naval contribution to national security and prosperity. Why, in an island continent do we feel the need to have a conference with this theme, after a couple of centuries of absolute reliance on the sea for both our security and prosperity. How is it not deeply embedded into the psyche of this nation?

Well, firstly, we are not alone in facing this dilemma. Our British friends coined the phrase 'sea blindness' a number of years ago to describe what was considered a lamentable lack of understanding by the British public of the sea and the importance of the navy. The term has been picked up in other places such as India and it is fair to see it is a condition that we suffer from here in Australia. It is confounding that many Australians observe an array of merchant ships at anchor off Australian ports like Newcastle, but do not make the connection to our national wealth. Of course, compounding this is that much of our merchant traffic loads and discharges in our sparsely populated north west coast, largely unseen by the public, but just as unrecognised are the oil tankers that bring the petroleum on which our internal economy depends.

The truth is that most seaborne activity is invisible to the average citizen and the relationship between the assured use of the oceans and our national prosperity - indeed our national survival - is not something that penetrates the consciousness of most. Perhaps running the 'supermarket shelves' test is the best way to make the point. Take everything off the shelf that has in some way been reliant on sea transport and see what is left. Partly this problem exists because of the nature of maritime work. Much of what maritime industries - shipping, fishing and offshore resource exploitation - as well as what the navies that protect them do happens out of sight of land. All too often it is also out of mind. This presents a perennial challenge for all navies, just as it does for maritime industry. We have had a recent lesson in the tragic loss of the Italian cruise liner *Costa Concordia*. The graphic images of the half sunken hull gained much more attention than had the day to day activities of a vast worldwide industry, carrying millions of people every year with a previously good safety record.

At its core it is the RAN contribution to good order and discipline at sea that is critical. Our ability to use the the sea safely for own national interest and - vitally - for our mutual benefit is the key issue. There is very much a national dimension to this. After all, it is our economy that is at issue. But the importance of alliances, partnerships and coalitions in the maritime domain is fundamental, given that we are all reliant on global trading routes which no single navy can police or control. In that respect I am very pleased to see the large number of overseas delegations, chief of navy counterparts and senior representatives here this week - your contribution to this debate is vitally important.

The principal intellectual construct we use when describing this challenge is the notion of sea lines of communication, or SLOC. Historically, this is exactly what they were, the routes connecting nations and empires on which people, material and information was carried - it was, of course, for maritime nations, the only means of communicating. Today the only real sea lines of communication are the undersea cables that carry internet traffic and e-commerce. The traditional surface SLOC are really lines of trade or, in keeping with this conference, lines of prosperity. One thing we might ask ourselves this week is whether SLOC as a term actually does us any favours in articulating navies' contribution to security and prosperity - is it time to find a more contemporary term that better describes what we are talking about?

I see here a parallel to the way in which, for a while in the dot com boom, the 'old economy' was neglected and decried in favour of the emerging wonders of the digital universe. Inevitably, the realisation had to come that those who operate in an electronic world must have a material existence as well. When people now talk of 'communications', particularly the young, the conscious and unconscious association is with electronic transmission and the speed of light. We need to find new ways of describing the maritime world of ships and cargoes and our utter dependence upon their safety and movement that succeed in conveying the realities

involved of mass, scale and time. If I may put a challenge out to present day thinkers and writers on maritime strategy, it is for them to devise arguments that can get this message to the national audiences of 2012.

Sticking to current nomenclature, though, SLOC security really endures as the main maritime game. Freedom of navigation along those SLOC remains one of the central tenets that nearly all of us here hold dear. When I use the term freedom of navigation, I use it in its broadest sense, it is not simply a discussion regarding state interpretations regarding maritime jurisdictions but the ability to navigate on the global commons on lawful business in lawful ways without interference. Through the *United Nations Convention of the Law of the Sea 1982* we have developed a legal architecture to help us manage this.

From a naval perspective the maintenance of our security and prosperity is achieved through three key activities: sea control, sea denial and maritime power projection. Going back to my opening comments, for any small to medium sized defence force, these are not the purview of the navy alone. For some reason we have not been good at articulating these elements of naval strategy. All too often they are seen as independent rather than highly interdependent activities. This is where much of the commentary comes unhinged, particularly on the balance required in our overall force structure.

Notwithstanding, sea control is the primary naval task in SLOC security. It spans all levels of operational intensity from peacetime constabulary tasks, where it is as much an interagency activity as a naval one, through to high end war-fighting. It is time consuming because it is largely about creating conditions for the use of the sea - that requires sustained presence. It applies equally to major trading routes, to maritime chokepoints and, in our own exclusive economic zone, around our critical offshore infrastructure and resources.

Sea control is often localised either geographically or temporally - it is about allowing the use of the sea area involved, not dominance just for its own sake - but what it needs to be effective is a balanced force structure. Successive Australian governments have endorsed a balanced force structure for the ADF and, in particular, for the RAN. There are those who argue for more specialised force structures, most often these structures are built around denial capabilities. The reason these pundits have never got sustained attention, nor their ideas much traction, is that their proposals introduce additional and unacceptable levels of strategic risk and they fail to understand the inter-connected nature of these maritime concepts. For example, many components of the force structure of the Royal Australian Air Force (RAAF) have a key role in sea control, particularly the maritime patrol aircraft, airborne early warning and control aircraft, tankers, the fighter force and, in the future, the high altitude long endurance unmanned aerial vehicles - they are all a key part of the balance required for sea control.

Sea denial is, of course, an important option to have available strategically, but alone this approach cannot guarantee our SLOC and thus cannot underwrite our national security. For a maritime nation such as Australia there is a need to use the sea and not just to deny its use. Sea denial is in fact very much a concept that operates at the higher end of the operational intensity spectrum and one that in our strategic circumstances would invariably be used in conjunction with sea control. Again, it is not solely conducted by the navy; both RAAF and special forces have distinct roles. Sea denial is also not solely, in naval terms, about submarines, nor is it purely or necessarily a defensive strategy. Furthermore, offensive sea denial against an adversary in that adversary's back yard requires assets with the appropriate reach and endurance.

Maritime power projection is a critical capability for the ADF, particularly in its regional role of contributing to the security and stability of the South Pacific and East Timor. At its heart is the delivery of force from the sea, be that through naval bombardment or the use and support of land forces in an amphibious activity. Power projection does not always involve the use of military forces in a 'hard power' way. Humanitarian assistance and disaster relief of course is a manifestation of the same foundation techniques and capabilities used for harder edged power projection missions in getting capabilities where they are needed, when they are needed.

All three Services play vital roles in maritime power projection, but army and navy in particular must operate hand in glove in this domain. What we are seeing now is a fairly rapid maturation of a relationship that has been developing over the last 30 years. The catalyst for that maturation is of course the quantum leap in capability that we will see with the arrival of the *Canberra* class amphibious ships (LHD) in 2014. At this conference two years ago, the then Chief of Army gave a very clear indication of where Army was headed. The current Chief has taken that vision and started to turn it into reality with the recent announcement that the 2nd Battalion of the Royal Australian Regiment will, in effect, form the nucleus of an amphibious battle group. Through the Joint Amphibious Council, which the Chief of Army and I co-chair, we are seeing significant movement towards where we need to be.

The LHD will be a truly joint capability and their introduction into service is already testing us on a number of levels. In the RAN the worst thing we could do is to think that 'we know boats'. There is a level of complexity in the LHD that we have not seen at sea since operating the aircraft carrier HMAS *Melbourne*. There are very few of us left who served in *Melbourne* and most of us were very junior officers or junior sailors at the time. HMAS *Choules*, our newest warship, is a magnificent capability bridge to the LHD. She brings with her a dock and electric pod propulsion - something we can gain experience with over the next couple of years in the lead up to the first LHD. Until then, both *Choules* and HMAS *Tobruk* will play their role in preparing the navy and the army for this transition.

But the tendrils of the maritime power projection issue extend much more deeply into the defence organisation. The Vice Chief of Defence Force has the task of being the 'Joint Capability Authority' and making sure that all the other aspects that will make the ADF amphibious capability work are in train. We are all very focused on ensuring that the transition to the new force is smooth.

But what we must not do is to think that this is the sole focus for the ADF's endeavours over the decade. The amphibious capability is a game changer; it will challenge the way we have operated amphibious capabilities and change the way we train as an ADF, but it is not the only game in town. There are several other major maritime capability developments that will require a deal of effort.

In the maritime context, and for the RAN in particular, the introduction of the *Hobart* class destroyers (DDG), a key sea control and power projection capability, will also bring with it significant challenges as we get back into the area air defence game. The interaction with RAAF airborne early warning and control aircraft and eventually the joint strike fighter (F-35) capability will be critical if we are to optimise the joint effect that is available for us. More specifically for the RAN, the development of the offshore combatant vessel over the coming years will challenge some entrenched positions and, of course, the vigorous debate we have seen over the last few months regarding the future submarine is but a taster of the national level challenges that lie ahead of us. All this falls coincident with our single greatest focused effort on rebuilding and reinvigorating our engineering capabilities and technical workforce and restoring the importance of technical integrity. We are doing this through embedding a unifying seaworthiness construct and ensuring that our culture continues to develop to what is required to attract and retain our people in a contemporary war-fighting navy.

I know that many of the other navies and services represented here are facing a range of challenges just as complex. And I think that we have much to learn from each other. At the end of the day, the best way for us to maintain our collective security and prosperity is for us to understand each other's needs and interests. To do that we need to talk and interact, we need to exercise together and operate together on the global commons. We need to continue to embrace the notion of maritime security as a collective maritime endeavour, as we have seen around the Horn of Africa. There may be different models at work in achieving that purpose, but all of us involved share the same aim.

Underpinning all this is the continued importance of the development and maintenance of maritime domain awareness, our ability to see and understand what is happening around our coasts and out at sea. Technology is clearly becoming an enabler for improvements in maritime domain awareness for all. We are now bumping up against other constraints which are more human in nature, the need to know battles the need to share. It is a significant challenge for us all but one that we can overcome.



I have attempted to set the scene from an Australian naval perspective and I am looking forward to hearing the other Service chiefs. There are some fascinating sessions planned for the remainder of the conference. I hope that they generate some robust and constructive discussion and help us all better articulate to our respective countries the importance of the naval contribution to security and prosperity.

# Chief of Army

*David Morrison*

Firstly, Ray thank you for the opportunity to participate in the keynote session of this prestigious and influential conference on maritime affairs. It is wonderful to be invited to address this gathering and to share the platform with you and Geoff Brown. I think it sends a powerful message about the importance that all three Services place on this event - and by implication, on joint operations in the context of maritime strategy.

What is clear is that no small part of my job is too small for the opportunities, such as this, to be as clear as possible about Army's focus and how it contributes to national defence and security. So let me make two definitive statements as a prelude to my main theme in today's address.

First, Australia needs its Australian Defence Force (ADF) more than it needs its navy, its army or its air force if it is to possess robust military options now and in the future. It is about being a joint force and Army knows that. Second, the foundation to Australia's national security is a maritime strategy. That has been articulated and re-articulated in a series of Defence White Papers. But a maritime strategy is not a naval strategy, it is a joint, indeed an interagency, and perhaps coalition strategy and Army has an essential role to play if that strategy is to continue to have relevance in the coming decades.

My purpose today is to describe what I see as Army's role in that maritime strategy and to provide an insight into how we are marrying our doctrinal and force development planning, to government's direction and guidance, in order to be capable of executing the strategic tasks allocated to us.

At its heart, Army needs to be able to deploy force elements, by air and by sea, with the requisite joint military capabilities to meet the operational challenges it will encounter, sustain that commitment until acceptable conditions are achieved, rotate forces if required if the operation proves to be protracted and then to redeploy to home locations. While that has been our history, such a capacity has not always been resident in the Army of the day, nor achieved with real effectiveness and efficiency.

Nonetheless, the many significant operational lessons learned by this generation of soldiers over the last 12 years particularly, allied to the introduction into service of a range of joint capabilities that will occur in the next two decades, will ensure that Army has the potential to be a key contributor to achieving national security through the application of a maritime strategy. For the remainder of my address, I want to focus on how that potential will be realised.

The Australian Army's reputation and identity was forged at Gallipoli - one of the most famous amphibious operations of the 20th century - which, while bold in conception, lacked much in execution. It is uncontroversial that Australia's grand strategic practice since Federation has involved contributing joint military forces to coalition operations to support a favourable global order maintained by the dominant maritime power of the day - in turn Britain, followed by the United States.

The relatively small size of the Army at times encourages an almost tactical level thinking about its employment when, in reality, Australian statecraft has made frequent and diverse use of land forces over the past century. For a middle power like Australia, the use of strategic land power is not so much related to size and mass, but rather to effect and objective. When judged against these criteria, it is clear that Australian policy has, since 1942, used elements of land power for strategic purposes more frequently than any other military instrument, particularly in our primary operating environment.

In the light of that history it is somewhat surprising that we have to relearn amphibious operations again - pretty much from first principles. The explanation for this I believe is that for much of history the three Services developed much closer ties with the equivalent services of our allies than they did with the other elements of the ADF.

This has not been entirely our fault. Governments of all persuasions have - quite appropriately - provided niche force contributions all over the globe in support of our alliance arrangements. More often than not this has involved penny packeting of niche forces with the result that we have developed both operational and joint expertise - but not with one another.

However, the strategic shock of East Timor in 1999 threw us back together and since that time I believe we have made great strides in developing joint concepts, joint doctrine and - most difficult of all - a truly joint mindset and culture. But we all recognise that we face enormous challenges in developing the forces provided by our strategic guidance, and the doctrine and command and control arrangements to effectively employ them across the spectrum of operations.

In that respect Ray, I am indebted to you for a valuable insight from your speech to the Australian Strategic Policy Institute last month. You cautioned the RAN against complacency and warned that the introduction of the new amphibious capability is anything but routine, especially in light of the evolution of a frigate culture within your Service over the past three decades.

For my part I am concerned that Army has become mired in a belief that the RAN and Royal Australian Air Force (RAAF) only provide strategic lift. This incorrect attitude limits our ability to conceive of 'entry by air' and 'sea operations' in anything but the most permissive environment. I have echoed your warning to my own Service, Ray - we cannot afford to think of the LHD as merely a transport capability. Rather

they are an integral part of a combat system with unique, and unprecedented, command and control and sustainment challenges. Indeed the acquisition of the LHD represents not only far greater technical complexity in the operating systems than we as a defence force have previously experienced, but it will introduce a far greater complexity into the joint training, scheduling and integration across and between services than we have ever needed to achieve in the past. It means that all parts of Defence activity are going to be affected and will need to adjust. But we, Army, are up for the challenge. I want to own the solutions and have indicated on this slide the price of my 'buy-in'.

Lord Edward Grey once eloquently argued that the British Army needed to be 'a projectile fired by the Navy' - a quote, while popularised by Jackie Fisher, is often mistakenly ascribed to him. I am very fond of that quote as it provides an aiming mark for me and my force developers as we seek to create the land component of the joint amphibious capability. The weapon system of the new LHD is in fact the embarked force, and the true capability is the joint effect delivered through army, navy and air force within the Amphibious Task Group.

In the remainder of my time I would like to outline where Army is at in the development of amphibious capability and some of the hurdles that we need to negotiate in my time as Chief of Army.

The key internal factor that will determine Army force generation are the changes to our brigade structures under Plan Beersheba. It is no coincidence that the Minister for Defence publicly endorsed this plan at the same time as he commissioned HMAS *Choules*, in December 2011; the two are inextricably linked. Under Plan Beersheba the Army is developing multi-role combat brigades. This is an overdue development. For too long we maintained single capabilities within brigades with deleterious effects on our force generation and career planning cycles. This was inefficient and probably harmed retention as well. The development of the standard multi-role brigade will enable Army to reach the objective initially set in the 2000 Defence White Paper for us to be capable of providing a brigade for sustained operations within our primary operating environment. It also allows us to develop forces of a combat weight commensurate with the level of threat in the modern battlespace. The force generation implications of this are profound and will ensure that we meet our obligation to the government, and the remainder of the ADF, to be able to undertake sustained joint operations both in the littoral approaches to Australia and throughout the immediate neighbourhood.

Much of the responsibility for raising, training and certifying land forces capable of amphibious operations falls squarely within my remit. But I well understand that it is vital that I collaborate closely with the Vice Chief of Defence Force as the ultimate 'Joint Capability Authority' as there are some enabling functions that are not apparent in this process or fall between single Service functions.

I have announced that I will commit an Army Battle Group, based on our 2nd Battalion and including a cross section of combat and enabling capabilities from across Army, to the development of a truly amphibious capability. The training required to prepare Army to conduct combat operations as an integral part of a joint amphibious team is substantial, and is not be underestimated. New skills and training techniques will need to be developed and sustained, and importantly a new culture and outlook for our role in the region grown and matured.

In any event, the development path of the Army and ADF since the East Timor intervention in 1999 has assumed the existence of a rapidly deployable battle group reinforced by a follow-on multi-role combat brigade. The recent changes that I announced with regard to the transfer of the parachute capability from the conventional force to the Special Operations Command and the allocation of a dedicated amphibious battle group conform perfectly to this strategic guidance. Army will have a robust force generation cycle for contingency and sustained operations built around a rapidly deployable battle group trained and enabled for entry operations across our region, intimately supported by special force operations. We are well on the way to getting the fundamentals right.

However, I do acknowledge, that like the RAN we are entering uncharted waters - no pun intended. From the outset we (all three Services) will need to carefully develop and formalise an unambiguous, robust and permanent command and control structure, supported by doctrine, to plan and command amphibious operations in all likely operational contingencies. Previously, we have been able to adapt rapidly and get it 'right on the night' in East Timor and Solomon Islands. Our excellent people and culture facilitated this, though it was triumph of improvisation rather than professional mastery.

My predecessor, Ken Gillespie, noted at this conference in 2010 that the Australian Army had no standing Commander Landing Forces, nor was there a designated organisation to command and control amphibious training and operations. That deficiency has been rectified with the nesting of a dedicated command and control element with the Deployable Joint Force Headquarters and it is an important development.

Army, and the ADF's, doctrine and training centres need to now adapt to meet the needs of the capabilities and roles upon us. Our culture needs to be expeditionary in nature, taking account of the new and significant force projection capability, with a permanently embarked land combat force. The future generations of Army officers will be trained and exposed to amphibious operations from the outset of their careers, as a central pillar to how we fight. This will require an agile and joint mindset that we cannot claim to possess across the entire force at present.

Likewise we will be required to operate every one of our armoured and aviation platforms from the LHD simultaneously and across a spectrum of threats. Our array of complex communications and surveillance systems must now

be considered primarily within the amphibious environment. The logistic challenges of operations afloat are unique and substantial. Army must urgently come to grips with maintaining and sustaining a whole range of land equipment in a maritime setting.

The RAN and our allies, in particular the United States Marine Corps, have considerable expertise upon which to draw. Australian Army officers are conducting training with our Allies in the United States and the United Kingdom. We have not yet come to grips with the logistic demands of sea basing. This is unsurprising as we have never been called upon to do it. But it will be essential to our ability to conduct operations from the sea and it will entail a large amount of Army's inventory spending time afloat.

Our transition from the current training, posture and culture will be difficult but it has begun. It is absolutely necessary because an Australian maritime strategy demands it. A cohesive, joint approach, focused on the geographic and demographic realities of our region, is clearly articulated in the 2009 Defence White Paper. To be credible, such a strategy must include an integral role for elements of Australian land power if it is to be flexible and balanced, capable of dealing with diverse and unpredictable global and regional security requirements. The Australian Army is on board, fully embarked and ready to play its part.



# Chief of Air Force

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*Geoff Brown*

In the often misquoted words of Donald Horne, 'Australia is a lucky country'; lucky geographically, demographically, politically, and economically.

But to diverge from Mr Horne's commentary on Australia in the 1960s, rather than rely on luck as strategy, which, unless you are a golfer, is never a particularly sound approach, we underpin the security of our nation and its interests through sustainment of a military force focused on the defence of Australia from direct armed attack. This has been, and continues to be, our number one national security priority.

As the largest island nation on this planet, and as our national anthem reminds us, 'with golden soil and wealth for toil, our home is girt by sea', indeed surrounded entirely by sea, and so it comes as no surprise that our security and prosperity are inextricably linked to the sea, whether it be on it, under it, or above it. Thus, again it is no surprise that a maritime strategy underpins our approach to national security.

As the Chief of Navy described earlier, Australia's prosperity has long been tied to the strength of our navy; its people its capabilities, and its professional excellence. The ability of the RAN to secure our maritime approaches and sea lines of communication has been, and continues to be, fundamental to the maintenance of our way of life. The RAN has a rich heritage of fulfilling this mission and rightly should be proud of it.

While our land is surrounded entirely by sea, it is also covered 100 per cent by air, and this fact too fundamentally influences our strategic approach to national security. Air, land and sea forces are of course the irreducible minimum components of our national security approach, but today I want to limit my comments to the interaction of just our sea and air forces.

The Royal Australian Air Force (RAAF) contribution to naval operations has historically, and continues to be realised through the four key air power roles of: intelligence, surveillance and reconnaissance (ISR); strike; air mobility; and control of the air. These roles are enduring and fundamental to air power's contribution to national security and they are terms that I use consistently, as you may have heard in other forums, whenever I speak about the RAAF and air power. The reason for this is because these roles are enduring and fundamental to all we do as an air force. They underpin the ways and means air force interacts and operates with navy. The titles for these roles may have changed over the years, but they encapsulate the core functions that air power has provided to military operations since military aviation was first developed as a significant form of warfare.



Each role can support the many tasks the air force, navy, and army have in the joint fight. In fact in many ways, the roles have a certain synergy to them. To conduct effective air mobility requires some degree of control of the air. Similarly to establish control of the air, certain aspects of the strike role may need to be undertaken. ISR is essential to all roles but itself may need a favourable air environment established through some measure of control of the air.

For air power these roles are ubiquitous and in many ways they continue today as they always have, to compliment the principle sea power roles of power projection, sea denial, and sea control.

We have all seen the word 'joint' grow fashionable since the 1980s, but the forging of air and naval power has a long and cooperative heritage that can be traced as far back as World War I and the very advent of air vehicles as instruments of war.

During a light cruiser raid into Germany's Heligoland Bight in June 1918, British Sopwith Camels launched from HMA Ships *Sydney* and *Melbourne* against attacking German fighters, conducted the first control of the air mission from Australian warships. The German aircraft were repelled with at least one machine gun hit recorded on an enemy plane. The age of air power in support of Australian naval operations had begun.

Cooperation between the RAN and the RAAF reaches back to the early days of Australian military aviation. Indeed the first Fairey seaplanes purchased in 1921 to support RAN reconnaissance operations were managed by the newly formed RAAF. This was likely to be the RAAF's first contribution of ISR support to the RAN.

Throughout World War II, RAAF aircraft, flown by a combination of RAAF pilots and RAN observers and gunners, alongside their land-based aircraft, escorted Australian convoys, performed anti-submarine patrols, flew many thousands of hours on air-sea rescue tasks, conducted strikes on enemy vessels, and undertook long-range reconnaissance and surveillance operations in support of Australian and allied naval task forces.

The tradition of RAAF support to Australian naval operations continued through conflicts in Korea, Vietnam and during the long years of the Cold War.

Maritime surveillance and anti-submarine warfare, conducted by Sunderland and Catalina flying boats, Lincoln bombers, Lockheed Neptunes, and P-3B/C Orions, have been institutionalised elements of RAAF tasking for more than 70 years.

In addition, these aircraft, alongside F-4 Phantoms, the F-111, and F/A-18 Hornets, continued to maintain a maritime strike capability, ready to contribute to any offensive or defensive tasks that the RAN may have been called upon to perform.

The Chief of Navy spoke on the importance of a comprehensive maritime strategy to Australia's ongoing prosperity. The large expansive waters to our north, south, east and west, the vastness of our exclusive economic zone, and the criticality of

the oil and gas fields to our country's future economic outlook, ensure we need to remain committed to a maritime strategy. This will require air and sea power to be applied as coordinated national effort in order to shape the maritime environment and deter any potential adversaries. The RAAF is committed to supporting the full range of Australian naval activities; whether they are sea denial, sea control, border security, suppression of piracy, economic security zone patrols, or force protection operations.

As with all elements of our defence force, the nature of the operation will determine the character of our contribution. However, as history, and in particular the last 20 years, have shown, we rarely operate in a state of complete peace or total conflict. We recognise through experience that all elements of the Australian Defence Force (ADF) need to be prepared to conduct both peace and warlike activities concurrently. Thus, while RAAF strike and control of the air activities are conducted primarily in the lead-up to and during conflict, ISR and air mobility occur across the spectrum of conflict.

The use of the air to collect data and information for development into intelligence was the first role for military aviation and continues to underpin much of our operational effectiveness. The RAAF views ISR as an integrated concept to synchronise, prioritise and manage collection, analysis and processing activities.

The vastness of the maritime environment presents a unique challenge to the RAN, and the RAAF appreciates the naval requirement to gain situational awareness of the operational context, as well as tactical information for offensive and defensive actions. This requirement underpins all joint maritime operations and drives our commitment to deliver timely ISR product; specifically through the Jindalee over-the-horizon radar and AP-3C maritime patrol aircraft. Under Project Air 7000, the P-8 Poseidon will replace the P-3C Orion, along with a high altitude, long endurance multi-role unmanned aerial system will continue to meet the increasing demands for maritime patrol and overwater ISR required for the security of Australia's maritime approaches.

I agree with Chief of Navy that at the high end of conflict, the RAN contribution to the defence of Australia will rely on its ability to control the seas through its capital ships and support vessels. Protection of these naval task force elements will be a priority mission for the RAAF and we have long contributed to this task through our maritime strike capability.

From our early days with Sunderland flying boats through to the F-111, and present day F/A-18, Super Hornet and AP-3C we have demonstrated the capability to strike warships that threaten our naval task forces, sea lines of communication, or ability to gain sea control. Through the planned acquisition of the P-8 and joint strike fighter (F-35) we remain committed to this task.

Anti-submarine warfare has been a mission of the RAAF since WWII and remains so today embodied in our AP-3C fleet. We recognise anti-submarine warfare as a true joint enterprise, encompassing the suite of capabilities open to the ADF.

Understandably, much of our attention over recent years has been in the Middle East Area of Operations and on surveillance of Australia's northern approaches which has drawn our focus away from this vital task. We look to revitalising this mission and see its future involving networked *Hobart* class DDG, *Anzac* and *Adelaide* class frigates with their MH-60 Romeo helicopters, and *Collins* class submarines working with AP-3C, P-8 maritime patrol aircraft, and the maritime unmanned aerial system. These air assets will be supported by aerial refuelling tankers and space-based assets, as well as leveraging the electronic capabilities of the airborne early warning and control (AEW&C) aircraft.

The submarine remains a significant threat to the security of our maritime environment, thus our national prosperity. Anti-submarine warfare, as a joint endeavour, needs to be at the forefront of military priorities if our maritime strategy is to remain relevant.

A cornerstone military activity of any operation across the spectrum of conflict is the ability to move people and equipment. The RAN has an unparalleled capacity in our Australian context to move a fighting force across large distances. The size and endurance of its vessels allow it to maintain a presence in the area of operations to conduct follow-on combat and sustainment activities. Air mobility through the C-17, C-130, and in the future the 'light tactical airlift capability' provides the RAAF with the ability to move people and equipment across large distances relatively quickly. Not only do the air power characteristics of speed and reach compliment the sea power traits of capacity and presence, they can work in harmony to increase the effectiveness of the other.

Time and again the RAAF and the RAN have worked together to deliver the right people, to the right place with the right equipment. Whether it was Operation FALCONER, where critical war fighting equipment from HMAS *Manoora* was transferred to RAAF C-130s for distribution around the Middle East Area of Operations; or the humanitarian aid sea-lifted by HMAS *Kanimbla* and airlifted by RAAF air mobility during Operation TSUNAMI ASSIST in 2005.

In addition, RAAF air mobility has provided logistic support to RAN vessels around the globe, whether it be the delivery of critical components to enable repairs, aero-medical evacuations, or just the routine movement of people and equipment. Sea and air power combine to generate the speed, reach, capacity and presence needed to support Australia's national security interests.

Just as Sir Julian Corbett's principle of control of the sea sets the foundation for sea power strategy, air power theorists place control of the air at the cornerstone of all air power effects. Both principles are based on the understanding that each domain

is not susceptible to ownership. We can control portions of them in time to achieve our objectives, like security of a sea line of communication or an area of operation, but acknowledge absolute command is not practical. This position is more prevalent given the scale of our air and sea approaches and the size of the RAN and RAAF.

It is worthwhile to note that the last RAN ship to be attacked by an enemy aircraft was HMAS *Australia* off The Philippines in 1945. Since that time, RAN task groups operating in contested environments have enjoyed sufficient protection from air power's control of the air, that no enemy air has had the ability to threaten their operations.

But 67 years of history is not a reason for complacency. The RAN and the RAAF understand the risks that enemy air action place on shipping, military or commercial, and on our submarines. This is why the RAAF is committed to the joint strike fighter as the most effective control of the air capability available to Australia, and the RAN is committed to the *Hobart* class DDG as the most lethal surface combatant Australia can acquire.

But to be able to commit to operations we need to be trained and ready. Thus, we will continue to undertake exercises, engaging not only with the RAN, but also with partner air forces and navies to maximise our interoperability and ensure air power's contribution to naval activities remains focused, relevant and effective.

But the way we train is undergoing fundamental changes. Gone are the days when training with the RAAF meant a Macchi or Mirage conducting mock attacks or simulating an anti-ship missile, or a P-3 B/C conducting rigging runs and searches for submarine periscopes.

Today, and into the future, training with air power is more than an inject into fleet exercises or ship work-up drills, but a fundamental contributor to the development of the full spectrum of sea power capabilities.

Training in anti-surface strike operations will involve the full range of RAAF maritime patrol, ISR, strike and control of the air capabilities operating alongside the *Collins* submarines, *Anzac* and *Adelaide* frigates, and the *Hobart* destroyers with their MH-60 Romeo helicopters.

Training will be focused on achieving joint effects with service needs leveraged off the outcomes. Do not misconstrue my comment. We will fulfil service training and accreditation requirements, but we need to put more consideration into the adage 'we train as we fight'. While there will be occasions we may operate as single Service, the Australian way of war is to fight joint. Thus, as sea and air power capabilities continue to evolve so will our approach to training. We will work closer together, enhance our networking, and improve our level of integration if we are to deliver the effects required to support our nation's security and future prosperity.

Perhaps the most significant surface combatant capability the RAN will acquire in the next decade will be the *Hobart* class DDG. The RAAF welcomes its introduction because, as I indicated earlier, control of the air is fundamental to military operations. The DDG, with its Aegis combat system, phased array radar and SM-6 missiles makes it one of the most lethal combat capabilities ever to leave an Australian port. And I did not mention its enhanced anti-submarine capabilities. I am glad it will be on our side.

Advancements in maritime attack aircraft and air-delivered munitions mean it is getting a whole lot more dangerous on the seas. Protection of a naval task force from enemy air requires a defence in depth approach. The DDG will provide the inner core of the defensive perimeter with air power, through the joint strike fighter, Super Hornet, AEW&C and P-8, providing the broader perspective and combat teeth to neutralise any potential airborne attacks.

I must say that if the future RAN surface combatant capability looks good then its future power projection capabilities look outstanding. The introduction into service of the *Canberra* class amphibious ships (LHD), and HMAS *Choules* (LSD) will provide Australia with an evolutionary new amphibious capability. And the RAAF will provide a large contribution to this joint capability.

If the current plan has only six joint battlefield airspace controllers (air traffic controllers) embarked, how will the RAAF contribution be large you may ask?

Let me say that if the LHD is dispatched into an environment that is in any way contested, the full range of RAAF control of the air, strike, ISR and air mobility capabilities will be committed to the protection of the task force and support for the entry operation. So, while our physical presence embarked with the task force will be small, our presence in the battlespace will be large and noisy.

Because we operate in separate, but overlapping domains, communications along with command and control have always been perennial challenges. The RAAF is fully committed to minimising any roadblocks that inhibit our ability to work seamlessly with naval elements.

Interoperability is a significant element in our acquisition strategy. It will be crucial to our future joint effectiveness our RAAF maritime capabilities to be networked into the naval task elements. The AEW&C, P-8, joint strike fighter, and maritime unmanned aerial system, along with our legacy maritime capabilities, need to be able not just to talk to the DDG, LHD, frigates and MH-60 Romeo helicopters, but networked to be able to fight as an integrated group. The AEW&C aircraft is a good example of steps to improve air and sea power interoperability with a navy operator fully integrated into every AEW&C crew. Perhaps in the future we will have exchanges on the MH-60H Romeo and P-8 aircraft.

A large part of our ability to network is dependent upon our exploitation the space domain. Communications, ISR, navigation, timing are just a few of the functions supported by space that have become crucial to our individual service and joint combat effectiveness. This level of dependence is only set to increase into the future, thus it is in all our interests to develop a joint approach to the use of space.

Coordinating command and control is a perennial challenge. As we transition new capabilities in each service and integrate these into joint effects our greatest challenge will not be how we operate them - we are world-leaders across most of our combat fields - but how the RAAF commands and controls air power contributions most effectively and efficiently to meet the naval component needs and Joint Force Commander's requirements.

Despite some name changes, the air power roles of ISR, strike, air mobility, and control of the air have been and will continue to remain enduring functions that compliment the RAN principle missions. However, the character of the RAAF contribution will continue to evolve in response to the operational environment, RAN requirements, and technological advancements.

Every capability the RAAF will be bringing on-line over this next decade will enhance its contribution the naval activities and its ability to support RAN operations. RAAF air power is structured for both peace and conflict, and stands ready to support the full range of the RAN contribution to Australia's national security and prosperity.



PART 2

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Economics of  
Sea Power





# The Economics of Sea Power: Testing Maritime Narrative for the 21st Century

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Geoffrey Till

The necessity of a navy ... springs, therefore, from the existence of a peaceful shipping, and disappears with it.

Alfred Thayer Mahan

Last year, 2011, was the centenary of Sir Julian Corbett's masterwork *Some Principles of Maritime Strategy* and of Alfred Thayer Mahan's untypically less effective *Naval Strategy: Compared and Contrasted with the Principles and Practise of Military Operations on Land*. This coincidence together with the attention currently being paid to maritime developments in the Asia-Pacific region seems to provide an ideal excuse to investigate the validity of the maritime narrative associated with these two advocates of sea power and its applicability to the conditions of the new 'Asian' century.

In broad terms, such navalists argued that their reviews of history showed that there was something uniquely cost-effective about seapower, as compared to land power, and that those nations best able to exploit it profited over those who did not.

Of course, states are rarely either sea powers or land powers, although one can think of exceptions. More usually they are both, with mixtures of the two characteristics. For sea powers, the maritime dimension will tend to dominate, and to shape the way that the state thinks about its land forces. In land powers the reverse is true. The issue, in effect, was the critical importance of getting the right balance between the two. This done, Mahan maintained, maritime powers had the advantage.

## The Historic Record

And so history seems to confirm - at least according to Mahan:

Control of the sea by maritime commerce and naval supremacy means predominant influence in the world ... [and] is the chief among the merely material elements in the power and prosperity of nations.<sup>1</sup>

From the 16th to the 20th centuries, the Europeans discovered, and were able to exploit, the huge advantage to be derived from the close association between the military and mercantile aspects of sea power. The British of the era of the Napoleonic wars understood this point very well. For them 'maritime power' meant a potent mix of a small, relatively agile army, and extensive naval and economic power which in turn made possible a wide-ranging grand strategy based on economic pressure exercised through sea power. As Liddell Hart put it, there were two aspects to this maritime strategy,

one financial which embraced the subsidising and military provisioning of allies; the other military, which embraced seaborne expeditions against the enemy's vulnerable extremities. In the Napoleonic wars, whatever was said and hoped by Englishmen who day-dreamed of quick victories, the method pursued in the end was financial attrition.

Even with the cost of the war spiralling from £29,000,000 per annum in 1804 to over £70,000,000 in 1813, 'Britain was able to sustain a level of expenditure that far outstripped that of every other country in Europe'.<sup>2</sup>

What made this possible was the simple fact that the British Empire was founded on sea power, and that sea power was founded on trade. The Royal Navy maintained the international stability in which trade could flourish; it protected the trade routes and the merchant ships that plied them; its command of the sea made possible the movement and supply of land forces which protected the colonies and Britain's commercial interests from overland attack and internal disorder. The Royal Navy was disposed and deployed accordingly around the world to protect the Imperial system - a system that depended on safe and rapid communications of all sorts.<sup>3</sup> Trade and the Royal Navy, in short, held the Empire together and made Britain the wealthiest and most powerful of all nations.<sup>4</sup>

And all this provided what Niall Ferguson has called 'world dominion on the cheap.' The British devoted rather less than 2.5 per cent of their gross national product to defence, maintained only 215,000 soldiers but a navy of 100,000. Before World War I, they built 27 Dreadnoughts, the 'death stars' of their time, for £49 million, less than the annual interest charge on the national debt.<sup>5</sup> The cost-effectiveness of this sea-based enterprise was even more clearly displayed in Britain's trading relationships with its informal empire in South America, where many of the benefits of imperialism were enjoyed but without the expensive entanglements that usually come with them.

Arguably, the United States took the same maritime baton from the British during the course of World War II. As Walter Russell Mead has remarked:

The world system today as managed by the United States preserves most of the chief features key features of the British system that existed before World War II: a liberal, maritime, international order that promotes the free flow of capital and goods and the development of liberal economic and political institutions and values.<sup>6</sup>

Two points need to be made about this. The first is the emphasis on the word 'liberal,' the notion that certain characteristics of government facilitate economic growth and development and so should be actively encouraged. These include such things as secure property and contract rights, personal liberty, stable, responsive incorrupt government and so on.<sup>7</sup>

Second, Mead's emphasis on the word 'maritime' is significant because the British Empire was plainly not based on demographic advantage, nor on the size of its commercial activity, which at its peak in the 1870s amounted to no more than 9 per cent of the world's gross national product.<sup>8</sup> It was the consequence of entrepreneurial skill, industrial and technological prowess, a general capacity to win wars (though often losing the first round) and perhaps above all on maritime strength, both commercial and naval. Mahan wrote of the 'overwhelming power, destined to be used as selfishly, as aggressively, though not as cruelly, and much more successfully than any that had preceded it. This was the power of the sea.'<sup>9</sup> This was and continues to be a 'maritime order,' based on sea power, both naval and commercial - and one that has indeed shaped the world. On the basis of this kind of maritime narrative, Walter McDougall has concluded: 'all truly grand and successful strategies have been essentially (if not exclusively) maritime.'<sup>10</sup>

Of course, this simple and apparently persuasive maritime narrative has had its challengers. Caveats and cautions have to be entered and the historic victory of the maritime powers, if that is what happened, was far from effortless or assured. While British naval supremacy in the Revolutionary/Napoleonic wars shielded the country from invasion, provided the means for expeditionary operations on the continent of Europe, and with the aid of a sophisticated sea-based financial system allowed them to subsidise one anti-Napoleonic coalition after another, this was at considerable human, social and financial costs and was fraught with continuing difficulty.<sup>11</sup>

Geo-politicians such as Halford Mackinder have pointed out that many long-lasting empires were based on land power not sea power. Mahan and others had made too much of the Columbian era. This in fact was the exception to the rule. The Mongols for example created a massive empire lasting some 500 years that was about as far from the sea as it is geographically possible to get. The great Eurasian empire of Genghis Khan and his successors stretched from Europe to the Pacific and took in South Asia and much of the Middle East as well. But this was an empire based on horsepower not sea power, although in places the Mongols did approach the sea. Moreover, the Mongol Empire turned into a great force of 'global connectedness' if not of true globalisation. Genghis (1206-27) with speed, surprise and the ability to operate across incredible distances conquered more peoples and territory in 25 years than Rome had managed in 400, and it was at the time the most densely populated areas of the world's surface. Genghis galvanised the Silk Route and established what was in effect a free trade zone stretching from Korea to the Balkans, introduced a universal alphabet, the first international postal system and a body of law and regulation that encouraged trade to flourish, German miners to work in China, and Chinese doctors to practice in Persia.<sup>12</sup> Tamerlane carried this still further dominating the great overland trunk road of Eurasian commerce.<sup>13</sup> The rise of Muscovy over Gogol's 'golden green ocean of the steppes' echoed all this in

some respects. This was no Athens; it was a Eurasian Sparta that exploited the trade routes of the interior of the Mackinder's 'world island' but which rested in practice on social and political oppression.<sup>14</sup>

Moreover, being maritime brings vulnerabilities as well as opportunities. Sophisticated maritime powers depend on a complex network of shipping that imports raw materials, food and uncompleted goods and exports finished and manufactured products. This can be a delicate system, and a dangerous source of vulnerability, especially when the distracting effect of continental threats, or governmental neglect, or the appearance of a stronger maritime adversary produces a navy of insufficient strength to protect the wider maritime system on which it ultimately depends. Concerns about these centrifugal tendencies were widely felt even by the British at the apparent height of their imperial power. Thus Rudyard Kipling's elegy to Empire at the time of Queen Victoria's Diamond Jubilee of 1887:

Far-called, our navies melt away;  
On dunes and headlands sinks the fire;  
Lo, all our pomp of yesterday  
Is one with Nineveh and Tyre!<sup>15</sup>

As the fate of the Netherlands in the late 17th century and Japan, more dramatically in the mid 20th century show, not just the interests but the very survival of the maritime power may be at stake if their inescapable vulnerabilities are successfully exploited by others.

Again, turning away from the sea did not necessarily doom a state to depression and decay. China's reversion to a much more 'continental' approach under the later Ming and through the early Qing dynasties did not lead to national decline. The Qing Empire founded on its continental strength and an artful combination of hard and soft power was arguably at its apogee in the second half of the 18th century.<sup>16</sup> China retained most of its links with the outside world, but the sheer size of its internal market (bigger than the whole of Europe's) meant that in relative terms China's international trade could remain quite small without strategic penalty.<sup>17</sup> China's view of the fundamental unimportance of maritime trade was expressed by the Qianlong Emperor to Lord Macartney in 1793:

Our dynasty's majestic virtue has penetrated into every country under heaven, and kings of nations have offered their costly tribute by land and sea. As your Ambassador can see for himself, we possess all things. I set no value on objects strange or ingenious, and have no use for your country's manufactures ...<sup>18</sup>

Finally, the geo-politicians argued that the 'world political potential of sea power had been in full retreat long before the first submarine had plunged below the surface and the first plane had taken to the air.'<sup>19</sup> This was because land communications were improving. Transcontinental railways were facilitating the concentration

of industrial capacity as a route to power rather than the acquisition of colonies. Clearly, the German economic rise of the late 19th century and Russia's a little later on did not depend on sea power.<sup>20</sup>

To this, the 'maritimists' might very well respond that by neglecting the sea - by getting the balance between land and sea power 'wrong' - Qing China, and for that matter Japan and India too, opened themselves up to the depredations of those countries which had not and doomed themselves to a period of strategic vulnerability and decline from which China and India are only now beginning to recover. Japan, on the other hand, provides a more complex case. When it was re-introduced to the potential of sea power by Commodore Perry and his 'black ships', it responded much more enthusiastically but still the continental imperative remained (too?) strong.

In some ways, though, scepticism about the 'terrible simplicities' of the maritime narrative came to a head during the Cold War and in the aftermath of World War II, a contest effectively decided by the Homeric struggle between two massive continental powers across the Eurasian landmass. First, as far as sceptics were concerned, the sea power of a continental state in the form of a growing merchant marine and an increasingly powerful navy seemed likely to be able to exploit the inevitable vulnerabilities of a maritime alliance, especially its geographic dispersion and its total reliance on seaborne communications. Second, sceptics thought the Western advantage in accumulated naval power could well be 'negated' by technological advance. Particularly during the Khrushchev era from 1956-64, they thought nuclear weaponry would render much of the West's naval arsenal obsolete at the level of grand strategy.<sup>21</sup> A Soviet Navy ability to operate a sea-based nuclear deterrent force would 'equalise' the two fleets strategically. Tactically and operationally, asymmetric technologies in the shape of anti-ship missiles and fast torpedoes possibly armed with nuclear warheads would prove a means for keeping Western striking fleets well away from the Soviet coast where they could otherwise do most harm. Third and finally, history was claimed to be on the side of the Soviet Union: the tremendous social, collective industrial and military resources of Mackinder's Heartland could therefore be fully mobilised in a way that would cancel out the advantages of Mahanian seapower and free-market economics.<sup>22</sup>

In the end though, the Mahanian narrative stood the challenge. With the advent of nuclear weapons making the exploitation of the Soviet Union's advantages in conventional ground forces too hazardous, with their increasingly embarrassing failure to outpace the West industrially and with the advent of 'Star Wars' technology, the Heartland power was in increasing trouble. The Western economic system proved much better able to sustain the levels of expenditure and technological effort required to win the military race for supremacy at sea; sea power held the alliance together in a manner which confronted the Soviet Navy not just with an accretion in the numbers and skills of their adversaries, but also by an extension in the range of the situations in which it would need to counter

them in any strategic venture against the West. The *Maritime Strategy* of 1986, despite its Western critics, finally convinced Soviet leaders that the initiative had been irreversibly wrested from their grasp.

Putting this all together, the Mahanian narrative would seem substantially to have prevailed against its many challenges even in the Cold War era. At the very least, the defensive and potentially offensive naval capabilities of what was essentially a maritime alliance helped prevent it from losing the strategic competition with a constrained land power that had resolved to go to sea. But, by that very fact of not losing, the United States and the Western alliance, given its economic and industrial advantages, was likely in the end to prevail, and the challenge to Western sea power represented by the Soviet Navy to fail. Fortunately, in this case, it did not take a conflict to prove the point.

Since then, though, the narrative seems to have been strengthened still further by the very evidence of its centrality to the rise of Asia in the late 20th and early 21st centuries.<sup>23</sup> Something like 87 per cent of East Asian gross domestic product in 2008 can be credited to seaborne trade, and that has almost doubled over the past two decades.<sup>24</sup> The region's investment in navies has accordingly risen in dramatic style.

All the same, scepticism persists. Some have argued that the lure of the energy resources and potential markets of the Arabian Gulf and Central Asia have also spawned a developing plethora of Sino-centric pipelines and advanced rail and road communications that will link the country much more closely and directly to the rest of the Eurasian landmass. The potential of this new 'silk road' and the manner in which it could resolve China's 'Malacca dilemma' '...suggests we need to read a little less Mahan and a little more Mackinder.'<sup>25</sup> The shipping industry has its frailties too, not least in its crucial reliance on trade volumes and has been one of the most obvious victims of the current economic downturn. Market volatility makes long-term maritime planning very difficult. Although a useful reminder that overland communications have been historically crucial too, and remain so, this case should nonetheless not be pushed too far. Overland communications remain more expensive than sea-based alternatives, bring their own political and physical vulnerabilities and are environmentally far more destructive.<sup>26</sup> So far then, the maritime narrative seems to be holding true.

## Explaining the Cost Effectiveness of the Maritime Approach

So, if the maritime narrative does appear broadly, and for the moment, to be essentially true; why is it true? What is the secret of its cost-effectiveness? There seem to be essentially two answers to this question: the controllability of maritime operations, and the intimate relationship between naval power and economic prosperity.

First, cost-effectiveness depends critically on the capacity to control the costs of an enterprise and maritime operations do seem to have a distinct advantage over others in this respect. As Sir Francis Bacon remarked:

This much is certain, that he that commands the sea is at great liberty, and may take as much and as little of the war as he will. Whereas those that be strongest by land are many times nevertheless in great straits.<sup>27</sup>

The sea, Corbett thought, allowed limited interventions ashore that profited from the options for manoeuvre deriving from the sheer extent and ubiquity of the world ocean, and from the ability to calibrate the level of effort and vulnerability of forces that use it as a base. It means, in modern terminology, that instead of getting sucked into other peoples' quarrels, maritime powers could aim to be 'offshore-balancers' intervening, in a limited and therapeutic way, where, when, and to the extent, they wanted, while always retaining the option of pulling out if circumstances demanded it.

Second, cost-effectiveness is increased when the nature of the task conforms most closely to the nature of the assets available to perform it. Here the close association between navies and the creation of wealth is a huge advantage. It was through the intimacy and mutual dependency of trade-based economics and naval power so characteristic of the maritime approach and so different from the crude and brutalist thinking of continentalists like Napoleon or Hitler that the essential cost-effectiveness of the maritime approach has come, and which explained how it was, thought Corbett:

that a small country [like Britain] with a weak army should have been able to gather to herself the most desirable regions of the earth, and to gather them at the expense of the greatest military powers.<sup>28</sup>

Sea powers can much better exploit the attributes of the sea as a stock of resources in itself (energy in the shape of calories from fish, oil and gas) and as a means of transport. In the Ancient World, access to water transport and especially to sea transport was a necessary, though not a sufficient, condition for the expansion of cities and state power because it allowed a much greater increase in the size of the population than could be supplied by local agricultural production and a greater variety of available goods that offered the prospect of a better quality of life.<sup>29</sup> Hence the growth of Athens and Rome was critically dependent on their access to the sea. Athens relied absolutely on its access to the Crimean grain trade; Rome imported 150,000 tons of grain every year from its various sources and 85 per cent of it came by sea.<sup>30</sup>

Covering 75 per cent of the earth's surface, the world ocean has become what the lawyers call a 'flow resource' - the safest, cheapest and in some ways fastest medium for the transportation of volume goods - as well as a 'stock resource' for its fish, oil and gas. Inevitably the protection of those attributes, and more widely the conditions under which they can be enjoyed has become the chief requirement of navies by what they do at and from the sea.

This is how the *New York Times* put it a few years after the appearance of Mahan's greatest book:



It has been said that naval strength has become at this day the right arm of diplomacy, and the most important element in large and critical foreign relations. A navy is necessary to a commercial power, and it is at once a promoter and conservator of commerce. Without its support, foreign trade would languish, if not perish utterly. This truth is taught by all the lessons of history, and its observance today becomes a prudent and wise nation.<sup>31</sup>

The sense that navies are uniquely fitted to defend trade is now a commonplace - amongst sailors at least. As US Navy Captain Robert Rubel has concluded:

The unique thing about navies is that their optimum utility is in time of peace ... investment in navies structured along systemic lines, promises a massive return in the form of an extended and improving peace and - despite the current economic woes - prosperity.<sup>32</sup>

In some circumstances navies not only protect the interactions of a sea-based trading system at sea itself, they can also engage in actions that protect the conditions for trade by making possible 'therapeutic' interventions ashore wherever and whenever commercial or strategic interests require it. Hence the studies that seek to demonstrate the link between forward naval presence and the stability, say of oil prices (and therefore of economic growth) done by, and for, the US Navy.<sup>33</sup>

But between trade and the navy there is a two way link of mutual dependence for sea-based trade provides the human, material and financial resources for the naval power that its protection justifies. Trade provides the wealth, on which naval expenditure depends, for as Corbett remarked:

Finance is scarcely less important. When other things are equal, it is the longer purse that wins. It has even many times redressed an unfavourable balance of armed force and given victory to the physically weaker power. Anything, therefore, which we are able to achieve towards crippling our enemy's finance is a direct step to his overthrow, and the most effective means we can employ to this end against a maritime State is to deny him the resources of seaborne trade.<sup>34</sup>

Naval weaponry and manpower, in sufficient quantity and quality depend on the availability of sufficient finance and access to technological/industrial productive capacity. Thus Admiral Ernest J King:

Naval accomplishments in this mechanized age are dependent upon production. The best officers and men can do little without an adequate supply of the highly specialized machinery of warfare. Our guiding policy is to achieve not mere adequacy, but overwhelming superiority of material, thereby ensuring not only victory, but early victory with the least possible loss of American lives.<sup>35</sup>

Though less true now, the intimacy of the relationship between sea-based trade and naval power was traditionally best exemplified by the strategic as well as the commercial utility of merchant shipping. As McNeile Dixon recommended back, a touch lyrically, in 1920:

Cease to think of Britain's naval power in terms of battleships and cruisers and you begin to understand it. Think of it rather in terms of trade routes and navigation, of ship and dockyards, of busy ports and harbours, of a deeply indented coastline ... of great rivers flowing into wide estuaries; of liners and tramps...

Too often the histories speak of the navy as if it were a thing apart, a mere fighting instrument, and forget to tell us of the fleets behind the fleet; of the merchant sailors and the fishermen, the pioneers and the builders of our sea-supported confederacy.

We should speak of it as an empire of tonnage - twenty million tons of it - carrying the weight of half the world's goods, a voyaging empire, in everlasting motion on the seas, that in the days of peace serves every race and country.<sup>36</sup>

Civilian shipping provided support for naval power, was a source of strategic mobility and the means of sustaining essential imports in time of war. Thus maritime governments support their shipping industries for strategic as well as commercial reasons.<sup>37</sup>

There is of course a negative side to all this. When a country's economic prosperity declines in comparison with that of others, then so will its capacity to defend the system on which that prosperity depends. As Robert Gates has pointed out, 'defense budget expectations overtime, not to mention any country's strategic strength, are intrinsically linked to the overall to the financial and fiscal strength of the nation.'<sup>38</sup> In many Western nations, however, the concern has arisen less about the continued validity of the maritime narrative and more about their capacity to benefit from it, in comparison with the rising naval powers of the Asia-Pacific region.

Conditions and patterns change and no maritime world order seem likely to be permanent. Thus in the terms of one British Government report of 1727:

Command of the sea has frequently passed from one nation to another, and though Great Britain has continued longer in possession of the superiority than perhaps any other nations did, yet all human affairs are subject to great vicissitudes.<sup>39</sup>

In fact this report was unduly pessimistic as things turned out and British naval mastery had another 200 years or so to run, but the basic point was true enough. Maritime supremacy passes from one state to another as circumstances change - either by force or by accommodation as the British and the Americans managed to do.

The question of the extent to which we are facing a major period of maritime transition has been and will continue to be discussed for years, but the simple fact that in so many ways the rising powers of India and China seem to be recovering the maritime aspects of their pasts and also to be following the Western trajectory towards full involvement in, and increasing part ownership of, a globalised sea-based trading system, and, additionally, that the development of their naval power seems more and more central to their concerns, suggests that for all its terrible simplicities, and the many qualifications and limitations to the central argument that have to be entered against it, the maritime narrative is basically right after all. Certainly, it is important to distinguish the declinist angst of the traditional maritime powers of the West (justified or not though it might be) from the maritime narrative that they have historically represented. The latter may prosper even if the former do not.

## Defending and Implementing the Maritime Approach

So what does history advise those powers in the West that seek to defend their capacity to profit from the cost-effectiveness of the maritime approach and the rising powers of the East that seek to develop it? Again, there seem to be two inter-dependent essentials: to defend the system against whatever may threaten it, and to moderate objectives in order to keep costs manageable.

Whether they like it or not, maritime states are critically dependent on the global trading system. What happens in distant parts of the world, sooner or later affects them, and often to a much greater extent than it does the less maritime. The things that threaten the system by endangering trade and the conditions for trade include:

- Inter-state war. The disruptions to the world economy that a US-China conflict over Taiwan would have are unimaginable. The threats of this are currently low, but we need to help keep them so.
- Deliberate attack by forces, both state and non-state, hostile to the intentions, values and outcomes of globalisation.
- Disorder ashore and at sea, especially in areas that produce crucial commodities, through which critical transportation routes run or which have clear links to British security and/or prosperity.

This requires more flexibility from naval forces than for army or air forces which, historically, have usually been planned against much narrower and therefore more easily quantifiable sets of operational contingencies. It is not just the traditional argument that navies need to defend shipping or protect the sea lanes, it is about defending the trading system that they represent, including, very possibly, its resource and manufacturing centres. These days the often-cited Mahanian quotation given at the start of this paper may mislead since the task is very often more a question of defending the conditions for trade from the sea than it is the direct defence of trade at sea, through the protection of shipping.

Defending the conditions for trade means, above all else, deterring conflict and preventing the onset of ruinous war. Vulnerabilities that might tempt others need to be avoided, rising maritime powers accommodated (provided their aims are compatible with the defence of the system) and unnecessary arms races avoided. It requires a collective emphasis on maritime security, an acceptance of commonality of interest in the defence of the system and the need for international maritime cooperation as a means of narrowing the gap between necessary commitments and available resources. Situations that give rise to failing states or malign regimes where terrorism can flourish and disorder reign can hopefully be prevented by proactive and comprehensive capacity building by military and non-military forces inside the framework of a globalised trading system that is made to seem fairer and so more sustainable than it appears to many people at the moment.<sup>40</sup> In an increasingly maritime world, it is hard to exaggerate the importance of sea power-enabled engagement of this sort. Specifically system defence requires having access to an appropriate force structure, what might be called full spectrum naval diplomacy and the capacity to conduct limited expeditionary operations where absolutely necessary.

And with this we get to the second of the two means of implementing a cost-effective maritime approach, namely that wherever, and to the extent possible of moderating the objective so that costs can be kept down.

This works at two levels. First, maritime powers seem generally regarded as less threatening to others and so less likely to invite alliances against them.<sup>41</sup> Their intentions are seen as generally more benign, their capacity to invade and occupy significantly less. Thus as Norman Angell pointed out in 1915, the world fears German militarism but not British marinism because 'marinism does not encroach on social and political freedom and militarism does.'<sup>42</sup> Or again for a more contemporary view John Mearsheimer says 'Offshore balancers do not provoke balancing coalitions against themselves'.<sup>43</sup> Economic dominance does not require political control still less territorial control. Trade was the objective, not the establishment of empire, although the latter could result from the former under the 'imperialism of free trade'.<sup>44</sup> As remarked earlier, where they could, the British in particular were content to trade with advantage as in South America and China (with its treaty ports) without having to assume the burdens of empire.

British imperial historians have for years been making the point that Empire rested essentially on sufficient consent of a sort. How else could the British 'rule' India a region of 225-250 million people with just 1250 senior civil servants and at most 35,000 British troops?<sup>45</sup> Collaboration, concession and consent were an essential part of the imperial project, even one so apparently based on brutal military power as Spain's.<sup>46</sup> Without at least a degree of consent and collaboration no empire could survive for long. Since power will always beget counter-power,

better, and probably more economical in the long run, is a strategy that undercuts the incentives for ganging up [against the imperial power] - to soften the hard edge of [in this case] the US's overwhelming power with the soothing balm of trust.<sup>47</sup>

This requires the imperial power to attend seriously to the interests of others, as all of them sooner or later have had to do. And of course when that consent is withdrawn, empires have collapsed, often because of their essential complexities and fragilities, with bewildering speed.<sup>48</sup>

Second, the maritime approach means avoiding wherever possible the exhausting distractions encountered through engagement in large-scale, cost-ineffective land campaigns especially on the mainland of Asia. As Walter A McDougal has recently observed,

Japan enjoyed regional naval supremacy, indeed a sort of Japanese Monroe Doctrine, from 1904 to 1937. But rather than seeing insular Japan as the Asian mirror of Britain and privileging naval power, the Mikado saw Japan as the Asian mirror of Germany and privileged the Army. Hence Japan exhausted itself in a suicidal bid for a mainland empire. One might even say, the British, too, lost their maritime supremacy by engaging in two exhausting world wars on land. One might even wonder whether the United States is in danger of squandering its supremacy through a series of discretionary land wars in Asia.<sup>49</sup>

Indeed what broke the British was not the costs of this kind of sea-based empire, but the ruinous consequences of getting involved in large scale conflict on the Continent of Europe, as they did in 1914-18 and again in 1939-45. These commitments meant, for example, that the British felt unable to send out to Singapore and the Far East the relatively small accretions of naval, air and expeditionary land capabilities that would have made all the difference to the outcome of the Malaya campaign of 1941-42, the fall and the delayed recovery, of Singapore. Significantly a gross shortage in the required level of shipping was amongst the major reasons for this, and nicely illustrates the adverse impact that the continental approach can have on the maritime.<sup>50</sup>

McDougal and others have extrapolated this into the 21st century by urging the avoidance of more wars like Afghanistan since its character does not play to the strengths of the maritime approach. Partly of course, this is a matter of geography. Afghanistan is a land-locked country, with a primitive infrastructure, complex social characteristics, a traditional aversion to central government and porous border regions abutting outside areas supportive of the insurgency. Resourceful adversaries have repeatedly demonstrated their capacity to make the most of the Coalition's unavoidable logistic vulnerabilities, not least the fiendishly expensive land transit phase through Pakistan which has so often been attacked or pilfered.<sup>51</sup>

Worst of all, arguably, in Afghanistan, UN and NATO forces are, for all their dedication and professionalism, labouring under the enormous disadvantage of their association with a regime seen as illegitimate by a disappointingly large proportion of the local population. Good strategy, a 21st-century Corbett would say, is about making the best use of one's advantages, and denying the adversary the ability to do the same. In Afghanistan type counter-insurgency situations, this is particularly difficult. Worse, long-term boots-on-the-ground can often seem to be counter-productive, more part of the problem than the solution, especially when, to the locals, their presence seems to take the form of inaccurate air-strikes based on faulty intelligence that kill or injure innocent civilians. The longer garrisoning forces stay in such places, the worse this usually gets, especially if they are not big and well-armed enough, relative to the challenge they face.<sup>52</sup>

Instead the argument goes the recent NATO operation in Libya can be seen as a much more cost-effective military enterprise, by NATO's air and maritime forces. In securing general world approval for a strategy of protecting civilians from a vindictive and failing regime, it was successful. Civilian collateral deaths were kept to a very low level; there were no NATO deaths, and the financial costs, for the British, for the same 6 month period were barely 12 per cent of its costs in Afghanistan. The initial military incompetence of the insurgents and the National Transitional Council refusal to treat with Gaddafi meant there was a degree of mission creep, and it took longer than expected. But all the same the mission itself was a success and the presence of conventional NATO ground forces was not after all proved to be necessary.<sup>53</sup>

But the objection might be the same as that of Britain's Field Marshal Robertson, heavily engaged in 1916 in trying to meet Britain's unavoidable 'continental commitment' - sometimes we fight wars in the ways we have to, rather than we would wish to. We do not have the options to fight just the wars and in the ways we like. Wars pick us, we do not pick them. There is some truth in this but since to fight that way is to cede the initiative either to circumstances or to the adversary, it is hardly an ideal way in which to start a war, and still less to prosecute it. In such adverse circumstances countries need to be clear about what their national interest requires and about the level of effort demanded and perhaps more selective in whether to proceed than many of them seem to have been in the run-up to Afghanistan.<sup>54</sup>

Certainly as Rubel has argued, 'therapeutic incisions have been and will continue to be necessary at various times and places.'<sup>55</sup> Surgeons engaged in such activity hopefully have considered the options carefully before they start operating. Their aim is to ensure that the incision is indeed therapeutic. And while prepared to respond to the unexpected they do not usually base their strategy on a policy of making it up as they go along. For maritime powers, concludes McDougall, unavoidable and sustained land conflicts should be seen for what they are - detours.

## Conclusions

Contemporary developments suggest that the more these two basic maritime approaches are adhered to, the greater the likelihood that Western maritime powers would be able to sustain their peace and prosperity and the rising powers of Asia to develop it.

It might be objected that there is little that is new in any of this, that it merely marks in many respects a nostalgic rediscovery of the traditional maritime approach aimed essentially at the direct and indirect defence of trade, of maintaining maritime security, wherever possible of capacity-building and offshore balancing and where absolutely necessary of hard-nosed limited engagement for maximum effect.<sup>56</sup> But this should be a recommendation not a criticism. Such a strategy has served the maritime powers well over the past several hundred years and despite the occasional exceptions of the past and the obvious novelties and manifold obscurities of the present and future, seem likely to serve the emerging generation equally well now.

## Notes

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- 54 Michael Clarke and Valentina Soria, 'Charging Up the Valley: British decisions in Afghanistan', *RUSI Journal* Aug/Sep 2011, pp. 80-88.
- 55 Rubel, 'Navies and Economic prosperity- the New Logic of sea power'.
- 56 Colin Gray, 'Britain's National Security: Compulsion and Discretion', *RUSI Journal*, December 2008 makes the point admirably.

# Is There a Threat to Australia's Seaborne Trade?

*Andrew Forbes and David Neumann*

The foundation stone of the Australian economy is international trade, predominantly seaborne, reflecting British colonial economic arrangements from European settlement in 1788, an abundance of natural resources, and the development of a limited manufacturing base. At its broadest, the composition of this seaborne trade can be simplified to that of the export of primary resources in order to finance imports of secondary (manufactured) goods. Of course in detail the trade composition is more complex than this, but as a generalisation for our purposes, the statement holds true.

As a state that is so reliant on seaborne trade for its economic prosperity and indeed some might say survival, the protection of this trade (more properly, international shipping) is significant and has long been a role of the RAN. However, there has been limited or no recent public consideration of the subject and this paper, divided into three sections, provides a broad overview of the issues: the first outlines Australian seaborne trade, commodities, shipping ownership and trading partners; the second examines issues associated with threat and response; and the third examines the implications for Australia.

## Australian Seaborne Trade 2010-11

In 2010-11 the Australian economy was valued at around \$1.4 trillion, and with seaborne trade valued at \$383.5 billion (exports valued at \$222.6 billion, imports valued at \$160.9 billion), it is critical to the Australian economy at an aggregated level for producing, selling, using and buying goods, as well as a source of employment and revenue.<sup>1</sup>

Table 1 shows the broad composition of this trade reflects the structure of the Australian economy. By value, primary goods contributed nearly 59 per cent of total trade, with manufacturing contributing just over 36 per cent. For exports, the compositional split was 80 per cent primary, 13 per cent manufacturing and 7 per cent other. Within the primary category, crude materials excluding fuels were valued at \$86.7 billion and mineral fuels/lubricants and related materials were valued at \$67.9 billion. For imports the split was 29 per cent primary, 68 per cent manufacturing and 3 per cent other. Within the manufacturing category, machinery and transport equipment were valued at \$58.8 billion, manufactured goods at \$20.9 billion and chemical and related products at \$13.1 billion.

	Exports		Imports		Total Trade	
	\$ billion	million tonnes	\$ billion	million tonnes	\$ billion	million tonnes
<b>Primary</b>	178.5	831.1	46.7	60.1	225.2	891.2
<b>Manufacturing</b>	28.9	11	110.1	31.6	139	42.6
<b>Other</b>	15.3	39	4.1	0.4	19.4	39.04
<b>Total</b>	<b>222.7</b>	<b>881.1</b>	<b>160.9</b>	<b>92.1</b>	<b>383.6</b>	<b>972.8</b>

*Table 1: Australia's seaborne trade by composition, 2010-11<sup>2</sup>  
(may not add due to rounding)*

A brief examination of the weight of this trade emphasises its nature and the implications for Australian and international shipping to transport these goods. By weight, primary goods contributed 92 per cent of total trade with manufacturing and other goods contributing 4 per cent respectively. For exports, primary goods contributed 94 per cent, manufacturing 1 per cent and other goods 5 per cent. Within the primary category, crude materials excluding fuels weighed 494 million tonnes and mineral fuels, lubricants and related materials weighed 304 million tonnes. For imports, the split was 65 per cent primary goods, over 34 per cent for manufacturing and under half a per cent for other goods. Within the primary category, crude materials excluding fuels weighed 9.3 million tonnes and mineral fuels, lubricants and related materials weighed 46 million tonnes. Within the manufacturing category, manufactured goods weighed 12.4 million tonnes and chemical and related products weighed 11.6 million tonnes. Dry and liquid bulk shipping is crucial for the movements of these goods, in and out of Australia, followed by container and specialised product shipping.

There are approximately 70 ports used for Australian seaborne trade (including Australian coastal trade between states and territories). Port ownership ranges across state government owned, to those that have been privatised, and to private (company) owned. The types of goods and thus ships using these ports might vary between multi-use to a single commodity; and the port might manage either exports or imports, or both. Generally container shipping is concentrated in the ports of Adelaide, Brisbane, Fremantle, Melbourne and Sydney; most non-container trade, particularly bulk, is carried through regional ports.

Ship Type	Number of Ships	Weight (tonnes)
<b>Bulk Carrier</b>	9	970,900
<b>Container Ship</b>	8	237,700
<b>General Cargo</b>	6	34,900
<b>Livestock Carrier</b>	4	43,500
<b>LNG Carrier</b>	9	631,500
<b>LPG Carrier</b>	4	12,000
<b>Tanker</b>	5	197,300
<b>Total</b>	<b>45</b>	<b>2,127,700</b>

*Table 2: Australian ships involved in overseas trade fleet, 2010-11<sup>3</sup>*

Australia uses a combination of its own and predominantly foreign-owned shipping to carry this trade. This is because the Australian overseas trading fleet is small, with 8 vessels under the Australian flag and 37 operating under a foreign flag (see Table 2).

If examined by deadweight tonnage, there were 375,700 tonnes under the Australian flag and 1,752,000 operating under a foreign flag. There were 27,162 port calls to Australia with 11,669 from overseas ships (as noted earlier, Australia has a considerable coastal trade); with 5315 cargo ships visiting Australia, 4231 of which are from overseas. While the shipping industry terminology appears opaque, these numbers demonstrate that the majority of Australian trade is carried in non-Australian-owned shipping operating under foreign flags. This has implications for the protection of this shipping if it were to be disrupted or attacked by a potential adversary, as generally, only a state's flagged shipping can be 'protected'.<sup>4</sup>

Another important aspect is the direction of Australian seaborne trade, that is, those countries with which Australia trades. From a regional perspective in Table 3, the majority of Australian trade goes to/from North and East Asia (China, Japan and Republic of Korea), followed by Southeast Asia. By value, Australia exports more than it imports with North and East Asia; imports more than it exports with Southeast Asia; and overall, its exports outweigh imports.

The trade with Asia is significant, and crucially, trade with North and East Asia often transits Southeast Asian waters, as do some components of Australian trade with the Americas. The Indian Ocean is important for Australian trade with Europe, South Asia, the Middle East and Africa.

All Australian-Asian trade passes through Southeast Asia, either to the ASEAN states or to North Asia. Given this direction, the shipping routes through Indonesia, the Torres Strait, and around Papua New Guinea and Solomon Islands are critical for Australian economic security. As examples of how the final location for goods shipped determine which route is selected, Australian iron ore exports from west

	Exports		Imports		Total Trade	
	\$ billion	million tonnes	\$ billion	million tonnes	\$ billion	million tonnes
<b>East Asia</b>	73.5	415.2	35.1	12.3	108.6	427.5
<b>Japan/Koreas</b>	68.0	326.9	22.3	10.2	90.3	337.1
<b>Southeast Asia</b>	25.6	33.5	35.6	29.7	61.2	63.2
<b>Europe</b>	12.8	26.9	27.1	5.2	39.9	32.1
<b>Americas</b>	10.5	14.6	18.6	7.9	29.1	22.5
<b>Oceania</b>	8.5	6.2	7.4	7.9	15.9	14.1
<b>South Asia</b>	12.6	38.7	2.2	0.8	14.8	39.5
<b>Middle East</b>	6.4	11.2	5.3	7.8	11.7	19.0
<b>Africa</b>	3.6	6.4	4.7	5.4	8.3	11.8
<b>Rest of World</b>	1.2	1.9	2.6	4.9	3.8	6.8
<b>TOTAL</b>	<b>222.7</b>	<b>881.5</b>	<b>160.9</b>	<b>92.1</b>	<b>383.6</b>	<b>973.6</b>

*Table 3: Australia's regional trading partners, 2010-11<sup>5</sup> (may not add due to rounding)*

coast ports to Southeast Asia will use the Sunda Strait, those to China will use the Lombok Strait, and those to Japan and South Korea will skirt around the east of Timor Leste. Coal exports will use the designated east-west sea lanes through Indonesia, skirt west of Irian Jaya or east around Papua New Guinea if coming from east coast ports.<sup>6</sup>

And interestingly for all the discussion over maritime security issues in the Malacca Strait and the direct impact on Australia if trade there was affected, that strait is actually less important to Australia than other shipping routes as a first-order effect. But to demonstrate the interdependence of trading states, the Malacca Strait is critical to the economies in both Southeast Asia and more importantly, to those in North and East Asia. As these states are Australia's major trading partners, their security concerns regarding free navigation in the Malacca Strait, ultimately become a concern to Australia as second- or third-order effects.

It is not possible to reconcile publicly available current Australian seaborne trade and shipping data with their associated shipping routes, but a study released in 2007 provides a broad indication of the total shipping used to move Australian seaborne trade in 2004-05 (see tables 4 and 5).<sup>7</sup>

The purpose of this section is not to provide a detailed analysis of Australian seaborne trade. Rather it is an overview to demonstrate that the value of seaborne trade is critically important to the national economy, and that it is the volume of trade that drives the shipping task and ultimately the shipping protection task if required.

	Tanker	Gas	Passenger	Livestock	Dry Bulk	Liner	General	Dry Bulk/Oil	Other	Total
Malacca Strait	19	0	-	7	91	41	9	6	-	175
Sunda Strait	168	14	7	46	329	159	64	7	20	814
Lombok Strait	56	15	6	40	749	-	40	18	7	933
Indonesia (E-W)	128	4	-	4	197	162	110	7	15	628
Timor Sea/ Philippines	9	78	-	10	380	-	19	-	3	506
West of Irian Jaya	68	-	-	5	815	387	38	11	-	1328
Torres Strait	217	5	3	9	890	582	138	14	6	1864
East of PNG	44	4	4	6	1121	11	209	-	-	1403

Table 4: Ship movements to Australia, by ship type, 2004-05 (will not add due to rounding and confidentiality of some figures)

	Tanker	Gas	Passenger	Livestock	Dry Bulk	Liner	General	Dry Bulk/Oil	Other	Total
Malacca Strait	6	-	-	6	119	99	3	-	0	236
Sunda Strait	165	7	4	42	158	292	75	4	17	764
Lombok Strait	58	12	5	41	670	3	90	12	13	904
Indonesia (E-W)	128	8	0	-	432	69	60	4	12	714
Timor Sea/ Philippines	13	88	-	3	381	-	34	-	4	530
West of Irian Jaya	46	-	0	7	357	207	41	4	0	664
Torres Strait	203	8	-	6	765	304	117	7	5	1416
East of PNG	19	4	-	6	896	163	120	-	-	1213

Table 5: Ship movements from Australia, by ship type, 2004-05 (will not add due to rounding and confidentiality of some figures)

An important fact is that Southeast Asia assumes greater strategic importance to Australia, but based on economic factors rather than the traditional security concerns over a possible invasion coming from or through the region or illegal immigration and fishing. Australia has thus focused on political stability and aid for economic development to maintain this stability within Southeast Asia as a defensive measure, while appearing to ignore the strategic maritime economic importance of the region.

The importance of the need to protect seaborne trade effectively disappeared from government consideration after the Cold War. However, it has recently come to the fore with greater recognition that as an island, the ability to trade is a vital national security issue. Hence greater research and analysis on the defence or national security implications of Australian seaborne trade is necessary.

## Threat and Response

Determining the threat to seaborne trade is not as simple as it sounds, as the types, and who, what and why of threats has changed over time which naturally has implications for a variety of response measures. At a general level, a threat might originate with another state (the standard *guerre de course*) or increasingly from non-state actors that might not be targeting a specific state, rather opportunistically against the global maritime transportation system.

### Is there a threat to seaborne trade?

Turning first to the possibility of a state directed threat to shipping - either against a specific adversary or at all shipping in a broad geographical area - historical experience plays a role when thinking about the issue. In the 20th century, attacks on shipping were an important aspect of the maritime component of both world wars (with considerable economic impacts on states as well as on their ability to fight). From this experience arose a number of lessons that were incorporated into a global protection system that existed throughout the ensuing Cold War and continues in a modified form today.

While the idea of attacking an opponent's seaborne trade goes back centuries, it was with the advent of the submarine, torpedo and sea mining that this strategy came close to success during the 20th century. During both world wars Germany adopted *guerre de course* as a strategy against the Allies to drive them out of the war by denying them war materiel and food. In World War I (WWI), total allied losses of merchant shipping totalled nearly 13 million tons (5516 ships), of which Britain lost nearly 8 million tons. In World War II (WWII), total allied merchant shipping losses were just over 21.5 million tons, where Britain lost 2919 merchant ships comprising just over 14.5 million tons. Similarly the United States destroyed the Japanese merchant marine (nearly 8.5 million tons) and most imports of raw materials and food in order to weaken Japan's ability to continue the war.<sup>8</sup>

The last major campaign against shipping occurred nearly 30 years ago in what has been called the 'Tanker War', during the war between Iraq and Iran in the 1980s, where a stalemate on land led to attacks on each other's oil refining industries, port facilities and international shipping in the Strait of Hormuz, in an attempt to damage the economic ability of the other to continue fighting. Over the eight-year period, more than 546 ships were attacked, with about 400 seamen killed and 40 million deadweight tonnage shipping lost. The estimated economic cost of these attacks on shipping were estimated at about \$2 billion, of which about \$450 million was for ships trapped in port when hostilities broke out.<sup>9</sup>

Importantly, at this level of warfare the aim is the destruction of the ships, crew and cargo to stop the shipments of goods and importantly the ability to ship goods in the future.

The standard defence methodology for assessing threat is capability plus intent; that is, does a potential adversary have the capability to threaten seaborne trade and does the intent to threaten seaborne trade exist. Unfortunately much naval commentary tends to focus on the capability aspect of the equation but not intent. Again at a broad level, most navies have the capability to threaten trade, perhaps not for sustained economic warfare, but enough to worry an adversary and the international shipping industry. But given the economic interdependence of many states brought about by globalisation, no state appears to have the intent to seriously threaten seaborne trade. Iran might threaten to close the Strait of Hormuz to trade, oil tankers in particular, in a limited sense analogous to 'threatening' trade, but it has not occurred. China is concerned that its shipping might be interdicted in the Malacca Strait, ostensibly by the United States or possibly India, but there is no indication that these, or other, states have any such intent. What is at issue is that the entire maritime transportation system is vulnerable to disruption, not necessarily attack in a naval sense, and response planning should be on that basis.

And seaborne trade today is subject to disruption not only by states, but by non-state actors, often in the guise of sea robbery or piracy. While piracy has existed for as long as there has been seaborne trade, there has been a marked increase in low-level attacks on shipping. Low-level in the sense that the objective is not to destroy ship, cargo and crew as occurred in the world wars, but rather actions ranging from the theft of goods from the ship; stealing the ship and/or cargo; through to ransom of the ship, cargo and crew. While individuals on an opportunistic basis might steal from a ship, larger scale thefts and hijackings are the province of criminal gangs.

Over the past 15-20 years piracy or in many cases robbery at sea, has increasingly become a maritime security issue, but it is an issue fraught with ambiguity and jurisdictional problems. Data from the annual piracy reports published by the International Maritime Bureau (IMB) indicates that reported incidents of piracy were approximately 100 cases a year in the early 1990s, before beginning to rise in 1995 (188 cases) and peaking at 469 cases in 2000 and peaking again at 445



cases in 2003 before improved maritime security measures in Southeast Asia led to a reduction (see Table 6). But from 2009 there was a major upswing in piracy off Somalia with reported cases of piracy peaking at 445 cases in 2010 before counter-piracy arrangements off the Horn of Africa started to deliver a meaningful effect.

It is also important to recognise that IMB piracy data is at best indicative, as the information gathered and reported must be used with caution due to methodological and jurisdictional problems. At an aggregated level, the data includes both actual attacks and 'attempts' (not readily defined). The data does not differentiate between where the attacks occurred, for instance a ship attacked while steaming might be an act of piracy, whereas a ship attacked while anchored or berthed might be sea robbery - geography becomes jurisdictionally critical. At a methodological level the data is based on reports that might overstate attempts while understating actual attacks (which might require a ship to delay passage to discuss the incident with authorities).

In modern times sea robbery and piracy are rarely directed at a specific state, as it is geographically based and is both indiscriminate and random, making responses - particularly naval ones - problematic. Significantly the focus of these activities is personal financial gain, not the destruction of ship and cargo, so these types of attacks do not destroy the ability to trade, but might cause limited disruption to trade.

The other non-state actor concern is the possibility of maritime terrorism that might involve sinking ships, either to block narrow passages, port entrances or other focal points, or to create an environmental disaster; using the ship as a weapon, either to attack land infrastructure through collision or explosion; or by incapacitating the crew so that the ship continues underway along a busy strait, risking collision with other ships; or by carrying a weapon of mass destruction (WMD). While a valid concern, much of the debate is theoretical and based on security vulnerabilities within the maritime transportation system that might be exploited rather than a direct threat. The recent (and only) incidents of maritime terrorism - the hijacking of MV *Achille Lauro* and murder of a US citizen in 1985, the attempted attack on USS *Sullivan*, successful attack on USS *Cole* in 2000, the attack on MV *Limburg* in 2002 and the bombing of MV *Superferry14* in 2004 - do not prove a current threat to seaborne trade. And the response, as will be discussed below, has been regulatory in nature.<sup>10</sup>

When examining the types of threat that might be posed by non-state actors, a risk assessment is often used. At its simplest, this risk assessment examines the likelihood and consequences of possible activities to assign levels of risk to determine appropriate responses. Applying this type of assessment to sea robbery/piracy, the likelihood of it occurring in certain parts of the world is high, but because of the size of the shipping industry and the actual number of ships attacked, the consequences in an economic sense are actually quite low. That of course would not be the perspective of innocent crews subject to attack. Applying the assessment to

	'92	'93	'94	'95	'96	'97	'98	'99	'00	'01	'02	'03	'04	'05	'06	'07	'08	'09	'10	'11
GT	106	103	90	188	228	248	202	300	469	335	370	445	329	276	239	263	293	410	445	439
SEA	73	15	33	48	72	91	98	158	242	153	153	170	156	102	83	70	54	45	70	80
IW	55	11	25	33	57	47	60	115	119	91	103	121	94	79	50	43	28	15	40	46
M&SS	20	4	3	4	5	5	2	15	80	24	21	30	46	19	16	10	8	11	5	12
Som	1	1	1	14	4	5	9	14	22	19	17	21	10	45	20	44	111	117	219	237

GT: Global total

SEA: Southeast Asia

IW: Indonesian Waters

M&SS: Malacca & Singapore straits

Som: Somalia

Table 6: Reported Piracy Attacks 1992-2011.

Source: International Maritime Bureau, Piracy and Armed Robbery Against Ships - Annual Report, various years.

possible incidents of maritime terrorism, specifically WMD, the likelihood would appear low but the consequences would be high (catastrophic). This implies what is needed is the ability to forestall/respond to an incident rather than there being a direct threat.

Before looking at possible response options, some further issues need to be considered. Whether possible attacks are state directed, implying destruction of ships and cargo, or are disrupted (delayed) due to instances of sea robbery/piracy, the just-in-time stockholding philosophies in place around the world mean any disruption to trade will soon have an impact on affected economies. And given the level of global economic interdependence, such disruptions would flow through the trading system progressively affecting other states, implying a need for, and recognition of, the critical importance of naval and maritime force cooperation to ensure good order at sea. An emerging security issue that has not been fully examined or addressed is cyber. If a state's economy is susceptible to trade disruption then that trade does not necessarily need to be destroyed, as a cyber attack on either port activities or ship navigation may well achieve the desired result.

Hopefully what has been shown is that while the threat to international seaborne trade is currently low, both at the state-directed level and also by non-state actors, the maritime transportation system is vulnerable and that vulnerability is being exploited by non-state actors.

How then do states and the shipping industry respond to these threats/vulnerabilities?

### **Responding to the threat**

In reaction to attacks on shipping in WWI, a convoy protection system was created in the conflict's later stages, which eventually reduced the German sinking of Allied merchant shipping. While the need to practice and refine procedures during the interwar period was recognised, reductions in defence spending before and during the Great Depression saw experience and skills dissipate. The convoy protection system was activated just before the outbreak of WWII and flowed into the Naval Control of Shipping (NCS) arrangements put in place during the subsequent Cold War.

Attacks on shipping during the world wars were in the context of total war, where all the resources of the participants were directed towards fighting the war, in essence, a battle for survival. A conclusion drawn from WWII was that shipping must be protected and that it would be on a worldwide basis. Four broad strategies, with a number of subsets, evolved from this historical experience and are used by navies to protect merchant shipping:

- Independent sailing involves fast merchant ships sailing singly and without an escort, and imposes the least restrictions on the shipping industry. A subset of this strategy is focal area protection where independent sailing continues but protection operations might be undertaken in areas where there are high volumes of shipping.
- Protected lanes involves sanitising a geographical area against threats, where protective forces are assigned areas of responsibility for escorting and aggressive patrolling; shipping would be required to transit along designated lanes/routes. A subset would be distant escort where instead of protecting selected sea lanes, naval forces provide a deterrent and reprisal force if attacks occurred.
- Rerouting involves directing ships away from danger areas where an adversary's forces are thought to be operating.
- Convoying is the movement of merchant ships in organised groups escorted by warships, with 'convoy' referring to the ships being escorted. A subset would be accompaniment for high-value cargoes through medium- to high-threat areas. This differs slightly to convoy as there is less control than in a formal convoy.<sup>11</sup>

Recognising lessons learned in WWII and that shipping was vulnerable to attack, a global protection framework was developed. During the Cold War, extensive arrangements were put in place to ensure the protection of both military and merchant shipping, predominantly moving across the Atlantic Ocean from the United States to Europe but also globally, in order to reinforce NATO in the event of war. This administrative framework, NCS, was guided by the then-*Allied Naval Control of Shipping Manual*, enforced mandatory reporting, routing and the organisation of merchant shipping in times of tension or major conflict. During times of tension, naval authorities were to provide organisation for controlling and protecting shipping, while the management, operation and crewing of merchant ships remained with the shipping companies.

The type of organisation that might be used for controlling and protecting shipping dates back to WWI, where traditional combat forces were augmented by specialist trade-focused navy units, initially called NCS, now Naval Coordination and Guidance for Shipping (NCAGS) or Maritime Trade Operations (MTO), depending on the country. These units, staffed by differing mixes of fulltime and reserve personnel, provide specialist advice to inform military operations about commercial maritime industry operations and, importantly, provide an enduring conduit to the commercial maritime industry that maintains necessary relationships that can be called upon at short notice.

While the two world wars were ‘total’ wars, many post-1945 wars have been ‘limited’ or ‘localised’ wars, leading to differing impacts on international shipping. Instead of a concerted effort to protect shipping, states have appeared content to ignore attacks on shipping caught up in these limited wars. This has been the case where international shipping has moved to flags of convenience, where a state opens its shipping register and where international shipping firms have cheaper costs than if they registered under their own state’s register. As the ship owners reside in one country, the insurers in another, the cargo belongs to someone else and crews of differing nationalities, the protection of shipping becomes more complex. Hence it is difficult to determine who is being threatened if shipping is attacked, and who is responsible for its defence. These issues are best illustrated by the Tanker War, where Iran and Iraq attacked neutral shipping with only a limited naval response until the latter stages of the overall Iran-Iraq War. While some ship escorts occurred, the issue of flag protection arose, where there was considerable debate over whether a navy could protect shipping not under its national flag.<sup>12</sup>

The end of the Cold War in 1989, combined with the experience of the Tanker War, showed that a shipping crisis could occur in a limited area rather than globally as envisaged under extant NCS arrangements. Thus there was a need for regional control of naval shipping, which was introduced into NATO doctrine in 1996, and evolved into NCAGS in 2000 as it was acknowledged that in order to assist in the protection of shipping, irrespective flag, a basic level of cooperation was necessary between navies and the shipping industry.<sup>13</sup>

Thus, in response to any state-directed attacks on merchant shipping, a framework for cooperation and response is in place, but arrangements and response options against non-state actors is less clear, as resolution to these types of incidents is law enforcement (and a naval constabulary role) rather than high-end warfare. What then has been the response to sea robbery/piracy?

Looking at Southeast Asia in general and the Malacca and Singapore straits in particular, for many years there were ineffectual bilateral naval patrols conducted by the littoral states of Indonesia, Malaysia and Singapore. But with increasing reports of piracy (often sea robbery), threats of external intervention and a rise in ship insurance rates, coordinated trilateral (MALSINDO) patrols commenced in 2004, and evolved into the Malacca Strait Security Patrols that also incorporate improved maritime surveillance under the Eyes-in-the-Sky initiative, supplemented by Thailand. Over the last few years Malaysia created its Maritime Enforcement Agency to manage these constabulary activities and the Singaporean Navy created its information fusion centre to manage information on a regional basis.<sup>14</sup> And at a regional level, the *Regional Cooperation Agreement on Controlling Piracy and Armed Robbery Against Ships in Asia* came into force in September 2006, which, with an information sharing centre based in Singapore, facilitates the exchange of information to member parties.<sup>15</sup>

The piracy situation off Somalia led to a number of United Nations Security Council resolutions authorising international counter-piracy action, including the ability to operate in Somalia's territorial waters. Many states have deployed naval forces (albeit usually only one or two ships) to the area, where they have been split into three task forces under NATO, European Union or Combined Maritime Forces command. A number of navies have been operating independently of these task forces but coordinating their activities through the monthly 'shared awareness and deconfliction' meetings. One major innovation was the creation of the Internationally Recommended Transit Corridor in the Gulf of Aden and subsequently endorsed by the International Maritime Organization (IMO), allowing group transits of shipping through high-risk areas.<sup>16</sup>

The shipping industry also began improving the security of its ships, with enhanced protection measures to ward off potential pirates from gaining access to the vessel, and protected areas - citadels - onboard some ships if pirates were to take over the ship.<sup>17</sup> There is also an increasing use of private military security companies to provide armed guards onboard ships to deter acts of piracy. These long-delayed actions by the shipping industry are a partial recognition that in the first instance, the ship owner is responsible for ship security, and at a more practical level, there are not enough naval forces available to offer the level of protection sought by the industry in high-risk waters without the activation of NCAGS.

To address the emerging threat of maritime terrorism, under IMO auspices a range of measures were introduced to improve maritime safety and security. In December 2002 the international community agreed to amendments to the *International Convention for the Safety of Life at Sea 1974* (SOLAS). A new chapter, Chapter XI-2 *Special Measures to Enhance Maritime Security*, was included in SOLAS and the *International Ship and Port Facility Security (ISPS) Code* was introduced.<sup>18</sup> Its aim is to create an international legislative framework for regulating and assessing the security of international shipping and associated port facilities. In June 2008 a Long-range Identification and Tracking system was introduced to enable countries to identify all vessels transiting their waters and particularly those intending to enter port. And as a passing observation, while the ISPS Code was aimed at the possibility of maritime terrorism, it also assists in ship and port security and thus aids anti-piracy activities.

## Implications for Australia

Australia has always relied on seaborne trade and initially everything came by sea until over decades it could begin to produce its own limited manufactures. As most of this trade was initially with Britain and Europe, Australia was directly affected in both world wars, as it was part of a global (empire) trading system. Following WWII, as Britain's trade moved towards Europe, Australia focused on Asia; first with Japan a major partner and now China. Clearly Australia's economic prosperity is directly linked with that of Asian states.

But what is the Australian experience of attacks on seaborne trade? While some of its military transport and logistics were convoyed in WWI, there was no sustained attack on Australian shipping, although being part of an empire-wide trading system, Germany did in fact plan to attack Australian seaborne trade (wool exports in particular) to place pressure on the ability of Britain to fight a European war.<sup>19</sup> In WWII, military and commercial shipping was again convoyed, but there was a dedicated Japanese attack on Australian coastal shipping over the period 1942-43 that saw up to 24 vessels sunk (117,900 tons). Also operating off the Australian coast was a German U-boat that sank two vessels.<sup>20</sup> But to demonstrate the difficulty in determining shipping losses, a more recent assessment of losses in Australian waters estimated there were 98 attacks by German and Japanese submarines leading to 56 vessels destroyed.<sup>21</sup>

The physical threat that could be applied to Australian seaborne trade includes attacks on shipping at sea, attempts to close Australian ports and channels through mining, or the attempted closure of strategic sea lanes (predominantly the Indonesian archipelagic sea lanes). An important issue is whether Australian trade is being targeted specifically or whether it is caught up in a regional conflict. A related issue concerns the ability of a potential enemy to correctly target Australian shipping, and the difficulty in identifying differences between Australian-owned coastal shipping and foreign-owned international shipping.

As noted earlier, cooperation in the protection of shipping is now the norm, so an adjunct to, but independent of, NATO arrangements in the Atlantic Ocean, the Radford-Collins Naval Control of Shipping Agreement between the United States, the United Kingdom, Australia and New Zealand was signed in 1951, aiming to coordinate efforts at protecting merchant shipping and anti-submarine warfare operations during periods of tension or war, by delineating national areas of responsibility for naval control of shipping, local defence and anti-submarine warfare in the Indian and southern Pacific oceans.<sup>22</sup>

Under these and NATO arrangements, regular NCS/NCAGS exercises have been conducted for decades around the world, ranging from simple 'paper' exercises on how to coordinate merchant shipping and naval forces, a presence in ports and on wharfs dealing with merchant shipping, to actual escorting merchant shipping. As examples, exercises RIPCORDER and ROLLER COASTER were conducted between Australia, New Zealand, Canada, the United Kingdom and the United States in the 1970s. In the 1980s they were replaced by Exercise ROLL CALL in the Pacific area (even years); and the global Exercise EXPANDED SEA (odd years), which dovetailed into NATO exercises WINTEX, TRADE WIND and TRADE DAGGER.

Supplementing the Radford-Collins Agreement is the Pacific and Indian Oceans Shipping Working Group (PACIO SWG), established after the Cold War to consider and exercise NCAGS doctrine and procedures, through Exercise BELL BUOY. Current members are Australia, New Zealand, the United States (which also guards

for Japan), Canada, Chile, Singapore, the Republic of Korea, the United Kingdom and most recently South Africa and Brazil. Both the United States and United Kingdom are also members of the NATO Shipping Working Group and provide the link between it and the PACIO SWG.<sup>23</sup>

With the progressive collapse of the Eastern Bloc, BELL BUOY became a stand-alone exercise and from 1989 Chile and the Republic of Korea participated. Recognising that in the future threats would be of a regional nature, BELL BUOY evolved into an umbrella organisation for a group of national, bi-national and multi-national exercises, using the same exercise name and dates, and following the same broad aims and objectives. In 1997 it was recognised these arrangements were unrealistic due to the lack of connectivity between national scenarios and it was agreed that one nation would plan and conduct the exercise with other nations contributing resources as appropriate. BELL BUOY in 1999 tested regional NCS doctrine in support of maritime interdiction operations from various ports around the Arabian Gulf. These exercises may be either command post exercises, which test the administrative procedures involved in controlling shipping, or where fleet units are available, they may be utilised in actual scenarios. BELL BUOY is conducted annually in the Indian and Pacific oceans to test and evaluate procedures during a time of tension, and involves Australia, New Zealand, Singapore, Brazil, South Africa, the United States, Canada, the United Kingdom, South Korea and Chile, with a number of other states participating periodically as observers.

While sea robbery and piracy appear endemic in certain parts of the world, specifically Southeast Asian waters and off the coast of Somalia, there has been little or no impact upon Australian seaborne trade. Since 1997 there have been 17 reported attacks or attempted attacks on Australian-flagged or owned ships around the world, where only 5 incidents involved merchant shipping and the remainder were predominantly attacks on cruising yachts:

- In 1997 the tanker MV *Sea Kap* was berthed in Merak, Indonesia when four armed pirates boarded the ship but on mustering the crew, the pirates left.
- In 1998 the tanker MV *Nivosa* while at anchor in Santan, Indonesia was boarded by pirates and had ship's stores stolen.
- In 1998 the liquefied natural gas carrier MV *Northwest Sanderling* was in Indonesian waters when a high-speed boat chased and unsuccessfully attempted to board her.
- In 2000 the chemical tanker MV *Simunye* was in Indonesian waters when she was followed by another vessel for 40 minutes.
- In 2011 the livestock carrier MV *Maysora* was off Somalia when eight pirates in a skiff chased and fired on the ship, attempting to hijack her.



But to demonstrate the complexity of ownership and national interests, there have been at least three recent incidents where Australians or Australia has been affected by piracy:

- Ken Blythe was captain of MV *Petro Ranger* when it was hijacked in 1998.<sup>24</sup>
- In 2008, an Australian cargo of zinc and iron onboard the Panamanian-flagged MV *Stella Maris* was hijacked in the Gulf of Aden.
- In 2009, MS *MSC Melody* was cruising from South Africa to Italy when attacked by six pirates about 300km off the Seychelles; the ship, with Australian passengers onboard, was fired upon and the boarding was unsuccessful.<sup>25</sup>

In reaction to these attacks, it was reported in 2011 that piracy concerns led to the rerouting of Australian canola exports to Europe via the Cape of Good Hope, which added 10-12 days sailing, while wheat exports to the Middle East reportedly attract an additional risk-driven insurance charge of \$10,000 per day.<sup>26</sup>

In 2003, within what is now the Department of Infrastructure and Transport, a security division was created which became the Office of Transport Security, which amongst many tasks, implemented the ISPS Code through the *Maritime Transport and Offshore Facility Security Act 2003*. While Border Protection Command was created in 2006 to manage security in Australia's offshore zones. Since 2009, at an operational level, the RAN:

- has been involved in counter-piracy activities as part of its regular frigate deployments to Operation SLIPPER in the Middle East
- has placed an international liaison officer within the Singaporean information fusion centre
- under the Five Power Defence Arrangements, since 2004 some of its maritime exercise serials have focused on counter-piracy and counter-terrorism.

But there remains no apparent linkage to coordinate these activities.

In summary then, what does this mean for Australia?

Australia is heavily reliant on seaborne trade, the majority of which is carried on ships registered under other nations' flags and transit Asian waters.

There is no currently identifiable threat to Australian shipping, but historical wartime experience and recent non-state actor activities highlight that the maritime transportation system is vulnerable to both attack and disruption. Increased economic interdependence between states and just-in-time logistic management philosophies accentuate this vulnerability to any form of disruption, but this also suggests and encourages cooperation between states.

While response options to attacks or the disruption of shipping will vary depending on who, why and how, cooperation and coordination between navies and maritime forces is increasingly important and necessary, and while a variety of regional protection frameworks exist, doctrine and concepts should be under constant review, with procedures exercised regularly.

## Notes

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- 10 The *Achille Lauro* incident led to the development of the *Convention for the Suppression of Unlawful Acts against the Safety of Maritime Navigation 1988*, as well as its associated protocol concerning fixed platforms on the continental shelf.
- 11 While the basic strategies are well known - see HJ Donohue, 'Protection of Sea Lines of Communication - Potential for Regional Cooperation in the Western Pacific', *Journal of the Australian Naval Institute*, May 1990, pp. 61-63; for information on current arrangements and thinking I am indebted to Phil Johnston, 'Security of Maritime Trade: A Cooperative and Coordinated Approach

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  - 24 On 16 April 1998 *Petro Ranger* left Singapore bound for Vietnam, carrying 9600 tonnes of diesel and 1200 tonnes of aviation fuel valued at A\$3.2 million. She was hijacked three hours outside Singapore's territorial waters, was 'renamed' *Wilby* and reflagged from Singapore to Honduras. Six days later, while transiting to her new destination of Hankow in China, some of the diesel was discharged into a 2000- and a 4000-tonne vessel, and four days later more diesel was discharged into a 1000 tonne vessel; in all, 5000 tonnes of diesel was stolen leaving cargo valued at A\$1.75 million. On arrival in China, it became apparent the pirates wished to register the ship as *Wilby* and then sell it for its insured vale of US\$16 million. The original crew managed to escape and

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# The Importance of the Australian Hydrographic Service to Seaborne Trade

*Jenny Daetz*

Just as a responsible motorist would not drive a vehicle with their eyes closed, and the captain and first officer flying you to your destination would use all available means to get you there safely, responsible mariners keep a diligent lookout for where they are going. But a mariner has the obvious additional challenge of not being able to see what exists underwater; thus the reliance on the nautical chart. It was once often considered that any data available to inform the mariner on how to get from one port to another was arguably better than nothing, but today due to economic and environmental pressures as well as maritime industry expectations, the information on a nautical chart must be reliable, of high quality and current. Hydrographic Offices across the globe continually work towards acquiring quality data and then producing products that best assists the mariner to navigate safely.

In Australia the national hydrographic authority is the Australian Hydrographic Service (AHS) which is a branch of the RAN.<sup>1</sup> It is responsible for the timely delivery of reliable products that meet the requirements of the maritime community.<sup>2</sup> The nautical chart is just one of those products. A nautical chart is a 'road map' for ships, and whilst a map primarily provides options for a traveller on how to navigate from one place to another, a nautical chart also contains essential information to do it safely.<sup>3</sup> Any information that cannot be easily depicted on a chart is contained in complementary nautical publications. With ever increasing traffic, larger ships, tighter timeframes, economic pressures and competition for limited resources and facilities, these 'roads', the sea lanes, are constantly under increasing pressure. Shorter and more direct routes are continually sought, some existing sea lanes need to be wider and/or deeper, and additional 'parking bays' (anchorage) are needed. These pressures only increase the need for reliable, timely and regular updates for charts and publications.

Hydrographic surveying and charting within Australia's area of responsibility is a consequence of Australia's significant reliance on maritime trade for economic prosperity.<sup>4</sup> AHS efforts contribute directly to safety of navigation which facilitates safety of life at sea, safeguards the maritime industry and protects the environment. Sometimes it is easier to highlight the importance of a service by assessing the impact if it were to cease or did not exist. However, with 25,000 commercial voyages in Australian waters each year, equating to more than \$300 billion in trade

and greater than 99 per cent of trade by weight, it is not worth the risk, let alone the risk to lives, livelihoods or the environment.<sup>5</sup> The provision of hydrographic services is essential.

## Why Hydrography?

In earlier years countries used their navies to pioneer new trade routes. Subsequently, they needed to protect these routes and their valuable cargo, but to do this they needed knowledge of the seas and oceans to enable freedom to manoeuvre. This saw the development of hydrography. During these years hydrographic information was zealously guarded by individuals, trading companies and governments as it gave them the commercial advantage of safe access to trading ports. Eventually hydrographic data became shared for both wider commercial benefit and improving safety of life at sea. World Hydrography Day is celebrated on 21 June each year and in 2012 it is focused on how international hydrographic cooperation supports safe navigation.<sup>6</sup> Hydrography is a science which provides the fundamental information for all maritime operations. In addition to seaborne trade, modern maritime operations also include tourism, national security, port and coastal zone management, climatology, and inundation modelling, not to mention numerous defence applications.

Open any Australian port's annual report over the past decade and the statements of 'actual increase' and 'forecasted increase for next year' are common themes. The state of the terrestrial infrastructure to move goods and freight in and out of these ports has deservedly received renewed attention. But whilst it is easy to recognise the terrestrial congestion, the offshore and out of sight networks are often overlooked. Add to this the complexity of the maritime environment where sea lanes, unlike road lanes, are not as easily delineated or as easy to follow, and the risk of a maritime incident occurring increases.

Australia's charting area comprises one eighth of the world's surface, a total of more than 13 million nm<sup>2</sup>. With a coastline of 32,255nm, significant areas remain unsurveyed or poorly surveyed. Some of these areas are adjacent future planned ports and offshore facilities. But just as the maintenance of land infrastructure is divided up according to jurisdictions, so is the maritime infrastructure.

Ports and commercial operators take the responsibility for surveying their own ports and offshore installations but the highways which link these ports and installations used by local, national and international shipping remains a national task. Regardless of who conducts the hydrographic survey, it is the AHS which is the charting authority. By having one national authority which is engaged regionally and internationally, and signatory to the standards and specifications of the International Hydrographic Organisation (IHO), a level of consistency is ensured for the global mariner whilst in Australia's waters.

However, it is not only the product that must meet the standard, but also the data collected to produce the product. To achieve this, the AHS has actively supported and promoted the development of the Australasian Hydrographic Surveyors Certification Panel.<sup>7</sup> Its role is to certify hydrographic surveyors to an international standard which not only ensures a level of quality for data submitted to the Hydrographic Office for charting action, it also provides an industry regulation measure for ports and customers contracting or employing surveyors for hydrographic services.

## Hydrographic Program

The AHS is reliant on the maritime industry and other government agencies such as Australian Maritime Safety Authority (AMSA) and the National Maritime Safety Authority of Papua New Guinea to prioritise areas requiring hydrographic surveys as well as new products or publications including new charts or chart editions. All submissions are prioritised and formulated into a surveying and charting program and published annually as *Hydroscheme*.<sup>8</sup>

*Hydroscheme* is a whole of government program endorsed by the Chief of Navy and lists the surveys identified over a three year period to be undertaken by the RAN Hydrographic fleet. The size of the task always exceeds the resources available but the RAN has proven it can augment its organic capability with contracted surveys to meet government priorities. The fleet consists of two *Leeuwin* class hydrographic ships, four *Paluma* class survey motor launches, the Laser Airborne Depth Sounding unit and small deployable teams. *Hydroscheme* also lists the charting and publication program which is undertaken by the men and women in the Australian Hydrographic Office.

## Short Notice Hydrographic Operations

But not all hydrographic surveying tasks can be planned. Operation QUEENSLAND FLOOD ASSIST was the Australian Defence Force (ADF) contribution to the whole-of-government flood rescue and relief efforts, and was initiated in response to the devastating Christmas/New Year 2010/11 floods. The Hydrographic fleet assets deployed at short notice from their home port in Cairns and assisted the Queensland Government by providing clearance confirmation surveys of the waterways in both the Brisbane River and Moreton Bay. This was an essential task prior to the resumption of port operations, not only in one of Australia's busiest ports but one heavily reliant on the port to facilitate the delivery of resources for the cleanup.

As the Queensland flood situation began to stabilise, a new threat to the northern Queensland community developed in the form of severe Tropical Cyclone Yasi. For the second time within a month, Defence directly delivered much needed emergency support to the civil community.<sup>9</sup> Navy's contribution included deploying a survey motor launch to Townsville for a port clearance confirmation survey. Less than 48



hours after the cyclone lashed the coast, business was able to resume at the Port of Townsville after HMAS *Benalla* gave the channel the all-clear; again providing a vital logistic link for post cyclone recovery for the region.<sup>10</sup>

## Charts and Navigation Products

The Australian portfolio of paper charts is in excess of 450. However, it has been proven time and time again that when relying on paper charts alone, maritime incidents still occur - even in well surveyed areas. In order to reduce the risk of wandering into unsurveyed waters or veering out of a sea lane into a hazard, the International Maritime Organization (IMO) encourages all vessels to use smart data in combination with real-time positioning in a computer based system.

It is anticipated employment of Electronic Charts Display and Information Systems (ECDIS) will lead to at least a 30 per cent reduction in groundings worldwide.<sup>11</sup> An internal study conducted by the Australian Hydrographic Office has confirmed this view. Of 240 maritime incident investigations in Australian waters between 1982 and 2007, 71 were groundings, of which 36 were the result of the mariner losing situational awareness.<sup>12</sup>

A fix on a paper chart only informs the mariner where their position was (if it was plotted accurately) and unless the next chart is referred to, it is not readily apparent what lies ahead. ECDIS constantly informs the mariner where they are in relation to dangers, what lies ahead as there are no chart boundaries, and with warning functionality enabled, alerts them to potential hazards. ECDIS is the real-time eyes for the mariner on what lay beneath and ahead as opposed to a paper chart which is a snapshot of the past and an estimate of the future. But of course ECDIS will not save a mariner from grounding if they choose not to use it, or if the warnings and alarms are manually over-ridden, or the operator has not been trained in the correct operation of the system.

In 2008, the IMO approved the proposal for the phased adoption of compulsory carriage of ECDIS for SOLAS class vessels. The phased adoption over the next six years commences from July 2012 with all new passenger ships above 500 gross tonnes and new tankers above 3000 gross tonnes.<sup>13</sup> For the AHS the introduction of ECDIS and the ongoing demand for intimate knowledge of the seabed surrounding the Australian continent for economic prosperity, environmental protection and national security, resulted in a number of projects and initiatives.

## Projects, Developments and Initiatives

ECDIS requires foundation data through the provision of Electronic Navigation Charts (ENC). This requirement was the major driver for the AHS to produce approximately 800 ENC covering ports and major shipping lanes between the Equator and Antarctica, around Australia and Papua New Guinea. This has now been achieved and these charts are distributed internationally through the Australian

regional ENC centre, a member of the International Centre for ENC network. It is essential for the international mariner that it is a seamless transition from one chart to another, not only within Australia's charting area but also when transiting between other state's charting areas.

The importance of being able to transition seamlessly from one chart to another resulted in the AHS simultaneously embarking on a chart modernisation project. The mariner could no longer accept switching between fathom charts and metric charts. Furthermore, ECDIS relies on the global positioning system, and therefore all information had to be referred to one datum (WGS 84). This has been a significant project requiring most of the effected charts to be fully reconstructed from source data. This project is in its final stages ahead of the commencement of mandatory carriage of ECDIS.

Now that these ENC exist it is just as important that they are readily available to the mariner. While Australian ENC are already available through major international distributors it can be difficult to acquire them. To assist with access within this region the AHS is expanding its local distribution through existing chart agents with a plan to develop online services. An increasing number of IHO member states in the region see the benefit to the maritime community for a regional approach so this service will be expanded to include these charting areas on a voluntary basis. This will especially benefit interstate and smaller commercial vessels and will also complement the existing international distribution arrangements and is in the spirit of international hydrographic cooperation to support safe navigation.

In a typical year, the AHS publishes approximately 1300 marine safety updates or *Notices to Mariners*. Mariners can now simply download the latest files including temporary and preliminary notices. This service has also been available online free of charge for paper chart users since 2009. By having this service available on the website it has halved the lead times in getting essential information to the mariner has improved the currency of information and reduced the risk of the information be overlooked or incorrectly applied.

It is uncertain to what extent the paper chart will still be the primary means of navigation in the future, but with the phased introduction of mandatory carriage of ECDIS for SOLAS vessels over the next six years and smaller vessels exempt from compulsory ECDIS carriage the paper chart will remain an essential navigation product for at least the immediate future. This duality posed a problem as the AHS is not resourced to maintain two separate chart folios. The requirement for both paper and electronic products effectively doubles our product base. One means of coping with this problem at present has been to adopt the ENC as the primary source and paper charts are produced from the foundation data of the ENC. While this sounds like a simple solution it requires significant management controls in a challenging database environment.

In the meantime, advances in printer technology and a continuing drive for national product improvements has provided the impetus to review the way paper charts were printed. Previously the AHS relied on a panel of commercial printers which resulted in lead times of up to six weeks. This meant that not only was there a requirement to predict future demand of chart orders, it also meant that by the time the chart arrived, the mariner would also receive a list of chart corrections. In late 2010, the AHS shifted to in-house printing with orders from individual agents and customers printed on demand using up to date print files. This initiative is realising a saving of 40 per cent in production costs but is also saving the mariner significant time and effort in applying the corrections and also reduces the risk of the corrections being applied inaccurately or overlooked.

However, not all the information the mariner requires can easily be displayed on a chart or a chart display system. As a result, navigation publications remain important sources of reference for the mariner. In addition to providing information about the marine environment, they also focus on the safe and legal use of Australian waterways. To assist the mariner with emerging needs we are reactive to the development of new products. For example, additional information was requested regarding guidance for the maintenance of hydrographic products, so the AHS recently published *AHP24 - The Australian Chart and Publication Maintenance Handbook*. It was produced at the request of the maritime industry and takes the guess work out of maintaining any chart type or publication and assists the mariner in meeting their international and national regulatory obligations.

To assist the mariner plan their voyage through Australia's charting area and maintain their charts an interactive 'Google Earth' enabled Australian chart index is available on the [hydro.gov.au](http://hydro.gov.au) website. This visual chart index enables the mariner to identify the required charts through a fly-over preview and also provides links to the relevant *Notice to Mariners*. Thus the mariner can confirm they have the latest editions which are up to date.

As mentioned earlier, increasing pressures on the maritime industry are driving the demand for new and wider sea lanes and higher accuracy charts. Areas such as the Torres Strait are chokepoints with no alternate options in the immediate vicinity. To improve seaborne trade efficiencies and at the same time maintain safe navigation, AMSA has introduced an Under Keel Clearance Management System.<sup>14</sup> Accurate real-time tides, and high order accuracy hydrographic surveys, are essential in order to increase the tonnage of potentially dangerous but often highly valuable cargo and freight, to reduce transit times and to meet critical time windows further along the route.

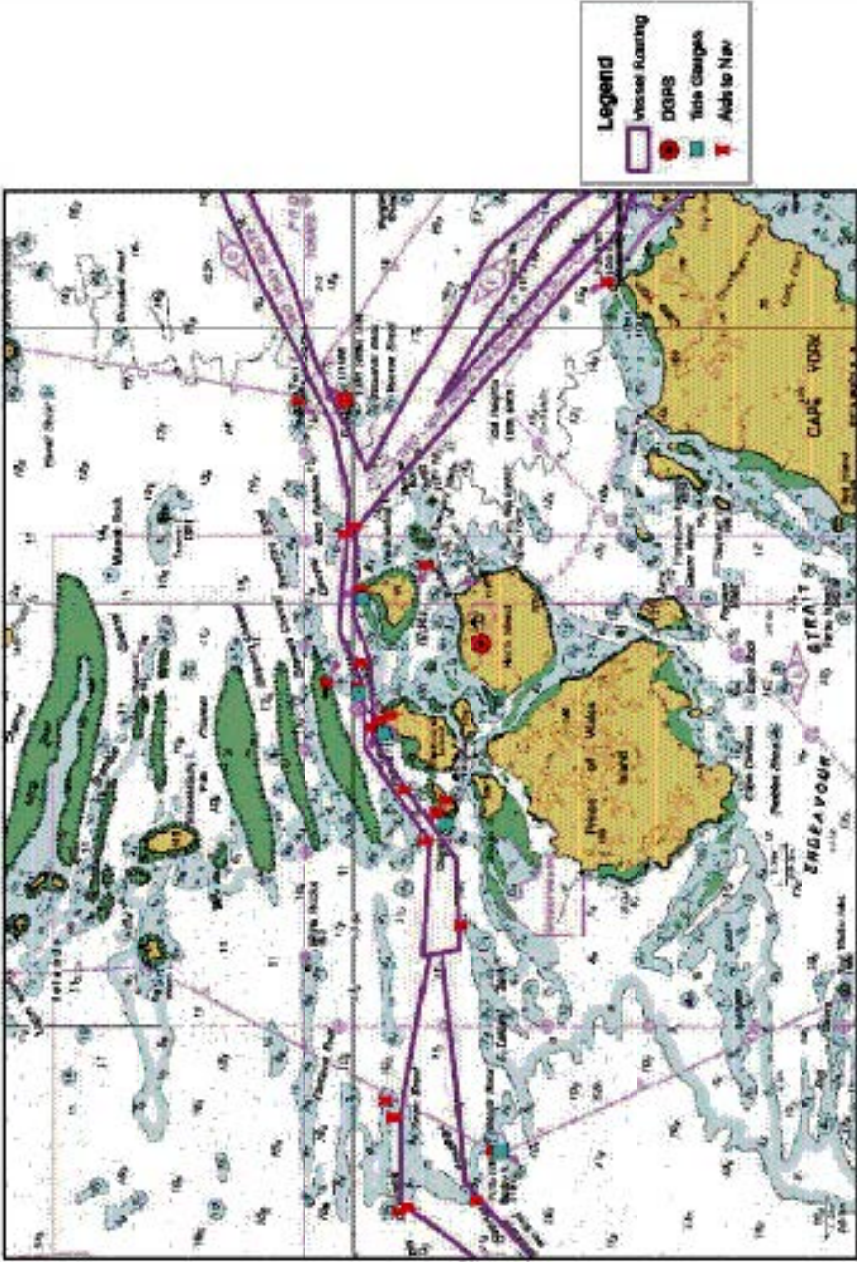
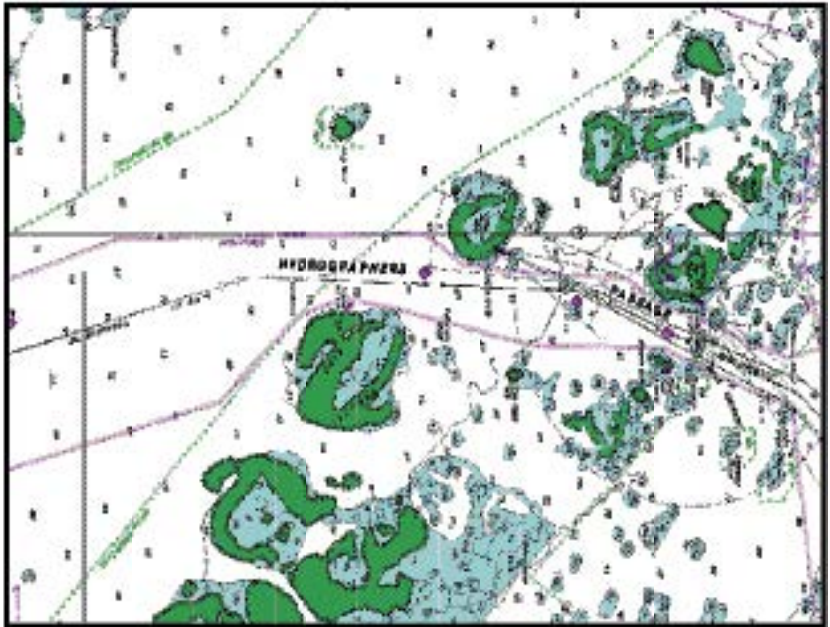


Figure 1: Torres Strait

**1965**



**2005**



*Figure 2: Hydrographers Passage*



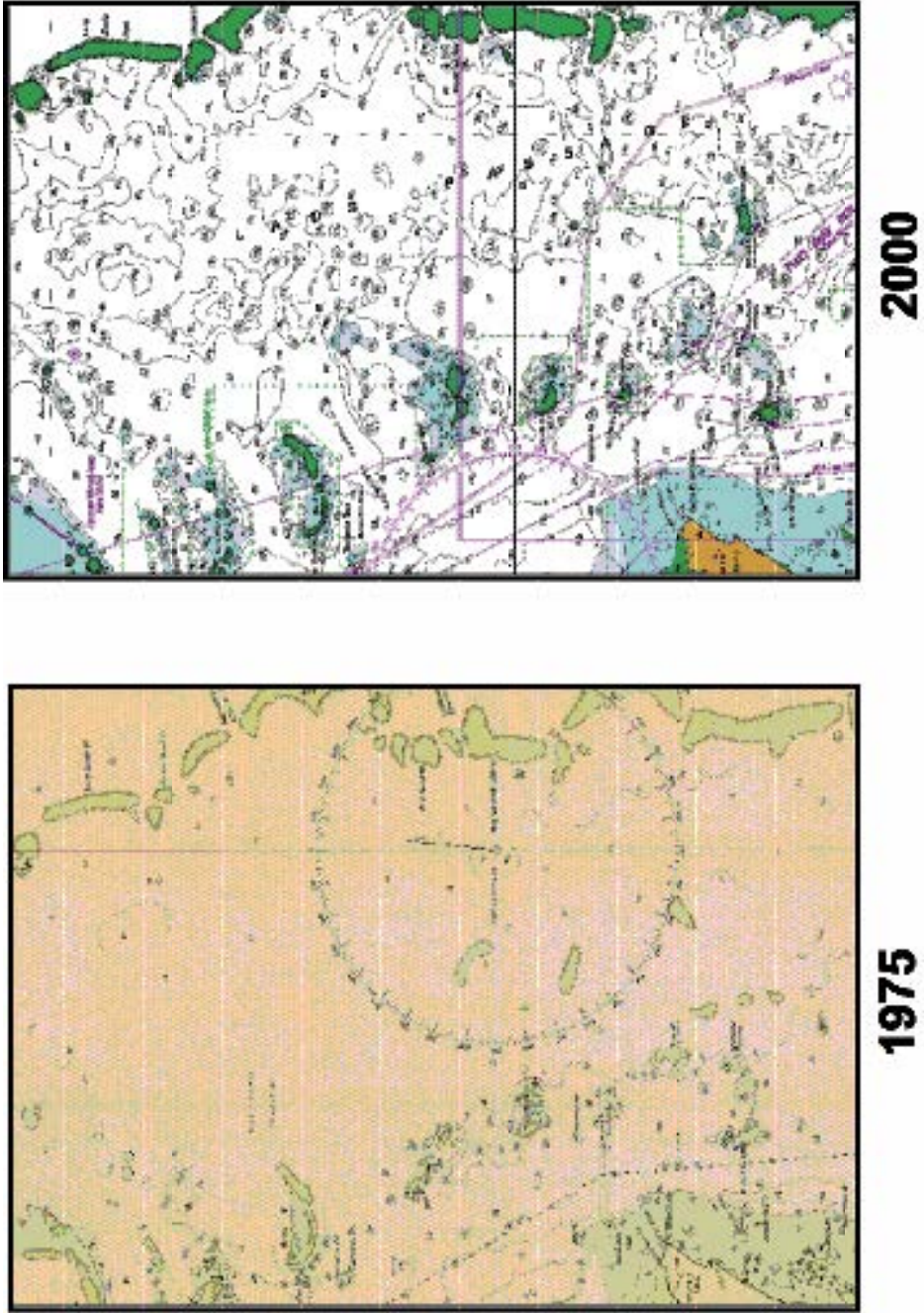


Figure 3: LADS Passage - The Great Barrier Reef

The RAN has been supporting AMSA in this highly vulnerable and strategically significant area of Australia by providing high density modern surveys to higher order accuracy using kinematic GPS, spheroidal and terrestrial high density tidal monitoring and high frequency sonars. Under keel safety margins set by AMSA are continually being challenged by the maritime industry which only increases the pressure for more accurate charts, leaving no room for error. It is worthy to acknowledge that the maritime environment in general is a hostile one with many external influences, for the navigator, master or pilot, but also for the surveyor.

The continual increase in seaborne trade and a sudden spike in maritime tourism, coupled with the obligation to support safe navigation in order to safeguard lives, livelihood and the environment means greater demand for safer routes and new routes to be opened. Hydrographer's Passage, Flinders Passage and LADS Passage are all examples of sea routes opened to support Australia's seaborne trade.

- Hydrographer's Passage, east of the Whitsunday Islands, saves 500nm for a round trip between Australia's coastal coal ports and Asian trading partners. It also reduces the amount of time spent inside the sensitive Great Barrier Reef.
- Flinders Passage is near Townsville and provides direct ocean access for ships using that port.
- The LADS passage reduces the voyage between Cairns and Cape York by approximately 18nm, reduces the amount of traffic required to use the relatively narrower and longer inner route through part of the Great Barrier Reef, and also has reduced the risk of a navigation incident by estimated 30 per cent.

Overall, the benefits are threefold. First, for some vessels it removes the tidal window restrictions, second it allows faster transit, and third it provides the master and pilot to rest, which assists fatigue management; a key factor for avoiding maritime incidents.

The future requirement for navigation products is driven by the dependency on seaborne trade and the race for improved trade efficiencies, alongside an expectation to safeguard lives, livelihoods, the environment and national security. The AHS will need to maintain effective international and regional engagement not just to ensure standards are maintained but also to ensure future innovative initiatives are realised so that the products and services provided by the AHS remain relevant to the needs of the mariner.

## Engagement and Relationships

Hydrographic surveying for nautical charting purposes is a painstaking and time consuming activity. One challenge facing Australia and other regional countries is the sudden increase in tour ship operations both in the tropics and Antarctica with the desire to visit ports and cruise picturesque waterways not adequately surveyed. Another is the poor state of charts in neighbouring countries in the Southwest

Pacific preventing cruise vessels from visiting and seaborne trade opportunities to be realised. Given the amount of unsurveyed or poorly surveyed waters around Australia and in neighbouring countries the AHS is receptive to all data sources; however some sectors of the maritime industry are reluctant to share their hydrographic information as they regard it as commercially sensitive information. However, from our perspective we are only concerned that the bathymetric data can be used to update the navigation chart to show all navigation hazards dangerous to surface shipping for the benefit of all mariners.

Thus the importance of relationships and agreements with industry of mutual benefit activities and the creation of 'memorandums of understanding' regarding the treatment of data received in the Australian Hydrographic Office. In return we are often able to meet requests by these organisations, companies and port authorities for rapid implementation of chart updates so as to quickly inform the mariner of relevant changes.

International engagement is also vital to effective seaborne trade in today's global shipping environment. Significant challenges remain in achieving an open data exchange to support safer navigation which is essential for ensuring ENC are reliable, available and that they provide seamless coverage; thus the focus of the IHO this year on international hydrographic cooperation.

Many neighbouring states in the Southwest Pacific do not have the means to provide charting coverage for their ports, harbours and approaches yet their livelihoods depend on the growing tour ship industry and increased trade opportunities.<sup>15</sup> A recent port visit to Port Vila, Vanuatu by two RAN survey ships provided an opportunity for some vital hydrographic surveying to be conducted in the port. The AHS also assisted Papua New Guinea achieve chart modernisation and has published paper charts for East Timor. The AHS has taken a leadership role in the region in the provision of hydrographic training for Papua New Guinea and Solomon Islands with the third regional training workshop in hydrographic surveying and management of maritime safety information to be held in Brisbane in February 2012.

Along with other IHO member states in the region, the AHS is committed to continue engagement to promote capacity building opportunities in the Southwest Pacific for the conduct of hydrographic surveys. The collection of this information and subsequent charting action is essential if seaborne trade is to be truly global, efficient and safe.

## Conclusion

The AHS continues to improve its hydrographic products and services that enable and improve the safety and efficiency of seaborne trade. The introduction of ECDIS is expected to be a major step towards improved safety of ship operations and protection of the environment by reducing the risk of maritime accidents caused by grounding. It is not just the adverse impact on the environment a maritime incident



will cause, but also the impact on maritime related industries such as fishing, tourism and resources which needs to be avoided. In addition to the projects and initiatives undertaken by the AHS to meet the requirements ECDIS technology demands, a number of other initiatives have been undertaken that are all aimed at the mariner as our customer.

Under the terms of the *International Convention for the Safety of Life at Sea 1974* (SOLAS) and the *Navigation Act 1912*, the AHS is obligated to coordinate and determine policy and standards for the conduct of hydrographic surveying and charting in Australia's waters. More than 90 per cent of the world's trade is transported by sea and the global nature of the shipping industry drives the adherence to the IHO standards so that the mariner receives an internationally consistent navigation product.

While some special products are produced to meet the unique operational requirements of defence, the majority of the hydrographic products and services are focussed on providing the fundamental product, that being the nautical chart, and the services to maintain currency, reliability and accuracy. Regardless of whether it is electronic or paper the nautical chart is the primary means the mariner has to see a safe path enabling seaborne trade and freedom to manoeuvre in Australia's waters.

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# Australian Shipping

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*Noel Hart*

Good morning ladies and gentlemen, and thank you for having me at this prestigious conference. As you just heard, my name is Noel Hart and I am Chairman of the Australian Shipowners Association (ASA). Through my role at ASA, I am also currently Chairman of the Asian Shipowners Forum - whose members comprise more than half the worlds merchant fleet - and am a director of the International Chamber of Shipping. I mention these as I think they, and my roles here and overseas with BP Shipping, enable me to speak not just of Australian shipping, but for the industry in general. I am also a Commissioner with the Australian Transport Safety Bureau.

I want firstly touch briefly on the Australian Shipowners Association. Although we celebrated our 25th anniversary last year as ASA, in fact our predecessor organisations go back over 100 years. We are a lobby and representative industry association with our main office in Melbourne. Our purpose is to ensure that an appropriate fiscal and legislative regime exists in Australia to sustain and develop a vibrant, competitive and sustainable Australian shipping industry, resulting in meaningful Australian participation in both the domestic and international trades, and to make Australia a location of choice for the provision of sea transport and marine related services.

We do this by advocating, lobbying, and promoting the industry, providing a link between the industry, governments, and other stakeholders, such as the RAN. We coordinate members' views on industrial relations and human relations matters. Through our memberships and connections with the International Chamber of Shipping and the Asian Shipowners Forum, we provide the Australian voice in the international ship owning community. We actively promote safety and environmental performance with our members and provide specialist advice to them, and we maintain a data base of positions available and seafarers seeking work to assist in employment and manpower planning. I mentioned earlier our connections with the Asian Shipowners Forum and the International Chamber of Shipping. ASA is proudly hosting both these organisations for an International Shipping Week at Port Douglas in May 2012.

We have a diverse group of member companies, ranging from shipowners, ship managers, energy and mining companies, offshore exploration and production marine service companies and so on.

The Australian Shipping industry has unfortunately been in a steady decline in terms of the blue water fleet for the last few decades. This is mainly due to the lack of supportive policies by various Australian governments, the high cost of employing

Australians due to our wages and leave conditions, and competition from foreign shipping with lower employments costs and beneficial finance and tax regimes. Today there are only about 24 Australian manned blue water trading ships. We have only four Australian ships in the international trade - these being specialist liquefied natural gas (LNG) carriers. Given that Australia has the fourth largest tonne mile sea task in the world, our ports handle 10 per cent of the entire world's sea trade and our exports are valued at over \$200 billion annually, this is obviously well out of balance. Our offshore marine industry, and port services such as towage and pilotage, are however thriving, due to the large number of massive oil and gas, and mining developments both operational and being expanded or constructed.

The current Australian Government has recognised the importance of a vital national shipping industry - importantly for this audience for security reasons as well - and has realised the state of the blue water part of the industry is at a critical stage. ASA has been a principal advocate and provided great input to the government for many years, and especially the last few years, seeking changes to our tax and legislative regimes such that we can compete more evenly with international shipping and I am pleased to advise you that from 1 July 2012 - such changes will be legislated. They include tax reforms, an Australian international register, a new licensing regime for coastal shipping, workforce skills development and coordination, and improvements to workplace efficiencies. I will not go into them in detail here but they are extremely significant and will make a real difference, so much so that we anticipate the fleet growing by about 50-60 ships. It is essential to the industry that this reform package passes through legislation in July and I would encourage Chief of Navy, and any of you who have the opportunity, to support it in discussions you may have with the government and other relevant parties.

And this is very timely, as Australia's export trade is set to boom. It is expected to nearly double in the next 15 years - primarily in coal, iron ore, oil, LNG and grain. China's appetite for imported iron ore for example, has increased from 80 million tonnes a year in 2000, to 800 million tonnes in 2011. Rio Tinto, BHP and Fortescue have plans to increase their Pilbara production from 435 million to 750 million tonnes year by 2015! The increase alone is another 2100 shipments a year. In liquefied natural gas, Australia's current export production is around 20 million tonnes a year, and with current planned new projects in Western Australia and Queensland, this will increase to 60 million tonnes a year by 2020, making us the world's second largest exporter behind Qatar in the Middle East. So we would like to think the future is bright but we have much hard work still to do and cannot be complacent.

As I am sure is the case for the RAN, recruitment, retention and training for sea staff is problematic. We can envisage improved linkages between the merchant navy and the RAN that could benefit both groups, and to this end, initiatives have been underway with the RAN through a working group of the Australian Maritime Defence Council to strengthen skills sharing between them and the merchant navy, to explore career options for service personnel and to provide opportunities for both RAN and merchant navy personnel to gain experience in the other sector.

We have several high quality maritime training colleges in Australia, however, if the increase in our shipping industry that I mentioned earlier is realised, there will undoubtedly be constraints in training the additional seafarers. Perhaps, in this regard, it may be possible to come to an arrangement to use existing training facilities of the RAN.

I referred to the Minister commenting that a strong shipping industry is important not just for economic and environmental reasons, but also for national security purposes. In times of regional conflict or natural disasters, almost invariably, in the first instance, Defence would plan to charter shipping from both the Australian and international markets, using the existing crews from the ships chartered. It is not difficult to imagine that there may be situations in which it would be necessary to use only Australian ships and/or Australian seafarers to undertake particular operational tasks.

There are also perhaps, several fleet support ships that merchant sea staff could man and sail, such as fleet refuellers and supply vessels, freeing up the more specialist trained naval staff to be assigned to the traditional combat vessels such as destroyers, patrol boats, submarines and the like.

We have the belief that a strong and vibrant Australian shipping industry, including perhaps high-speed, versatile sea craft, potentially tailored with equipment and technology and merchant navy crews with Naval Reserve qualifications, owned by Australian companies/operators, would help provide a more responsive readiness and preparedness capability to allow the government to more quickly meet emergent national security, peacekeeping, stabilisation or humanitarian contingencies.

We understand that a domestic coastal shipping industry is perceived by the Department of Defence as a sub-set or element of the overall maritime industry operating in Australia's areas of national interest that has two impacts: its safeguarding by the Australian Defence Force (ADF) as directed in times of threat, but also its potential to provide value-added capability to Defence's delegated security roles, responsibilities and remit that the government assigns it. Having marine capability, along with the practised ability for their use, readily on hand provides more options to government and greater responsiveness in time of need, but is a 'force-multiplier' in that it is also an explicit deterrent to potential adversaries.

Hence, there is the view that, while the ADF *per se* has a specific assigned remit - towards which it will develop, train and sustain with its own assigned resources - having a robust merchant maritime base, that intimately understands and is skilled in all areas of maritime expertise, would provide even greater surety, backup and optionality in meeting the government's requirements. Any initiatives that go towards securing that readily available support - be they nurturing military shipbuilding in Australia; providing infrastructure or skilled mariners of all types,

ashore and afloat, or facilitating a broader commercial Australian shipping base that grows those elements - can only increase the government's confidence in meeting its national security obligations, reducing national security risk and deterring those who might seek harm.

I would also like to put in a plug for my ASA members, many of whom have significant technical and operational expertise and resources. They would be delighted to become more actively involved in providing services to the RAN.

In short, a thriving Australian shipping industry would provide a broader base to nurture the underlying skills and experience necessary for augmenting Australia's naval and border protection capability, and therefore our national security.

Being an island trading nation, security of the seas and keeping our sea lanes open and unencumbered for trade is critical. So too is protecting our coastline and economic exclusion zone from illegal fishing, people smuggling, the drug trade and terrorism, not to mention safeguarding the strategic offshore oil and gas developments. The RAN and Border Protection Command work extremely well together in this essential role. Today though, I want to take this opportunity to also highlight the issue of piracy - actually, I prefer to call it terrorism on the high seas - off the Horn of Africa and now extending well into the Indian Ocean to the coast of India.

This is a massive issue which seems to have no plan for a solution. On behalf of the ASA, the Asian Shipowners Forum and International Chamber of Shipping, I thank you and your colleagues from the many navies around the world who are helping combat these terrorists of the seas and safeguard the merchant ships and the sea staff that trade through the region. We know it is not an easy task and there are severe limitations in what you are able to do. You may be assured that the international shipping community is doing a great deal to help protect itself - through compliance with industry best practice procedures in convoys through the Gulf of Aden, through self defence measures and crew training on ships, now also in many cases by employing armed guards on ships. My fear is that as we do more to protect and arm ourselves, the pirates will become even more aggressive and increase their own firepower, thus raising the danger levels even further.

We are lobbying the International Maritime Organization and the United Nations for a coordinated international approach to the root cause of the issues within Somalia itself, and as well in the meantime, how best to protect ships and seafarers from hijack and kidnapping. I know if I was still at sea on merchant ships, I would not be relishing the thought of sailing through those waters and I find it hard to understand how this situation can continue in this day and age. In fact the pirates are becoming better armed, have more technology and apparently have little fear. There are still today some 172 seafarers and 10 ships held hostage, and the estimated cost of piracy is something like US\$7 billion a year.

Let us all hope that a permanent solution is found soon - but in the meantime, thank you again for your efforts in protecting merchant seafarers, and thank you for having me here today at this wonderful event.





PART 3

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Naval and  
Interagency  
Cooperation



# Promoting Australia as a Maritime Power: The Significance of the Law of the Sea

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Sam Bateman and George Galdorisi

Australia has one of the largest areas of maritime jurisdiction in the world. This is vitally important to the nation's future prosperity and security, but managing this area is a major national challenge. Furthermore, the maritime environment around Australia is becoming more complex and contentious. Over the past decade, there have been increased differences between Indo-Pacific nations on maritime issues, such as the disputes between China and Southeast Asian nations in the South China Sea; the disputes between China and Japan over the Senkaku/Diaoyu Islands in the East China Sea; North Korea's sinking of the South Korean warship ROKS *Cheonan* in May 2010; and the differences of view between the United States and major Asian nations over freedoms of navigation.

This paper investigates how Australia might contribute to maintaining the rule of law at sea and using the law of the sea as a tool to promote Australia as a maritime power. It addresses several important questions. How can Australia work more proactively with its neighbours to promote a stable regional environment that reflects shared maritime concerns and mitigates the emergence of threats? How can Australia merge the hard power of its naval capabilities with the soft power it already delivers through its well-recognised reputation as a proponent of the rule of law, as well as participation in a complex network of international forums? Australia has the potential to do more to facilitate effective management regimes for adjacent oceans and seas, particularly through promoting a common understanding among regional countries of key maritime regimes under the international law of the sea.

## Evolution of the Law of the Sea

For nearly 350 years from the times of Grotius and Selden in the early 17th century until the 1950s and 1960s, the international law of the sea was a largely static phenomenon dictated by Western maritime powers. The freedom of the seas was the dominant paradigm with only a narrow belt of territorial sea under the jurisdiction of coastal states. All this started changing, however, with the greater number of independent states in the period of de-colonisation following World War II. The influence of these states on the law of the sea is evident in the *United Nations Convention on the Law of the Sea 1982* (LOS), particularly with its introduction of a 12nm limit to the territorial sea and the regimes of the exclusive economic zone (EEZ) and archipelagic state.

As Professor RP Anand, an eminent Indian scholar and historian of the law of the sea aptly observed in 1982, there have been 'more changes and progress in ocean law since 1967 than in the previous 200 years'.<sup>1</sup> Moreover, the pace of evolution of the customary law of the sea has not slowed since 1982. The developments in ocean law over the last 30 years are almost as significant as those that occurred between 1967 and 1982, particularly through increased concern for the health of the world's oceans and a proliferation of international treaties affecting ocean usage. The dominant paradigms during this period have been increased coastal state control over adjacent waters and new limitations on the freedoms of the high seas, especially with regard to freedoms of fishing

These trends with the evolution of the international law of the sea have coincided with the dramatic shift of economic and maritime power from the West towards the East. Parenthetically, this has impacted the military realm. The IISS annual publication, *The Military Balance*, has recently reported that Asia was set to spend more on defence than Europe for the first time in modern history.<sup>2</sup> While the centuries when the Western maritime power view of the law of the sea prevailed were primarily Euro-Atlantic focused, the 21st century will be the 'Asia-Pacific century'. Many Asian scholars believe that the Euro-Atlantic focused centuries were a temporary aberration in the trajectory of history when Western imperialism dominated the rich cultures and economies of Asia.

The Indian historian and diplomat, KM Panikkar, coined the expression the *Vasco da Gama epoch* to describe the years between the arrival of Vasco da Gama in Calicut in southern India in 1498 and the period post-World War II with the independence of former British, Dutch, French and American colonies and territories in Asia.<sup>3</sup> Similarly, repeated incursions by Western imperialist powers in Chinese modern history have left an indelible mark on Chinese concepts of maritime security in China which place a high premium on sovereignty.<sup>4</sup> Hence China adopts a restrictive position on the innocent passage of warships through its territorial sea and on the ability of other countries to conduct certain military activities in its EEZ.<sup>5</sup>

There are important implications here for the international law of the sea and how it might evolve in the future. Where differences are evident at present between Western, primarily American, views of the law of the sea, and those of the rising powers of Asia, there can be no certainty that the Western views will continue to prevail.<sup>6</sup> Unfortunately it is a characteristic of LOSC with its many 'gray areas' and built-in ambiguities that allows these opposing views to sit side by side. This is particularly the case with regard to military operations in the EEZ. As Dale Stephens has observed, LOSC 'is replete with ambiguity concerning military uses of the sea'.<sup>7</sup>

Largely as a consequence of the maritime geography of the region with its large EEZ, many islands and archipelagos, overlapping claims to maritime jurisdiction and many strategically important shipping chokepoints, the international law of the sea is of great importance in the region. Indeed it is difficult to fully appreciate

maritime security in the Asia-Pacific region without some understanding of the law of the sea. Examples of all the contentious issues with the contemporary law of the sea can be found in the region, and these constitute a source of source of tension and even potential conflict. A key causal factor is the long-standing tension between maritime powers seeking maximum freedoms to use the sea and coastal states seeking to restrict these freedoms in their adjacent waters. Importantly, the coastal state view is the dominant paradigm in the region.

An important trend in the Indo-Pacific region is the movement by coastal states towards increased regulation of their adjacent waters. Greater concern for the protection of the marine environment is a driving force for this development although regional countries, including all the major Indo-Pacific countries, such as China, India and Japan, are seeking increased control due to security concerns. Environmental concerns, however, were behind Australia's introduction of compulsory pilotage in the Torres Strait. There were strong political and operational reasons for this move although the legal justification was questioned by both the United States and Singapore.<sup>8</sup> The United States was also concerned that compulsory pilotage in the Torres Strait might provide a precedent for other straits in the Indo-Pacific region, notably Hormuz and Malacca.

It is a major consideration for this paper that trends towards broader coastal state control of adjacent waters and the growing territorialisation of the EEZ are evident in the Indo-Pacific region. Paradoxically and perhaps unintentionally, Australia has supported rather than opposed these trends with actions such as the introduction of compulsory pilotage in the Torres Strait, the declaration of prohibited anchorage areas around undersea cables in the EEZ,<sup>9</sup> the introduction of mandatory ship reporting in parts of the EEZ adjacent to the Great Barrier Reef, and the declaration of the entire Australian EEZ as a submarine exercise area.<sup>10</sup> These developments are despite Australia being in other contexts a strong supporter of freedoms of navigation with a particular concern for navigational rights in the archipelagos to its north.

## The Geo-Strategic Environment

The Indo-Pacific region includes the 'long littoral' stretching from the Arabian Gulf and the Red Sea to the South and East China seas. Within this region, Australia has the largest area of maritime jurisdiction with an EEZ of 8.51 million km<sup>2</sup>, followed by Indonesia (6.16 million km<sup>2</sup>), India (2.30 million km<sup>2</sup>), The Philippines (1.89 million km<sup>2</sup>) and China (1.36 million km<sup>2</sup>). Island and archipelagic states generally tend to have much larger areas of maritime jurisdiction than non-insular countries with the island states of Madagascar, Mauritius and the Seychelles in the Indian Ocean, as well as many Pacific island countries, all having EEZ over 1 million km<sup>2</sup> in size.<sup>11</sup>

The long littoral is literally awash with dilemmas for maritime security, the provision of good order at sea and the management of regional seas. From west to east, major issues relate to the Strait of Hormuz, the Horn of Africa and the Arabian Sea, the Bay of Bengal, the Malacca and Singapore straits, and the South China Sea. Other issues for Australia in its adjacent oceans relate to the Pacific island countries and the Southern Ocean.

The Strait of Hormuz is the world's most important oil chokepoint with an oil flow in 2008 of 16.5 to 17 million barrels per day - roughly equivalent to 40 per cent of all seaborne trade in oil.<sup>12</sup> There is no alternative route for tankers leaving the Arabian Gulf and the strait is subject to the straits transit passage regime in LOSC Part III. Potential threats to shipping in the strait include the possibility of Iran using its geographical proximity to close the strait and the risks of a maritime terrorist attack. In July 2010, the Japanese oil tanker, *MV M Star*, suffered a major explosion alongside while transiting the strait probably as the result of being hit by an explosive laden speedboat.<sup>13</sup> The most persistent speculation suggests this speedboat was operated by Al Qaeda, rather than by Iran.

Nonetheless Iran's recent threats to close the Strait of Hormuz, widely reported in the international media, have, once again, focused international attention on the importance of that waterway, the world's increased dependence on oil for sustainable economic development, and the challenges all navies have to keep such vital chokepoints open, to say nothing of the Iranian regime's lack of respect for the international rule of law. Most observers predict Iran's threats to close the Strait of Hormuz will emerge again and again.<sup>14</sup>

Piracy remains a major problem off the Horn of Africa and in the Arabian Sea despite some improvement over the past year. The Somali pirates are operating hundreds of miles out to sea into the Indian Ocean, even as far out as the Seychelles, using larger craft or even a vessel hijacked earlier as motherships. This tactic is difficult for naval forces to counter as, not only does it vastly increase the area where attacks might occur, but it also means that security forces are hesitant to engage the motherships for fear of endangering their crew members.

Although Somali pirates attacked more ships in 2011 than in 2010, they hijacked fewer vessels. Of the 237 vessels that reported actual or attempted attacks in 2011 (219 in 2010), 28 were hijacked as compared with 49 in 2010.<sup>15</sup> Of the vessels hijacked in 2011, four were yachts, four were fishing vessels and one was a dhow. The fall in number of successful attacks may be attributed to increased security awareness by ships, the employment of armed security guards, the use of citadels (secure areas) by crews if attacked, and to the actions of international naval forces.

The Bay of Bengal has emerged as a new maritime problem area in the Indo-Pacific region. This is due to disputes over offshore oil and gas, and conflicting claims by littoral countries to extended continental shelves.<sup>16</sup> The Bay of Bengal is a semi-enclosed sea under LOSC Part IX because it consists 'entirely or primarily of the territorial

seas and exclusive economic zones of two or more coastal states'.<sup>17</sup> However, there are few agreed-to maritime boundaries and bordering countries have overlapping claims to an extended continental shelf in the bay. Bangladeshi and Burmese naval vessels have confronted each other on several occasions in recent years in a part of the bay claimed by both countries. One hopeful sign is the fact that, recently, Bangladesh and Burma have taken their maritime boundary claims to the International Tribunal for the Law of the Sea. This was in an area where valuable hydrocarbon reserves are known to exist. To add to the tensions in the bay, Bangladesh and Burma are both countries where India and China are competing for influence.

About 72,000 ships pass through the Malacca and Singapore straits annually, including the tankers carrying about 80 per cent of the oil transported by sea to Northeast Asia.<sup>18</sup> As a measure of the strategic importance of the Malacca Strait, Robert Kaplan has referred to it as 'the Fulda Gap of the twenty-first-century multipolar world'.<sup>19</sup>

The LOSC transit passage regime applies in the Malacca and Singapore straits. The littoral states, Indonesia and Malaysia in particular, have long been concerned that by virtue of their geographic location, they were carrying an unfair burden to provide arrangements for navigational safety and marine environmental protection in the straits. On the other hand, they were equally concerned about protecting their sovereignty in their territorial seas and archipelagic waters within the straits. After several years of negotiation over the implementation of LOSC Article 43 in the straits,<sup>20</sup> the Cooperative Mechanism for the Straits of Malacca and Singapore was finally agreed in 2007.<sup>21</sup> This includes three elements: a Cooperation Forum, an Aids to Navigation Fund, and specific projects that might be funded directly by interested states. Significantly, security was not included within the remit of the mechanism, and it would be optimistic to assume that there is now a stable management regime for the straits.

The Aids to Navigation Fund was intended to enable user states and other stakeholders to make voluntary contributions for the establishment of navigational aids in the strait. Unfortunately the required contributions have not been forthcoming with US\$5 million received in 2009 against an annual budget of US\$8 million, and only US\$3.2 million received in 2010.<sup>22</sup> Shipowners and ship-owning associations have not supported the Fund as they regard it as an interference with the freedoms of navigation through a strait used for international navigation. This situation may lead Indonesia and Malaysia to consider stricter measures over shipping passing through the Malacca Strait, including some form of compulsory pilotage and/or by treating the Malacca and Singapore straits as separate straits with a regime of non-suspendable innocent passage applying to the former.<sup>23</sup> These measures would be strongly opposed by Singapore and other user states, including the United States. Further, the issue will always remain regarding how navigational safety and environmental protection measures will be funded in the long-term.



The situation in the South China Sea deteriorated during 2010 and 2011. Robert Kaplan puts it starkly ‘just as German soil constituted the military front line of the Cold War, the waters of the South China Sea may constitute the military front line of the coming decades’.<sup>24</sup> Incidents involving patrol vessels, military aircraft, fishing vessels or seismic research vessels of the claimant countries have become regular occurrences. China has been involved in most of these incidents leading to perceptions of increased Chinese assertiveness.<sup>25</sup> The claims by China and Vietnam to all the features of the sea are the most intractable aspect of the sovereignty disputes. More generally, the unilateral assertions of sovereignty by the countries claiming jurisdiction over offshore features in the South China Sea is a major ‘stumbling block’ to effective management of the sea and its resources, and to good order within it.<sup>26</sup>

The United States has emerged as a new key player in the South China Sea. It has declared a ‘national interest’ in preserving freedoms of navigation through the South China Sea and has sought to internationalise the dispute by suggesting that China’s actions threaten the security of sea lines of communication and creating uncertainty and concern for oil and gas companies, including some American ones, seeking to develop the resources of the sea.<sup>27</sup> At the heart of the differences between the United States and China are different interpretations of the rights and duties of states in an EEZ. China believes certain actions by the United States, particularly the activities of American military survey vessels, are conducted without due regard to the rights of a coastal state in its EEZ while the US asserts that these are part of the freedoms of navigation in an EEZ.

The South Pacific is an area of increasing importance to the international community and especially to Australia. The reasons for this centre around geography, economics and climate change. Whether or not one considers Australia a major, medium or regional maritime power, the stark fact remains that for the island nations of the South Pacific, Australia is the only maritime power proximate to these island nations. Thus, as has been demonstrated numerous times in the last decade alone, whether it is delivering aid after devastating natural disasters, providing humanitarian relief in non-emergent situations, helping to adjudicate conflicting maritime interests or other explicit or implicit obligations, Australia and especially the RAN represent an inherent ‘force for good’ in the South Pacific.

Australia’s principal contribution to maritime security over recent decades has been through the Pacific Patrol Boat program through which Australia supplied 22 patrol boats to 12 island countries. The RAN has been heavily involved in this program primarily through the provision of its personnel as maritime surveillance and technical advisers in the recipient countries. Despite major refits to extend their lives, the patrol boats will start reaching the end of the economic life by about 2015. Progress with addressing Australia’s future

material contribution to maritime security in the South Pacific has been slow, and there are perceptions that Australia has ‘dropped the ball’ with regard to its regional maritime security assistance.<sup>28</sup>

Australia, the Netherlands, New Zealand, and the United States issued a joint statement in December 2011 calling for responsible behaviour in the Southern Ocean.<sup>29</sup> This was in response to the likelihood of clashes at sea between the Japanese whaling fleet and protest vessels, particularly those of the Sea Shepherd organisation, demonstrating against the activities of the whaling fleet. The risks of clashes are high unless all parties act responsibly. Australia, New Zealand and the United States have a common interest in avoiding these clashes because, due to their search and rescue capabilities and responsibilities in the Southern Ocean, they are the ones most likely to be involved in ‘picking up the pieces’ should a serious accident occur.

## Threats

Direct threats in the maritime environment around Australia include the risks of interstate or intrastate conflict; maritime terrorism; piracy; trafficking in drugs, arms or people; and illegal, unregulated and unreported fishing. Fisheries are being over-fished throughout the maritime areas surrounding Australia. Indirect threats include food insecurity, energy insecurity, climate change, loss of marine biodiversity, marine pollution, ocean acidification, marine natural hazards, and the impact of the oceans on drought. Most of these threats are increasing. These direct and indirect security and management challenges are inextricably linked, and Australia should be on the cutting edge of finding effective solutions and mobilising multilateral action. With the RAN’s long tradition of cooperative engagement with the navies and coastguards of the region, it stands to play an important leadership role in leading these international naval dimensions of these multilateral actions. A fundamental challenge with the provision of good order at sea in the Indo-Pacific region is that most regional countries have very different perspectives of key law of the sea issues, particularly the ability of a warship to transit the territorial sea without providing prior notification to the coastal state, and rights and duties in an EEZ. If anything, these differences are becoming starker. Thailand, for example, ratified LOSC in May 2011, but in doing so, made the following statement:

The Government of the Kingdom of Thailand understands that, in the exclusive economic zone, enjoyment of the freedom of navigation in accordance with relevant provisions of the Convention excludes any non-peaceful use without the consent of the coastal state, in particular, military exercises or other activities which may affect the rights or interests of the coastal state; and it also excludes the threat or use of force against the territorial integrity, political independence, peace or security of the coastal state.<sup>30</sup>

This declaration is very similar to China's position on military activities in an EEZ. It is understood that the United States made strong diplomatic representations to Thailand against such a statement, but Thailand went ahead regardless. Clearly, the United States' position on these law of the sea issues is not helped by the fact that it is not yet a party to LOSC.

## Maritime Legal Regimes

LOSC provides the framework for both international oceans management and maritime security. It prescribes procedures for the settlement of maritime disputes by peaceful means; clarifies the principles for delimiting maritime boundaries between adjacent and opposite states; provides the principles for marine scientific research and the exploitation of marine resources, both living and non-living; and sets out the rights and duties of states in the various maritime zones. It reduces the risk of conflict arising from disputes over claims to offshore areas. General acceptance of the navigational regimes in LOSC should mean less risk of misunderstanding when warships of one state transit the waters of another. Unfortunately LOSC and its various regimes are not always well understood - witness recent statements by the US Secretary of State that new legal regimes would be required to adjudicate competing claims in the South China Sea.<sup>31</sup> Clearly they are not. LOSC provides more than adequate provisions. Australia, as a strong supporter of LOSC, has a role in promoting a greater common understanding of LOSC regimes.

It is a major limitation of LOSC as a foundation for a regional maritime security regime that the United States remains outside the Convention. The main problem the United States had initially with ratification was the attitude of the powerful American mining lobby to LOSC Part XI dealing with deep seabed mining. More recently, however, the concern has shifted to the security environment with perceptions that ratification of LOSC could inhibit maritime operations by forces of the United States.<sup>32</sup>

Considerable ink has been spilled regarding the issue of the United States not being a party to LOSC, and it is well beyond the scope of this paper to retread that ground. Most observers today agree that a constellation of ultra-conservative forces within the US Congress in 1982 were primarily responsible for blocking the United States from signing the Convention and these forces remained years later when the United States refused to ratify or accede to LOSC.<sup>33</sup>

In the decades since the United States made the initial decision to remain outside the LOSC, successive US Presidents, Secretaries of State/Defense, Chairmen of the US Joint Chiefs of Staff and US Navy Chiefs of Naval Operations have all come out strongly in favour of US accession to LOSC. For these authors, while we cannot speak for the US Government it appears that the Convention accession has not been denied, but rather delayed - albeit for a frustratingly-long period.

LOSC was formulated in a period when there was less concern for the health of the marine environment than there is at present. Norms and principles for the preservation and protection of the marine environment have multiplied exponentially over the last 20 years or so. It is not surprising therefore that many apparent 'gaps' in LOSC arise in the area of environmental protection. The navigational regimes in LOSC provide an example of the underdeveloped level of concern for the marine environment evident in the 1970s. The regimes of straits transit passage and archipelagic sea lanes passage apply to 'all ships and aircraft' and there is no direct right of the coastal or archipelagic state to prevent the passage of a vessel that might be perceived to be a serious threat to the marine environment. Legal scholars have pursued this issue extensively over the years but so far there is not a satisfactory resolution of the issue.

### Australia as a Maritime Power

As shown in Table 1, Australia claims an EEZ of 8.1 million km<sup>2</sup> around the continental land mass and island territories; this is the third largest EEZ in the world. This EEZ increases to 10.19 million km<sup>2</sup> if the EEZ claimed around the Australian Antarctic Territory (AAT) is included (these zones are depicted in Figure 1). The legal continental shelf off the continent and territories has an area of 10.8 million km<sup>2</sup> (or 13.52 million km<sup>2</sup> if the one around the AAT is included).

Zone/Area	Million km <sup>2</sup>
<b>Exclusive Economic Zone</b>	
Continent + Territories	8.15
Australian Antarctic Territory	2.04
<b>Total</b>	<b>10.19</b>
<b>Legal Continental Shelf (includes EEZ)</b>	
Continent + Territories	10.80
Australian Antarctic Territory	2.72
<b>Total</b>	<b>13.52</b>
<b>Compared with:</b>	
Australia's Continental Land Mass	7.69
Australia's Antarctic Territory	5.90
Total Land Mass	13.59
<b>Total Earth's surface claim</b>	<b>27.11</b>

*Table 1: Australia's Earth's Surface Claim*

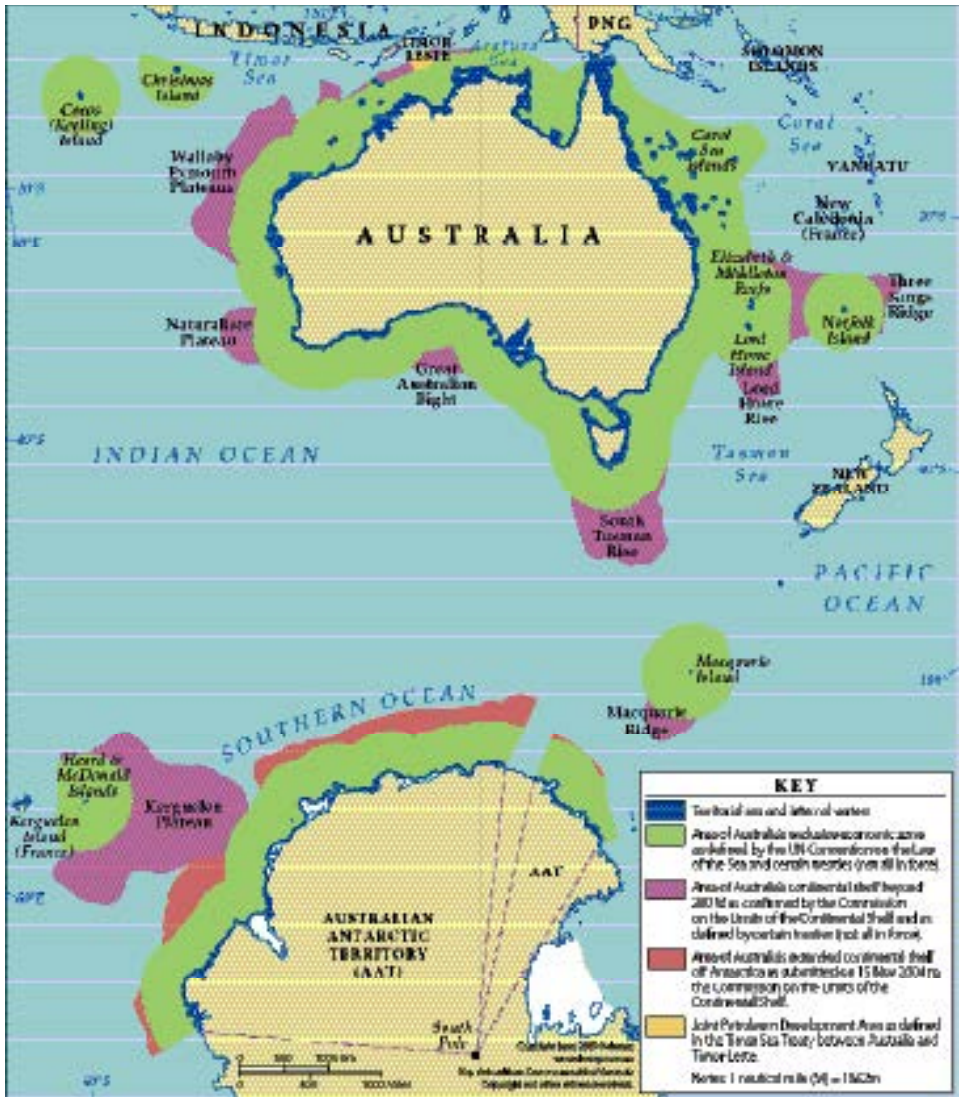


Figure 1: Australia's Maritime Domain

In April 2008, the Commission on the Limits of the Continental Shelf adopted recommendations that confirmed the location of the outer limit of Australia's continental shelf in nine distinct marine regions. This decision gives Australia jurisdiction over an additional 2.65 million km<sup>2</sup> of continental shelf that extends beyond 200nm from its territorial sea baseline (excluding a possible 0.68 million km<sup>2</sup> of extended continental shelf from the AAT). These figures mean that the maritime domain over which Australia claims some jurisdiction is nearly twice the size of the continental land mass of Australia.

When Australia's claim to the AAT land mass is included, Australia becomes the country with the largest jurisdictional claim to an area of the earth's surface - approximately 28.5 million km<sup>2</sup> of which about half is over ocean or sea.<sup>34</sup> The AAT is nearly one half of our land territory but, even without this area, Australia would still rank second (after Russia) in terms of the area of the earth's surface under some form of national jurisdiction. This makes Australia an oceanic and environmental superpower with a clear responsibility to take a leadership role with managing regional oceans and seas.

Australia also has obligations in areas of ocean that extend into the high seas well beyond our maritime zones of jurisdiction. Australia has accepted responsibility for a large Search and Rescue region where we have responsibility for the safety of people in distress. This area is equivalent to about one-ninth of the earth's surface and extends well into the Indian Ocean and south to the Antarctic continent. It is also the area where Australia by international agreement is the Security Forces Authority with responsibility for initiating action in response to an international security incident.

### Regional Ocean Interests

Despite the rich potential of marine resources in the Indo-Pacific region, the development of these resources is troubled by major jurisdictional problems, and 'beggar thy neighbour' attitudes which have led to over-fishing, and the marked degradation of natural habitats of coral reefs, mangroves and seagrass beds. Marine pollution originating from the land is a serious and largely uncontrolled problem in the region. The preservation and protection of the marine environment, the conservation of species, and the exploitation of marine resources is seriously complicated by conflicting and overlapping claims to marine jurisdiction and the lack of agreed-upon maritime boundaries. These challenges will only be overcome by a changed mindset based on a greater preparedness to cooperate in the management of regional oceans and seas.

An almost insoluble situation exists with the resolution of maritime boundaries in East Asian waters. Regional countries seek 'fences' in the sea to mark the limits of their sovereign jurisdiction in the same way as boundary fences are established on land. However, because so many issues of managing ocean space are trans-boundary in nature, fences cannot be established in the sea in the same way as fences are established on land.

The drive for sovereign rights over offshore resources and conflicting claims to offshore territory and maritime space all constitute a serious threat to regional stability and inhibit the processes of ocean management, cooperation and regime building. These challenges will only be overcome by the greater preparedness of regional countries to cooperate yet significant barriers to maritime cooperation exist and they may be becoming even harder to overcome. Any failure to cooperate on

the solution of maritime issues, particularly with marine environmental protection, sustainable development and the conservation of marine biodiversity, will lead to a ‘tragedy of the commons’ as a result of each country pursuing its own self-interests. If all countries act solely in their own self-interest in the maritime domain, all will eventually lose.

## What Australia and the RAN might do

As the only country comprising a continent surrounded by water, Australians recognise that the 21st century represents a decided shift ‘from Mackinder to Mahan’. Said another way, perhaps the most profound difference between the 20th and 21st centuries is this: Europe is a landscape, the Indo-Pacific is a seascape. The nexus of world power is shifting dramatically to this region. As the only country/continent fronting both the Indian and Pacific oceans, Australia is a critically important player in this region with a clear responsibility to promote maritime cooperation in all its dimensions.

It is for this reason that Australia must do more to leverage its positive international and regional reputation and the growing prominence of the RAN as a trusted partner to regional navies to step up to the ranks of the world’s major maritime powers. At issue is how Australians view the oceans. Australia’s future largely depends on how it acts as a maritime power. Australia has a large stake in the security and management of the Indian, Pacific and Southern oceans, as well as the seas lying to its north – the Timor, Arafura and Coral seas.

Nowhere is this remit more clearly articulated than in Australia’s most recent Defence White Paper, *Defending Australia in the Asia Pacific Century: Force 2030*.<sup>35</sup> As Jack McCaffrie and Chris Rahman pointed out, during the past decade Australia has shifted from fielding a defence force with a continental focus to building one that is predominantly maritime.<sup>36</sup> While, clearly, Australia’s maritime challenges surely are not all defence related, the military component is an important one, and a careful reading of *Defending Australia in the Asia Pacific Century* lays out how Australia has made this shift to a maritime focus more clearly than any other recent policy statements.

## US-China Relations

Among all the countries of the Indo-Pacific region, Australia has one of the largest stakes in ‘hedging its bets’ between the United States and China. Tensions between these major players, particularly in the maritime domain, threaten regional stability and constitute a major obstacle to good order at sea in the Indo-Pacific region. As Hugh White pointed out, ‘the drift in antagonism is already underway’ between the United States and China, and this is in no one’s best interests.<sup>37</sup>

The United States has long been Australia's major strategic partner and that was recently confirmed by the recent announcement of an increased American military presence in Australia. On the other hand, China is Australia's major trading partner. Australia is challenged to keep the American and Chinese 'balls in the air' without either bouncing.

There is also the reality of geography. China is locked into the region, but the staying power of the United States is open to question. There are grounds to question whether the current policy from Washington is overly ambitious in its ability to deliver its substantially increased strategic investment in the Asian region.<sup>38</sup> In the worst case scenario of conflict between China and the United States, Australia cannot up anchor and sail across to the Californian coast.

Given the duality of Australia's strategic and economic interests, it could play some part in helping to bridge the gap between the United States and China. Then Foreign Minister Rudd, in a speech in New York, said that Australia must play a key powerbroker role to ensure strategic competition between China and the United States does not lead to war.<sup>39</sup> Australia could make greater use of the soft power of its great skills and capabilities in marine environmental and resource management, either separately or in conjunction with the United States, to help introduce concepts of functional management of marine areas in the region to which LOSC Part IX applies, including the South China Sea and the Bay of Bengal.

More problematically, but just as importantly, Australia could help bridge the gap that exists between the United States and regional countries on law of the sea issues. For example, the *US Commanders' Handbook on the Law of Naval Operations* includes EEZ within the scope of 'international waters' when as far as regional countries are concerned, they are not. Rather they are a zone *sui generis*, subject in accordance with LOSC Article 55 to their own specific legal regime, where coastal states have important rights and duties. The *Handbook* contains no reference to the fact that the freedoms of navigation and overflight in an EEZ should be exercised with due regard to the rights and duties of the coastal state.<sup>40</sup> Further guidance to commanders on this issue might help the regional situation, including the provision of examples of activities that would not have due regard to the rights and duties of the coastal state.

## Regional Relations

Australia has extensive common maritime interests both with India and Indonesia, two major regional maritime players in the Indian Ocean region. All three countries have a strong mutual interest in enhancing maritime security cooperation in the Indian Ocean region, where the three countries have key strategic interests. *Defending Australia in the Asia Pacific Century* noted that the Australian government has specifically directed Defence to examine opportunities for increased bilateral



maritime cooperation with India, while also identifying Indonesia as a key strategic partner.<sup>41</sup> Dialogue with both India and Indonesia on ocean-related issues in the Indian Ocean region would be especially beneficial. The RAN could play an important role in fostering maritime security cooperation in the Indo-Pacific region.

There have been major strategic developments in the South Pacific that make plans for Australia's future involvement in maritime security arrangements in that region all the more urgent. The region is no longer a strategic backwater: competition is becoming evident in the region between the United States and to some extent, Japan on the one hand, and China on the other. With the end of the Pacific Patrol Boat program looming, there are opportunities for the RAN to play a key role in helping to build a maritime surveillance and enforcement regime for the South Pacific.

### Capacity Building

Many island and coastal states in the Indo-Pacific region have a large EEZ, including Australia's closest neighbours, but lack the capacity to manage their areas of maritime jurisdiction effectively, including maritime surveillance and enforcement, search and rescue, marine scientific research and resource management. The required capacity comprises: institutional arrangements for development, implementation and coordination of maritime policy without the duplication or overlap of responsibilities; legal frameworks providing appropriate national legislation and regulations; and resources (both materiel and human).<sup>42</sup> An appreciation of the international law of the sea is an important dimension of the legal frameworks, along with an understanding of key maritime regimes although these are not well supported by regional countries.<sup>43</sup>

In line with Australia's national interest in the management of its adjacent oceans and seas, Australia should assist regional countries with developing the necessary capacity. It is already doing a lot in the region both through AusAID and the Defence Cooperation Program but this activity tends to be uncoordinated and without focus.<sup>44</sup> Examples of this activity include assistance with fisheries management through the Pacific Islands Forum Fisheries Agency, the Indonesia Transport Safety Assistance Package which has a significant maritime dimension, the Regional Maritime Program which assists Pacific island countries with the implementation of IMO measures for the safety and security of shipping, and the Pacific Patrol Boat program.

In July 2011, the Australian government released a new international aid policy, *An Effective Aid Program for Australia: Making a real difference - Delivering real results*. The policy states that the fundamental purpose of Australian aid is to help people in developing countries overcome poverty and that this purpose also serves Australia's national interests by promoting stability and prosperity in its region and beyond.<sup>45</sup> It identifies five core strategic goals: saving lives, promoting opportunities for all, sustainable economic development, effective governance, and humanitarian and

disaster relief; but despite the major maritime aspects of these goals for countries with large EEZ, the policy makes no specific reference to oceans and maritime issues. Although agriculture and rural issues are mentioned frequently, there is no reference at all to the important fishing interests of many regional countries. Australia is thus missing an important opportunity to contribute more effectively to the management of regional oceans and seas. Fisheries management, hydrographic surveying, and the implementation of port state control regimes to rid the seas of sub-standard ships are examples of areas where Australia has a keen vested interest and the required expertise.

## Concluding Comments

The most common map of the world is the 'Mercator projection' centred on the Greenwich meridian. The large land masses of Europe, Asia, Africa and the two Americas are the main eye-catching features of this map. Australia is tucked away in the bottom right hand corner with the largest of the world's oceans, the Pacific Ocean, split in two. The western Pacific barely appears on the right-hand side of the map with a little more of the eastern Pacific on the left-hand side. This map is the continental view of the world.

As Robert Kaplan suggested, first, in his 2009 *Foreign Affairs* article 'Center Stage for the 21st century', and later in his 2010 book *Monsoon*, such a map completely ignores the political, economic, strategic, and military shifts that are already making the 21st century not a American-Euro century, or an Asian century, but an Indo-Pacific century.<sup>46</sup> And only one nation is firmly situated at the nexus of three newly-important oceans - Australia.

An alternative map of the world to help Australians understand this new opportunity and obligation is one centred on the meridian of longitude of 180°. This gives a very different perspective of the world. The eye is caught by the immensity of blue that dominates the land masses. The Pacific and Indian oceans are now the most prominent features of the world. Such a map provides an oceanic or maritime view of the world with a true impression of the 70 per cent of the earth's surface covered by water. This oceanic or maritime view of the world is the one that Australians should have. While the map puts Australia near the centre of the world, it also places Australia at the heart of a great oceanic domain formed by the Pacific, Indian and Southern oceans. It is a powerful visual image both of the importance of the oceans to Australia and of the emerging need for Australia to play a leading role in the management of oceanic affairs in adjacent oceans and ensuring good order at sea throughout this expansive maritime domain.

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- 45 AusAID, *An Effective Aid Program for Australia*, Canberra, 23 November 2011, <[www.ausaid.gov.au/makediff/aid-policy.cfm](http://www.ausaid.gov.au/makediff/aid-policy.cfm)> (12 January 2012)
- 46 Robert Kaplan, *Monsoon - The Indian Ocean and the Future of American Power*, New York: Random House, 2010.

# Interagency Arrangements in New Zealand

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*Martyn Dunne*

I would like start by thanking the Chief of Navy, Vice Admiral Ray Griggs, for the invitation to attend this conference and for the opportunity to speak. As a retired army officer and a serving diplomat I feel privileged to be here among you today and be part of a conversation addressing naval and maritime security issues.

I am here to talk to you about a subject which, in the past I have been very much engaged, and of which I still maintain a close interest; that is, to share with you my views on how New Zealand deals with domestic and external security risks, and in particular how we approach these risks from a whole-of-government or interagency cooperative perspective.

From my previous careers and prior to joining the Ministry of Foreign Affairs in May 2011, I was the head of the New Zealand Customs Service and before that the Commander Joint Forces New Zealand. In both these roles I worked closely with other security sector agencies to counter or mitigate risks to the security of the people, the borders, the natural resources and the broader security interests of New Zealand. It is with this background that I will address you today.

During this presentation I intend to briefly discuss New Zealand's geo-political situation and describe the contemporary threats and risks that New Zealand faces and the challenges in dealing with them. Acknowledging that this is a sea power conference, I will try and contain the discussion to the maritime security space, but I may take the liberty of heading inland, if required, to provide an example or to illustrate a point. I will then discuss how these threats and risks are addressed in New Zealand's context by discussing examples of whole-of-government approaches and interagency cooperation.

## Geo-Political Situation

New Zealand is geographically remote, described as 'the last bus stop on the planet' and our hemisphere is dominated by vast areas of water and a couple of large land masses to the west and south. It is considered by many to be small; however, it just looks small because of all the water around it and in comparison to Australia and Antarctica. New Zealand, in terms of land area, is roughly equivalent to the size of the United Kingdom. Interestingly, there is a (small) school of thought that would suggest that New Zealand is twice the size of India, except the problem with this comparison is that 96 per cent of it is under the sea.

Putting the size argument aside, New Zealand does have a small population and relatively modest economy. New Zealand has a current population of 4.4 million and a gross domestic product of about US\$130 billion. To provide some context, New

Zealand's population is equal to that of Sydney or the population of Queensland, and as far as gross domestic product is concerned New Zealand's world ranking is 63rd whereas Australia is 18th. These comparatively modest numbers will be put in context when I come to discuss the challenges that New Zealand has in dealing with threats to security.

Through increasing levels of inter-connectivity and 24/7 access to the world's financial institutions, globalisation has brought New Zealand as it has the rest of the world closer, in a virtual sense, to the global economic market and to that end in the digital age, we benefit to some extent by virtue of the fact that we are the first country to see the sun; but, the physical reality is that New Zealand remains geographically remote and highly dependent on trade routes in the air and on the oceans.

Moreover, as greater than 95 per cent by volume of New Zealand's trade is transported by ship, the security of the international sea lines of communication that link New Zealand to her markets is very important to us. Equally important is the protection of the natural resources (fish stocks, oil and gas, and minerals) that are found in our exclusive economic zone and continental shelf.

Regardless of geography, since the time of the great canoes, New Zealanders have long travelled to the four corners of the world: to the highest mountains, across broadest oceans and in so doing participated in world events. Whether they are costly wars, international engagement, scientific invention, innovation and leading social policy initiatives: isolation is not and has never been in our national interest.

Despite the importance of the sea to New Zealand's economy, most New Zealanders view the sea that surrounds the country as a bulwark against external threats and a place to conduct recreational activities.

Unlike Australia, which was bombed during World War II and there are now almost daily reports of asylum-seeking boat-people heading to and/or arriving in your waters, the New Zealand public are generally blissfully unaware of the risks that exist in the maritime environment until an event occurs such as the grounding of MV *Rena* in the Bay of Plenty in early October 2011.

In terms of size, geography, resources and future opportunities, New Zealand's maritime environment is an important strategic asset that needs to be understood and protected, in order that benefits can be realised now and in the future.

New Zealand's maritime interests cover an immense area and include: the exclusive economic zone and continental shelf extension; the Southern Ocean to the south of New Zealand and the Ross Dependency; and we also have constitutional obligations for the Cook Islands, Niue and Tokelau.

We also have responsibilities under various international agreements such as search and rescue, and the Western and Central Pacific Fisheries Commission.

## Threats/Risks to New Zealand

Like other maritime nations the threats and risks that New Zealand faces include use of the sea by those who engage in activities such as: piracy, transnational crime, unauthorised maritime arrivals, illegal exploitation of natural resources, illegal activity in protected areas, prohibited imports and exports, compromises to bio-security, marine pollution, and maritime terrorism.

More generally, maritime interests closer to New Zealand include maintaining good order at sea to protect our border, secure the sea lines of communication, manage our natural resources, and protect our offshore infrastructure such as oil and gas installations and undersea telecommunications links.

Some risks are increasing, particularly those involving transnational organised crime, and those linked to increasing world demand for food and other resources. It is this latter issue that poses the most immediate future threat as the poor state of fishing stocks in the northern hemisphere is seeing a displacement of effort into southern hemisphere fisheries with the consequential pressure on our fish stocks in terms of sustainability.

This is evidenced by the growing number of foreign flagged vessels fishing in the high seas around New Zealand and in the fisheries of the Te Vaka Moana countries (Tonga, Niue, Tokelau, Samoa and Cook Islands). The fisheries in the region are a cornerstone for the economies of these countries and any collapse of those fisheries could potentially lead to economic and/or political instability.

The increased number of foreign flagged fishing vessels in our exclusive economic zone has resulted in a number of instances of illegal, unregulated or unreported (IUU) fishing activity in the past 12 months and this threat is expected to increase. Similarly, IUU fishing activity throughout the Pacific region is increasing and recent patrols (by air) have noticed a disturbing trend of vessels operating with all identifying features removed.

IUU fishing activity is also on the increase in the Southern Ocean and in some cases the vessels operating in this area are using fishing methods that have been banned, for example, those methods that result in significant by-catch of sea birds.

As noted above, marine pollution events always strike a chord with the general public. As this audience knows well, the risk of collision or grounding at sea is always present, especially when operating in congested waterways or in close proximity to navigational hazards. These risks are mitigated through good seamanship, well-charted shipping lanes and the use of modern navigation systems. Notwithstanding, on 5 October 2011, the container ship *Rena* ran aground on a well-chartered reef off one of New Zealand's busiest ports.



For months, contractors have worked tirelessly to remove fuel oil and offload containers; however, weather conditions in January 2012 did not help and as we saw in the media a few weeks ago, *Rena* has split in two and remains a major environmental hazard to New Zealand's coastal waters.

With respect to potential risks or threats to New Zealand, the issue that is at the forefront of senior security sector officials' minds at the moment is the mass arrival by sea of illegal immigrants. Over a number of years, information is indicating that as well as Australia and Canada, New Zealand is a target destination for those asylum seekers who are willing and able to circumvent the system and pay people-smugglers to transport them to a third country to attempt to fast-track their bid to immigrate.

While I acknowledge that the Australian policy in this area is in a state of flux, depending on the outcome of that policy debate and in the face of the hazards that a long open-ocean transit would involve, the risk of New Zealand becoming a destination for asylum seekers is likely to increase. The arrival of the Sri Lankan asylum-seeker vessel MV *Sun Sea* in British Columbia, Canada in 2010 is an example of the distances and risks that people-smugglers and potential illegal immigrants are prepared to take.

The NZ Customs Service is responsible for the operational execution of any plans to intercept board and escort any arrival to a holding area. Immigration maintains the policy lead and the processing of arrivals.

Our plans are well tested and rehearsed but like any plan it relies on the competencies of all parties and the reality that no plan survives beyond H Hour.

## Challenges

As I mentioned earlier, New Zealand has a small population base and comparatively modest economy. This coupled with the current international economic environment and, closer to home, the economic shock resulting from the Christchurch earthquakes means that all government departments are taking budget cuts and all government spending is coming under increasingly closer scrutiny.

New Zealand has always been resource constrained; however, the current economic situation has refocused attention on government spending with a commitment to return to budget surplus in 2014-15. As a result there is a concerted drive within the public sector to economise while at the same time improve performance and accountability.

'Working smarter' is not just a bumper sticker in the New Zealand public service; we have to do it as a matter of financial survival. Put simply, we have to find better and smarter ways of doing business, and the security sector is not immune from this reform process. The quotes below from the deputy prime minister on 31 May 2011 provide a flavour of government's thinking:

the government is committed to getting better value for money from public spending so that we can deliver better public services to taxpayers with little or no new money over the next few years ...

this is about identifying the things that matter most, doing them better and doing them with less back-office bureaucracy...a clear focus on value-for-money, innovation, high-quality service provision and effective change management.

It has already been identified that New Zealand has too many government agencies for a democracy of our size and that more coordination is required across agencies to realise efficiencies to move resources from the back-office functions to frontline services. We have recently seen the Ministry of Fisheries being absorbed by the Ministry of Agriculture and Forestry and there will be further reductions in the number of government agencies as the state sector reform program progresses.

As you are probably aware the New Zealand Defence Force is leading the charge with an aggressive value-for-money reform program underway to release money from the 'back' of the organisation to fund future capability acquisitions. Much of this arose out of the *Defence Review 2010* of which I was part of an independent three member Ministerial Panel.

Other agencies will also be embarking on internal reform programs with the aim of maintaining current outputs with reduced budgets.

In addition to the financial challenge, the wider security sector has to deal with the common perception that New Zealand is 'safe' from external threats and the view that public money would be better spent in other areas such as the education and health sectors.

The *Rena* grounding has raised public awareness of the risk of a major marine pollution event happening in our waters and the yearly deployment of the Japanese whaling fleet to the Southern Ocean focuses public opinion on the fragility of sustaining the whale population, yet there is a public 'blindness' to the capability and rate of effort required to protect our borders and natural resources, and maintain sovereignty over the vast expanses of ocean in New Zealand's immediate area of interest.

So with these challenges in mind, how do New Zealand government agencies work together to meet government's requirements in the security of our maritime interests?

## Whole of Government/Interagency Approach

My challenge now is to provide you with tangible examples to illustrate how using a whole-of-government or close working interagency approach has benefited New Zealand in the maritime security environment.

I will start with the National Maritime Coordination Centre. Following a number of reviews and at government direction, it was established in 2003 with the aim of integrating the work of all agencies to ensure that there was a comprehensive national strategy for managing maritime risks.

It is an integral part of the New Zealand Customs Service but operates independently with staff comprising personnel seconded from Customs and Defence as well as liaison officers from Police and Fisheries. It is physically located within Headquarters Joint Force New Zealand, which not only provides operational benefits but also is very cost effective.

Using a risk management process, effects based tasking priorities are determined and in consultation with the asset owners, it coordinates the allocation of platforms to achieve effective and efficient outcomes.

As most of the assets that are provided are from Defence, the fact that it is co-located at the Operational HQ (and sits between the J3 and J2 areas) assists greatly in terms of liaison, planning and managing day-to-day multi-agency operations.

Spawned from the National Maritime Coordination Centre and developed by the New Zealand Defence Force, a good example of interagency cooperation has been the introduction of a Multi-Agency Network at the restricted level (MAN-R). Not so long ago each agency - such as the New Zealand Defence Force, Customs, Fisheries, Police - operated systems that provided secure communications within their own organisations but were unable to talk or pass operational data by secure means between the other government agencies.

The problem was exacerbated by the requirement for Fisheries and Customs to communicate with their people embarked in ships or aircraft. MAN-R is now deployed and is providing an effective command and control tool to support multi-agency operations in the maritime environment. The next step will be to move it to a more highly classified domain.

New Zealand's capability and capacity to conduct maritime patrol and response activities in our exclusive economic zone, the Southwest Pacific and the Southern Ocean has increased significantly with the introduction into service of the inshore and offshore patrol vessels that were purchased under the auspices of Project Protector.

The inshore patrol vessels have been operating successfully in New Zealand's coastal waters for over two years now. They have done sterling work in support of many different agencies with tasking including resource protection, interdiction of potential drug trafficking vessels, counting marine life for the Department of Conservation, disaster relief response, and search and rescue.

Since their introduction into service, customs officers, as well as officers from other agencies, have regularly deployed in these vessels and many of the vessels operations are Customs based and supported through the National Maritime Coordination Centre. They not only work in concert with other New Zealand Defence Force platforms but also with Customs aerial surveillance and surface patrol assets.

Meanwhile the offshore patrol vessels have spent the past year or so conducting trials, working up and exploring their operating envelopes in the outer reaches of the exclusive economic zone, the Southwest Pacific, the deep Southern Ocean and the Ross Sea.

As I mentioned earlier, both the inshore and offshore vessels were delivered as part of the Project Protector package. This project provides a good example of the whole-of-government approach. From the early stages of the project, stakeholder agencies were involved to ensure that their capability requirements were included in the function and performance specification documentation and this involvement continued through the tender evaluation process.

Not all of the individual capability requirements were met; however, by being involved in the process and party to the trade-off discussions meant that the other agencies understood why certain decisions were taken and had a good feel for what the project would ultimately deliver.

While New Zealand's maritime patrol capability and capacity has been significantly enhanced in recent times, the key enabler for the effective and efficient employment of maritime patrol assets is intelligence.

Sharing of information between government agencies in the past has been problematic largely due to the lack of a common data storage/retrieval system and the requirement to protect third party sources. This had certainly been the case with those agencies involved in border security.

Notwithstanding these constraints, the New Zealand Customs Service has taken the lead and established an Integrated Targeting and Operations Centre located at Customs House in Auckland.

The mission of the Integrated Targeting and Operations Centre is to support the command and coordination of border sector operations, across New Zealand's layered border enforcement strategy. The agencies that are currently represented at it are: Customs, Ministry of Agriculture and Forestry Biosecurity, Immigration, Maritime New Zealand, and Police.

It is a 24/7 facility and is set up to facilitate different pieces of information and intelligence from different sources to be brought together in one place, allowing patterns to emerge under analysis and with the potential to improve the tactics we use to keep the border secure. There is still no common automated computer-based

system of pooling information; however, by having representatives from the various agencies involved with border operations together in one place, this has appreciably enhanced New Zealand's protection from a border control perspective.

The establishment of the Integrated Targeting and Operations Centre did come with some reputation and interagency relationship risk; however, it was a risk worth taking. It required agencies to work together on border security and its success has already been demonstrated in intercepting drugs and illegal immigrants at the border.

The examples of interagency cooperation I have provided to this point have very much been at the tactical and operational level. I will now touch briefly on how security sector interagency arrangements are managed at the strategic level.



*Figure 1: New Zealand arrangements for domestic and external security coordination*

The role of the Officials Committee for Domestic and External Security Coordination is to act on the Prime Minister's behalf to exercise policy oversight of the New Zealand intelligence community and ensure that the agencies which constitute this community are efficient, effective, balanced and responsive in the performance of individual and collective responsibilities, and that they are geared to provide timely, relevant and useful intelligence and assessments on developments which are likely to affect New Zealand. It also maintains oversight of security within government departments and agencies and is responsible for setting standards or requirements for government departments and agencies to follow. The Committee provides advice and guidance on policy and operational matters relating to counter-terrorism and the management of terrorist incidents. From time to time, the Committee also provides advice to Cabinet or relevant sub-committee on external security matters where a coordinated interdepartmental stream of policy advice is appropriate.

Over the past 18 months in New Zealand there have been a number of events that have required a multi-agency response. These events include the two significant Christchurch earthquakes (4 September 2010 and 22 February 2011), the Pike River Mine disaster (November 2010), and the *Rena* grounding. In this list I would also include the considerable interagency planning and execution of the security arrangements for the New Zealand hosted Rugby World Cup in 2011.

The success to the multi-agency responses to these events has come about, in large part, by close interagency cooperation built on personal relationships that have developed at all levels in the various agencies including those in the wider security sector.

These personal relationships and a working knowledge of how each others' agencies operate pay dividends: during planning and coordination meetings when priorities need to be set; during operations when there are competing demands for resources; and, especially when responding at the national level to unforeseen events.

## Conclusion

In conclusion, New Zealand is remote in a geographical sense yet faces many of the same maritime risks and threats that confront other less isolated maritime nations. Notwithstanding, there is a perception in the general public that New Zealand is 'safe' from external threats.

New Zealand has always been resource constrained but is currently experiencing greater challenges as a result of the global financial crisis and the financial burden of rebuilding Christchurch.

What we have learnt is that only through interagency coordination can the best results occur, especially when constrained by tight financial circumstances. The benefits are immense, the outcomes obvious and tangible.

State sector reforms are driving government agencies to implement smarter ways of doing business including greater cooperation between agencies to make more effective and efficient use of taxpayer funds.

Finally, the security sector has a good track record of adopting whole-of-government approaches and benefiting from working in multi-agency frameworks, but there is still more that can be done to improve performance and achieve desired security outcomes.



# Maritime Cooperation in the Malacca Strait

*Datuk Mohd Amdan*

The Malacca Strait is one of the busiest and most critical waterways in the world, with a third of the world's trade and more than half of the world's oil supply carried by some 75,000 vessels transiting it each year.<sup>1</sup> Major economies such as the United States, China, Japan and India all have stakes in ensuring the safe passage of shipping through it. There has been much concern over the safety of navigation in the Malacca Strait but attention has been focused on piracy and armed robbery at sea. The fundamental issue for the littoral states of the straits is the safety of shipping in its total dimensions; encompassing issues of security, safety and environmental protection. Predominantly, the littoral states of the Malacca Strait were worried on the implications of maritime crimes in the strait, increased shipping traffic, the threats posed to the marine environment, the high costs of maintaining navigational safety and environmental protection.

Ensuring safe and secure navigation and the care for marine environment are shared responsibilities of the littoral states, the user states, the shipping industry, and other stakeholders. It calls for more effective law enforcement and the maintenance of maritime order. Consequently, the establishment of an effective regime of maritime security, safety and environmental protection in the Malacca and Singapore straits had received much attention and efforts in recent years. Regional cooperation is an important measure in addressing maritime safety and security issues. Greater cooperation and collaboration among littoral states in the straits is evident. Nevertheless managing maritime safety and security in the straits could at times be very challenging as diverse nature of interests is involved.

Hence the objective of this paper is to highlight: maritime security and safety issues and challenges in the Malacca Strait; maritime security and safety cooperation in the Malacca Strait; lessons learnt; and a way forward. I intend to discuss only on piracy/robbery at sea cooperative measures,<sup>2</sup> anti-human smuggling cooperative measures and Malacca Straits Cooperative Mechanism on safety of navigation and environmental protection.

## Needs and Basis for Cooperation

Cooperation is essential if maritime security and safety of the strait is to be achieved. Prominence on cooperation and agreements among regional agencies in combating maritime crimes and building confidence and trust are vital. Malaysia will continue to nurture and enhance these collaboration and cooperation and recognises that there is no one mechanism to deal with all threats, all the time and there needs to be greater efforts towards maritime domain awareness. It deprives criminals of safe



havens, accelerates information sharing and request/response processes, allows burden sharing and sharing of resources, facilitate better supervision of flag state merchant fleets.

There are two basic requirements that must be met to achieve effective cooperation: adequate national capacity and tailored international arrangements be they bilateral or multilateral. National capacity that the littoral states must possess include the ability to constantly monitor shipping in the straits, ability to collate and disseminate real-time information, interagency cooperation, established points of contact and communication means, and full implementation of the International Ship and Port Facility Security Code to reduce risk onboard and port areas.<sup>3</sup> While respecting the national sovereignty of littoral states, there are number of international and regional agreements that can be part of the legal framework for cooperation in the strait. Among others include the *United Nations Convention Ion the Law of the Sea 1982* (LOSC), the *Batam Joint Statement of the 4th Tripartite Ministerial Meeting of the Littoral States on the Straits of Malacca and Singapore* (2005), and the *Jakarta Statement on Enhancement of Safety, Security and Environmental Protection in the Straits of Malacca and Singapore* (2007).

Managing maritime safety and security in the straits has been high on the agenda of regional summits and conferences. The past seven years had seen many initiatives and measures that were put in place towards enhancing safety and security in the straits by the littoral states, international communities and user states. The current cooperative initiatives and measures are outcomes of discussions at the 4th IISS Shangri-La Dialogue in 2005, and the 2005 Batam and 2007 Singapore statements. These three events were significant milestones which have led to many cooperative activities in the straits.

## Maritime Security and Safety Issues in the Malacca Strait

The littoral states of the Malacca Strait share a large vested interest in its security and safety; where piracy and robbery at sea are of main concern. The littoral states are also apprehensive about other transnational crime specifically: illegal immigration, human smuggling, trafficking of arms, drugs and other contraband across the Malacca Strait. Apart from these crimes, the littoral states are equally concerned about safety of navigation, environmental threats, particularly from ship-borne marine pollution; both from the risk of accidental pollution as a result of collisions or grounding and intentional pollution from tank cleaning.

## Piracy Cooperative Counter Measures

### Piracy/Robbery Cases

With regard to piracy and armed robbery at sea, the last seven years witnessed a tremendous decline in piratical attacks and armed robbery in the Malacca and Singapore straits. From 38 cases in 2004, the menace of piracy and robbery at sea

in the straits has been almost completely eradicated to only 2 cases in 2009 and 2010 and only 1 case in 2011; as shown in Table 1. The reduction was the outcome of enhanced surveillance and effective enforcement by littoral states and active preventive measures by mariners onboard. The littoral states should feel proud for their continued and enhanced cooperation which has directly facilitated in ensuring the overall number of attacks is kept under control.

Location	2003	2004	2005	2006	2007	2008	2009	2010	2011
	28	38	12	11	7	2	2	2	1

*Table 1: Reported Piracy/Sea Robbery in the Malacca Strait - 2003-11*

### Cooperative Measures

In the case of piracy and sea robbery in the Malacca and Singapore straits, various indigenous and regional measures have been taken at national, bilateral and multilateral levels with support from international communities and major user states. At the national level, the littoral states of Indonesia, Malaysia and Singapore have all taken steps to address and mitigate the issue of piracy and robbery at sea by enhancing their naval and law enforcement agency capacities, established integrated surveillance and information networks, and increased patrols and interdictions. There have been efforts at bilateral cooperation as well among these littoral states; such as bilateral patrol arrangements; coordinated patrols, points of contact, direct communication links; information sharing and periodical meetings that have helped cement greater cooperation. Multilateral responses to piracy and robbery at sea have taken shape and contributed significantly to the overall reduction of piracy and robbery at sea in the straits. Relevant activities include the trilateral Malacca Strait Sea Patrols, and coordinated airborne surveillance under the 'Eyes in the Sky' arrangement,<sup>5</sup> and the establishment of *Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia*.

### Anti-Human Smuggling Cooperative Counter Measures

Human smuggling is a dynamic transnational organised crime. It spans continents, is linked to organised crime syndicates and crosses multiple national jurisdictions. These are increasingly controlled by transnational organised crime syndicates whose smuggling ventures comprise several aspects: recruitment of passengers, transfer through a number of transit points prior to boarding vessel for Australia, document fraud, and post-departure support that include re-supply of vessel during the venture and replacement vessels in the event initial vessel becomes unseaworthy. Human smuggling networks often work with many different human smuggling organisations, in order to maintain security, flexibility and agility to ensure success and maximum profits. They are normally independent and only responsible to a small portion of the overall smuggling journey. This loose, fluid

nature of the network minimises its vulnerability to law enforcement interdiction. Each of these aspects presents a potential vulnerability for the syndicates and opportunity for government agencies for the removal of key individuals in the command and control chain that would disrupt syndicate activity.

In recent years, the smuggling of human beings across the Malacca and Singapore straits has increased significantly. People are smuggled into Malaysia from Afghanistan, Iran, Iraq, Pakistan, Syria, and Sri Lanka through neighbouring/source countries and smuggled into Australia by sea. Since September 2008, there has been a significant increase in irregular maritime arrivals into Australia; from 7 suspected irregular entry vessels arrival in 2008 to 18 in 2009. Of these 2009 arrivals at Christmas Island, 464 claimed to be Afghans and 436 are Sri Lankan. Small numbers of Iraqis, Iranian, Indonesian and Somali nationals have also been recorded.

### **Cooperative Measures**

Combating people smuggling is not easy. National responses by a single country are relatively ineffective as these human smuggling organisations/syndicates are very agile and maintain a very high operational security. Hence international cooperation is key to dismantling human smuggling activities especially in four broad areas: intelligence/information sharing, border control management, law enforcement agency cooperation, and capacity building.

During top-level talks Malaysia-Australia and Australia-Indonesia agreed to step up bilateral cooperation in the fight against people smuggling. Australia will continue to work with Indonesia, Malaysia and other countries in the region to improve border security and migration management and at the same time ensure appropriate support for displaced populations and resolution of protracted humanitarian situations. Indonesia, Malaysia and Australia will continue effective regional dialogue to find practical ways to provide assistance and protection to vulnerable people and reduce the potential for exploitation by people smugglers. At an operational level, the cooperation includes immigration, customs, border protection, intelligence gathering and information sharing. Bilateral memoranda of understanding are in place to further strengthen efforts in combating human smuggling.

### **Cooperative Mechanism in the Malacca Strait for Navigation Safety and Environmental Protection**

The legal regime governing straits used for international navigation gives much greater weight to the navigational interests of the international community than to the environmental and security interests of the littoral states. The rights of the littoral states to regulate ships exercising transit passage are severely restricted. At the same time littoral states bear a heavy burden in the maintenance of navigational safety of ships using such straits. Ensuring open, safe and secure navigation and

the safeguarding the marine environment of the Malacca and Singapore straits is a shared responsibility of the three littoral states of Indonesia, Malaysia and Singapore, the user states, the shipping industry, and other stakeholders. Consequently, the creation of the Cooperative Mechanism in the Malacca and Singapore straits has paved the way for burden sharing, which embodies cooperation among littoral states, user states, and the stakeholders on a voluntary basis.<sup>6</sup>

The Cooperative Mechanism in the Malacca and Singapore straits is unique, because it represents the successful establishment, for the first time, of the type of cooperative mechanism for the management of international straits envisaged in LOSC Article 43. Additionally, its uniqueness is in the diversity of roles played by various actors: littoral states, the International Maritime Organization, shipping industries and volunteers in enhancing safety and environmental protection in the Malacca and Singapore straits.

This cooperative mechanism will provide a regular platform for dialogue between the littoral states, user states and users of the straits, as well as a structured framework for cooperation with the international community. The mechanism facilitates the exchange of views, joint projects and voluntary monetary contributions through the following three components: a forum for regular dialogue, a committee to coordinate and manage specific projects, and a fund to receive and manage financial contributions.

The Cooperative Mechanism is beginning to gain widespread support for projects aimed at enhancing the safety of navigation and environmental protection in the straits that were first proposed by the littoral states. Under the Cooperative Mechanism, the three littoral states and user states agreed to set up the Aid to Navigation Fund, which will be managed by the littoral states. Under the mechanism, a Projects Coordination Committee was also set up to oversee the implementation of six projects, including the removal of wrecks in the Traffic Separation Scheme in the straits, cooperation and capacity building on hazardous and noxious substance preparedness and response in the straits. The committee will also supervise the setting up of tide, current and wind measurement systems to enhance navigation safety and marine environment protection, replacement and maintenance of aids to navigation in the straits.

The projects cover: responses to incidents involving hazardous and noxious substances; Class B transponders on small ships; establishing a tide, current and wind measurement system; and replacement/maintenance of aids to navigation and aids to navigation damaged in the December 2004 tsunami were widely endorsed by user states and stakeholders. The progress made in the implementation of the Marine Electronic Highway demonstration project for the Malacca and Singapore straits is very pleasing indeed.

## Lessons Learnt

It is heartening to note that the three littoral states are like-minded, open, inclusive and able to work together. There is a convergence of interest in ensuring piracy/robbery at sea in the straits is under control. While these states assert their sovereignty over their territorial seas in the Malacca and Singapore straits, at the same time they recognise the rights and interests of the user states, shipping industries and other stakeholders. Additionally, the three littoral states are committed to uphold and apply relevant international laws in the straits. As piracy and robbery at sea is very much a law enforcement issue, currently there is no operational level cooperative mechanism among littoral states' maritime law enforcement agencies. The Malaysian Maritime Enforcement Agency hosted a working level meeting in November 2009 to pave ways to establish multilateral cooperation between Malaysian Maritime Enforcement Agency, Singapore Police Coast Guard, BAKORKAMLA Indonesia, and the Royal Thai Marine Police.

There is a parallel between what is happening in the Gulf of Aden and what used to happen in the Malacca and Singapore straits. In the case of the Malacca and Singapore straits, indigenous and regional measures have been adopted at national, bilateral and multilateral levels with support from the international community unlike in the Gulf of Aden where the responses are from the international community alone.

Littoral states do have a significant role to play in suppressing piracy and robbery at sea. Though piratical attacks and robberies are committed onboard ships, the causal factors and effective solutions are actually found ashore. Patrols and interdiction at sea may be effective at reducing piracy and robbery at sea but the reality is that very few offenders are actually caught at sea hence the more effective solutions lie in traditional policing ashore including develop a picture of their modus operandi, investigation of possible links between piracy/robbery at sea and organised crime, their financial trail and interdiction of their 'nests'.

There is a need to complement border controls by increasing law enforcement efforts to dismantle the human smuggling networks in the countries of origin and transit and through enhanced international law enforcement cooperation between countries of destination, transit and origin. There is also a need for prosecutors and the judiciary to cooperate across borders to ensure that migrant smugglers are brought to justice.

Unless the organised crime groups who smuggle people are dismantled, people smugglers will continue to operate and quickly adapt their methods and routes to changing circumstances such as improved border controls or changes in the visa regimes. Regional and inter-regional approaches must be fostered as a priority. Without strong cooperation between countries of destination, transit and origin within and between regions, migrant smuggling will continue across borders

without meeting with a strong cross-border challenge. In many instances, national and bilateral responses to migrant smuggling have only resulted in displacement of routes to other countries.

The Cooperative Mechanism in the Malacca and Singapore straits is a milestone breakthrough in the efforts of all parties in enhancing safety and environmental protection through the straits. The creation of the cooperative mechanism is an opportunity to maintain, even strengthen, the already established channels of communication among all parties concerned, thus facilitating a meaningful dialogue for the accomplishment of all objectives set. The three littoral states have been able to work together on improving navigational safety and environmental protection in the straits, through the Tripartite Technical Experts Group. The three littoral states are open and inclusive with regard to sovereignty and the rights and interests of user states, shipping industry and other stakeholders. There is shared interest between littoral states and user states in enhancing the navigational safety and environmental protection of the straits.

International law, especially the LOSC, has set the jurisdictional balance. While littoral states are not allowed to obstruct transit passage, neither are flag states exercising the right to transit passage allowed to threaten the sovereignty, sovereign rights, territorial integrity and other security interests of the littoral states. Thus, the corridor and basis for cooperation has clearly been laid out under international law. It is also important to set a balance between the interests of different stakeholders, especially different user states.

For a long time Japan was the only user state willing to help the littoral states. It is heartening to note that other user states such as Australia, China, the European Union, India, Germany, Greece, Republic of Korea, United Arab Emirates, United States, and the International Maritime Organization and Middle East Navigational Aids Services have come forward in assisting the littoral states.

## Way Forward

As a way forward the following measures are considered desirable:

- The current cooperative arrangements for maritime security be maintained and improve cooperation among the littoral states' navies and coastguards to provide prompt responses to incident at sea.
- Continue to address maritime security issues of the Malacca and Singapore straits by taking into consideration of all stakeholders' interests.
- Establish multilateral cooperation between Malaysian Maritime Enforcement Agency, Singapore Police Coast Guard, Indonesian Marine Police and Royal Thai Marine Police so as to provide effective policing of the straits.

- Timely information sharing and real time operational cooperation between littoral states' law enforcement agencies.
- Conduct coordinated sea patrols in designated high risk areas.
- User states and international community help build littoral states' maritime enforcement agencies' capacity to suppress maritime crimes. LOSC Article 43 can be successfully implemented in other straits used for international navigation based on the Cooperative Mechanism in the Malacca and Singapore straits.
- Continue to take a comprehensive and inclusive approach to maintain security, safety and environmental protection in the Malacca and Singapore straits that also recognise the interests of all users and stakeholders.
- Since the littoral states have presented several projects for adoption and many more to follow, the major user states and interested stakeholders will have to contribute to the Revolving Fund. The interests of the many countries and organisations to share the burden in the maintenance of navigational aids in the Malacca and Singapore straits should be supported and enhanced.
- It is also hoped that more contributions to the Revolving Fund will come from other stakeholders, such as from the shipping industry, and oil companies, within the context of their corporate social responsibility, as well as from other environmental groups and international or regional organisations.
- A balanced emphasis should be placed on fostering operational relationships between and among littoral states' maritime law enforcement agencies to better facilitate law enforcement cooperation as a whole.

## Conclusion

As global trade continue to grow and shipping traffic increases, the crucial task of maintaining safety, security and preserving the marine environment in the Malacca and Singapore straits grows in tandem. There is therefore the need for continuous and wider cooperation between the littoral states, user states and other stakeholders of the straits to ensure that this vital waterway remains safe and open to traffic.

The basis of cooperation in the Malacca and Singapore straits has clearly been laid out by international regimes. Therefore it should be understood that regional cooperation requires reconciling interests of all stakeholders and at the same time recognising the concern for sensitivity of littoral states' concern. It is also important to set a balance between the interests of different stakeholders, especially different user states.

The positive spirit of cooperation and determination by the littoral states of the Malacca and Singapore straits and all stakeholders to tackle maritime security and safety issues in a concerted manner that pervaded the Jakarta meeting has so far borne rich fruit. While, at the same time and in parallel, it contributes substantially towards raising the navigational safety and environmental protection standards. The cooperative mechanism is an excellent model to promote maritime security and safety cooperation.

## Notes

- 1 Joshua Ho, 'The Security of Sea lanes in Southeast Asia', *Asian Survey*, vol 46, no 4, July/August 2006, p. 559.
- 2 LOSC article 101 defines piracy as:
  - (a) any illegal acts of violence or detention, or any act of depredation, committed for private ends by the crew or the passengers of a private ship or a private aircraft, and directed-
    - (i) on the high seas, against another ship or aircraft, or against persons or property on board such ship or aircraft;
    - (ii) against a ship, aircraft, persons or property in a place outside the jurisdiction of any State;
  - (b) any act of voluntary participation in the operation of a ship or of an aircraft with knowledge of facts making it a pirate ship or aircraft;
  - (c) any act of inciting or of intentionally facilitating an act described in subparagraph (a) or (b)

IMO Resolution A.922(22) defines 'armed robbery against ships' as 'any unlawful act of violence or detention or any act of depredation, or threat thereof, other than an act of piracy, directed against a ship or against persons or property on board such a ship, within a State's jurisdiction over such offences'.
- 3 The International Ship and Port Facility Security Code is a comprehensive set of measures to enhance the security of ships and port facilities implemented through chapter XI-2 of the *International Convention for the Safety of Life at Sea 1974*.
- 4 International Maritime Bureau, *Piracy and Armed Robbery Against Ships*, various years.
- 5 Daily air surveillance in the Malacca Strait by Singapore, Malaysia, Indonesia and Thailand.
- 6 The Cooperative Mechanism comprised three components: Cooperation Forum, Project Coordination Committee and Aids to Navigation Fund. It was first introduced in September 2006 at the Kuala Lumpur Meeting and was endorsed and agreed upon by the three littoral states at the Singapore Meeting in September 2007.





# Enhancing Maritime Security Cooperation

*Ng Chee Peng*

Vice Admiral Ray Griggs, Chief of the Royal Australian Navy, fellow navy chiefs and heads of delegation, distinguished guests, ladies and gentlemen. Good afternoon.

Let me first thank VADM Griggs and the RAN for inviting me to speak with you. I am delighted to be here in Australia, and to be able to share with you some of my thoughts on enhancing maritime security.

## Importance of Global Maritime Trade and SLOC Security

Other speakers have highlighted the critical importance of maritime trade to the global economy. Let me underscore this with some figures. Transportation of freight by sea is estimated to be 10 times cheaper than rail, 45 times cheaper than road and 163 times cheaper than air. It is unsurprising therefore that 80 per cent of world trade is today transported by sea. From the clothes we wear to the fuel that powers our vehicles and factories, these basic necessities of modern life are largely brought to us by seaborne trade. As the world economy becomes increasingly interconnected, any disruption to maritime commerce routes would have severe consequences. Such disruption to the sea lines of communication in a particular region have ramifications that would ripple through the international community.

A major threat to seaborne trade is piracy. It is estimated that piracy costs the world economy some US\$7-12 billion per year. Over the past few years, the Gulf of Aden has been put in the international spotlight due to the burgeoning piracy problem. Ship insurance premiums have risen, alongside fuel costs from re-routing and security equipment expenses, all adding to a considerable rise in the cost of trade.

## The Necessity of Maritime Security Cooperation

Beyond piracy, we face a wide spectrum of other maritime threats and challenges, including maritime terrorism and proliferation of weapons of mass destruction. These maritime security challenges transcend national boundaries and no single country has the bandwidth and resources to address them alone.

On 28 July 2010, MV *M Star*, a Japanese supertanker, suffered a terrorist attack from a boat laden with explosives, when transiting the Strait of Hormuz. A militant group known as the Brigades of Abdullah Azzam, which has links to Al Qaeda, claimed responsibility for the attack. Such terrorist groups do not respect boundaries or borders. The brand of terrorism peddled by Al Qaeda and its network of affiliates are not confined to one part of the world, nor is any country immune to their attacks. Just as Al Qaeda shares information and resources with its affiliates across the globe,

maritime security forces around the world cannot afford to operate in isolation. As the sea knows no bounds, so must the barriers that impede our cooperation be brought down.

## Singapore's Role as a Responsible Stakeholder

As an island nation, maritime security cooperation remains fundamentally important to Singapore. The Singapore Armed Forces (SAF) contributes actively to the counter-piracy efforts in the Gulf of Aden. Since 2009, the SAF has helmed the Combined Task Force 151 twice, and deployed three Task Groups, each consisting of a Landing Ship Tank and two helicopters. We also deployed a maritime patrol aircraft to perform maritime surveillance operations from April to July 2011.

These deployments, working alongside coalition and international partners, have allowed us to discern three key success factors that we believe are essential to enhancing maritime security cooperation not just in the Gulf of Aden, but also in Southeast Asia and beyond: first, fostering mutual understanding and trust; second, establishing collaborative information sharing networks; and third, building interoperability and capacity to collaborate. Let me elaborate.

Fostering mutual understanding and trust is a necessary first step in establishing any cooperative maritime framework. This can be built through regular exchanges and interactions between the partner countries and agencies, at the strategic as well as operational levels. It is with mutual understanding and trust that we can take concrete actions and effective measures to tackle the maritime security threats together. Opportunities therefore must be identified and created for stakeholders to confer on a regular basis at both the strategic and operational levels.

The next key success factor is establishing collaborative information-sharing frameworks. There is a growing realisation amongst stakeholders of its compelling value proposition. Information sharing contributes to comprehensive maritime awareness. It enables operational responses to be employed effectively to enhance maritime security and safety, provided of course that partners are able and willing to share. To enable and enhance partners' ability to share, robust Command and Control Information System networks need to be put in place to allow rapid dissemination of information to cue operational actions. To enhance the willingness to share, the ingredient of mutual trust and understanding would be key.

This leads me to the third key success factor of building interoperability and capacity to collaborate. This success factor is about putting words, dialogues, and discussions into practice, and working out the 'nuts and bolts' of operating together. It can be established through bilateral, multilateral and multi-agency exercises to build familiarity and interoperability. This is crucial to enable forces from different countries to orchestrate an effective joint operational response when the need arises.

## Key Success Factors in the Southeast Asian Context

I will now talk about how these success factors have contributed to enhancing maritime security cooperation in Southeast Asia.

Countries in Southeast Asia recognise that mutual understanding and trust are needed at both the strategic and operational levels. In our region, forums such as the ASEAN Defence Ministers Meeting (ADMM), ADMM+, the Shangri-La Dialogue, the ASEAN Navy Chiefs' Meeting, and the Malacca Strait Patrol Joint Coordinating meetings have helped build up mutual understanding and trust amongst the defence ministers, the navy chiefs, right down to the operational commanders. Each of these forums has a unique role and agenda, from building strategic confidence, fostering practical cooperation and collaboration, down to ironing out operational details, but the fundamental principles that underpin these forums are similar, and include the commitment to open and inclusive dialogue, mutual respect, and resolving differences peacefully in accordance with international law. These guiding principles have provided a basis for sustainable trust and cooperation.

Moving forward, we need to continue to identify opportunities to bring together stakeholders in the region to confer on a regular basis, to build strategic confidence, stimulate sharing of best practices and operational information, raise awareness on regional maritime security threats, develop effective collective measures, as well as identify and resolve operational gaps.

We are seeing the healthy emergence and growth of information sharing centres and maritime operations coordination agencies in the region in recent years. Singapore's information fusion centre, Indonesia's BAKORKAMLA crisis centre, Malaysia's Maritime Enforcement Agency, Brunei's maritime rescue coordination centre, The Philippine's maritime research information centre, are some examples of maritime security centres in the region. These establishments are the key building blocks for a region-wide collaborative information sharing framework, or what I term as, a 'network of networks' to take shape.

To this end, within ASEAN, we are already taking concrete steps to operationalise this network of networks. At the ASEAN Navy Chiefs' Meeting held in Hanoi in July 2011, we approved for the ASEAN Information Sharing Portal (AIP) to be used as the platform for information sharing within the ASEAN region. It is a seamless portal that connects all the information fusion and operations centres in ASEAN so as to enhance information sharing and sense-making, as well as enable efficient coordination of regional operational responses. It will also enable the regional operational commanders to be connected 24/7 to discuss best practices, and coordinate a whole-of-region response against maritime threats at the operational level. The Indonesian and Singapore navies co-organised the first workshop to train the regional maritime practitioners on the usage of the AIP in November 2011, and we are on track to fully operationalise it during the inaugural ASEAN Information Sharing Exercise in mid-2012.

Beyond information sharing and operations coordination, we can also seek to experiment and share new tools of sense-making and collaboration on the portal, ensuring that the portal is effective and current, and that the benefits of enhanced information sharing are proliferated to every member country.

The benefits of information sharing can be reaped beyond Southeast Asia. This is illustrated in the operational response to the hijacking of Indonesian-flagged MV *Sinar Kudus* off the coast of Somalia in March 2011. Upon receiving the hijack alert from *Sinar Kudus*, the UK Maritime Trade Office shared the real-time location of the vessel with the operational forces operating in the Gulf of Aden and with Singapore's information fusion centre, which subsequently passed this information to our Indonesian friends. Leveraging this information sharing network, the Indonesian navy swiftly deployed two frigates and a support ship into the Gulf of Aden and were able to maintain continuous surveillance of *Sinar Kudus* before escorting the ship to a safe location upon her release from the pirates. This example highlights the importance of establishing information sharing linkages, as well as the need to keep expanding the networks of networks to support our operational forces.

Looking at building interoperability, initiatives such as the Western Pacific Naval Symposium maritime security exercises, the maritime information sharing exercises, the annual Southeast Asia Cooperation Against Terrorism, and the Five Power Defence Arrangements series of exercises have brought together regional and international partners to operate together based on a common set of techniques, tactics and procedures. These include exercising the information sharing and sense making processes, as well as validating the linkages between various operations centres and command teams in responding to a spectrum of maritime security operations.

Such practical cooperation reinforces dialogues in building not just strategic confidence, but also personal ties and interoperability amongst ground forces. When faced with maritime threats such as piracy or terrorism, this interoperability and familiarity amongst our regional naval forces will translate to effective operational ground responses.

## Conclusion

In conclusion, we would need to build on these key success factors to enhance maritime security cooperation in an increasingly inter-connected world. The trans-boundary nature of maritime security threats requires a cooperative and collaborative international response. The tenets of fostering mutual understanding and trust among partners, establishing collaborative information sharing networks, and the building of interoperability and capacity to collaborate will be the cornerstones for success in tackling the complex and evolving maritime threats. Together, we can make our seas safe and secure for all.

PART 4

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Sea Power



# The Marine Nationale in the Southwest and Southern Indian Ocean

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Christian Bouchard

Rooted deep in a long and rich colonial history, France's presence and involvement in the Indian Ocean is taking on a new dimension in the wake of policies outlined in the 2008 *Defence White Book* and the 2011 *Southern Indian Ocean Blue Book*. First, the military presence in the north-western Indian Ocean is considered of prime national interest as part of the geostrategic axis where France intends to position its forces abroad in the coming two decades. Second, this innovative French regional maritime policy testifies to France's ambition to play a leading role in the maritime domain and strengthen the position of its island territories in this part of the world.<sup>1</sup> For both policies, it is noteworthy that the French navy, *Marine nationale*, constitutes a very important asset for France in a maritime region where it seeks to remain engaged and credible as well as to be helpful.

In the Indian Ocean, France can be considered as both a regional state, at least on behalf of its island territories, and an external great power significantly involved in the region.<sup>2</sup> As a regional state, it is first and foremost concerned with the southwest quadrant of the Indian Ocean where it claims and exercises sovereignty over ten small islands entities (see Figure 1 and Table 1), namely:

- Réunion and Mayotte (the only inhabited islands), respectively part of the Mascarene and Comoros archipelagos<sup>3</sup>
- the Crozet Islands
- Kerguelen Islands and Saint-Paul and Amsterdam Islands in the southern Indian Ocean
- the Bassas da India atoll, the Glorioso Islands, Juan de Nova, Europa Island and Tromelin Island, which are located around Madagascar and known as the Scattered Islands.<sup>4</sup>

Altogether, these island territories are seen as being 'France of the Indian Ocean'. As an external great power, France is mainly involved in the north-west quadrant of the Indian Ocean (north of Seychelles and west of India), including and extending to the Arabian Gulf and the Red Sea, as well as to the strategic maritime chokepoints of the Strait of Hormuz and Gulf of Oman, the Gulf of Aden, the Bab el-Mandeb and the Suez Canal.

In terms of its military presence in the Indian Ocean region, France has three regional commands, namely: ALINDIEN which includes the French maritime forces in the Indian Ocean Maritime Zone and the French forces in the United Arab Emirates; COMFOR Djibouti for the French forces in Djibouti; and COMSUP FAZSOI for the



French army forces in the Southern Indian Ocean Zone (FAZSOI) that are based mostly in Réunion but also in Mayotte. In brief, ALINDIEN and COMFOR Djibouti can be seen as instruments of France as an external great power while the FAZSOI can be seen as more legitimate regional forces firstly serving and protecting the interests of ‘France of the Indian Ocean’, even though it also contributes to serve and protect France’s general interests in both the eastern and southern Africa and the Indian Ocean region and the southern Indian Ocean.

<b>Territory</b>	<b>Status</b>	<b>Land area (km<sup>2</sup>)</b>	<b>Population (2011)</b>	<b>Claimed TS+EEZ (km<sup>2</sup>)</b>
<b>Crozet</b>	One of the five districts of the French Southern and Antarctic Lands	352	No permanent Population	562,000
<b>Kerguelen</b>	One of the five districts of the French Southern and Antarctic Lands	7215	No permanent Population	547,000
<b>Mayotte</b>	Overseas department and region	374	205,000	62,000
<b>Réunion</b>	Overseas department and region	2512	805,000	304,000
<b>Saint-Paul and Amsterdam</b>	One of the five districts of the French Southern and Antarctic Lands	62	No permanent Population	506,000
<b>Scattered Islands (of the Indian Ocean)</b>	One of the five districts of the French Southern and Antarctic Lands	44	No permanent Population	692,000

*Table 1: French territories in the Indian Ocean<sup>5</sup>*

This paper focuses on the naval component of the FAZSOI, which operates in what is defined by the French government as the Southern Indian Ocean Maritime Zone, an area of 22 million km<sup>2</sup> extending from the Equator to the 60° latitude South. More specifically we assess the significance of the *Marine nationale* in the overall regional maritime affairs, as well as for France’s national interests in the region and for ‘France of the Indian Ocean’. After briefly presenting the history, organisation, mission and resources of the *Marine nationale* in the region, we then review the main maritime issues and *Marine nationale* contributions in the specific contexts of the southwest Indian Ocean, including special attention to Mayotte’s local situation, and of the southern Indian Ocean. This will show the extent to which the *Marine nationale* is a very important actor in these two maritime regions, as well as how relevant it is to the security and wellbeing of ‘France of the Indian Ocean’.

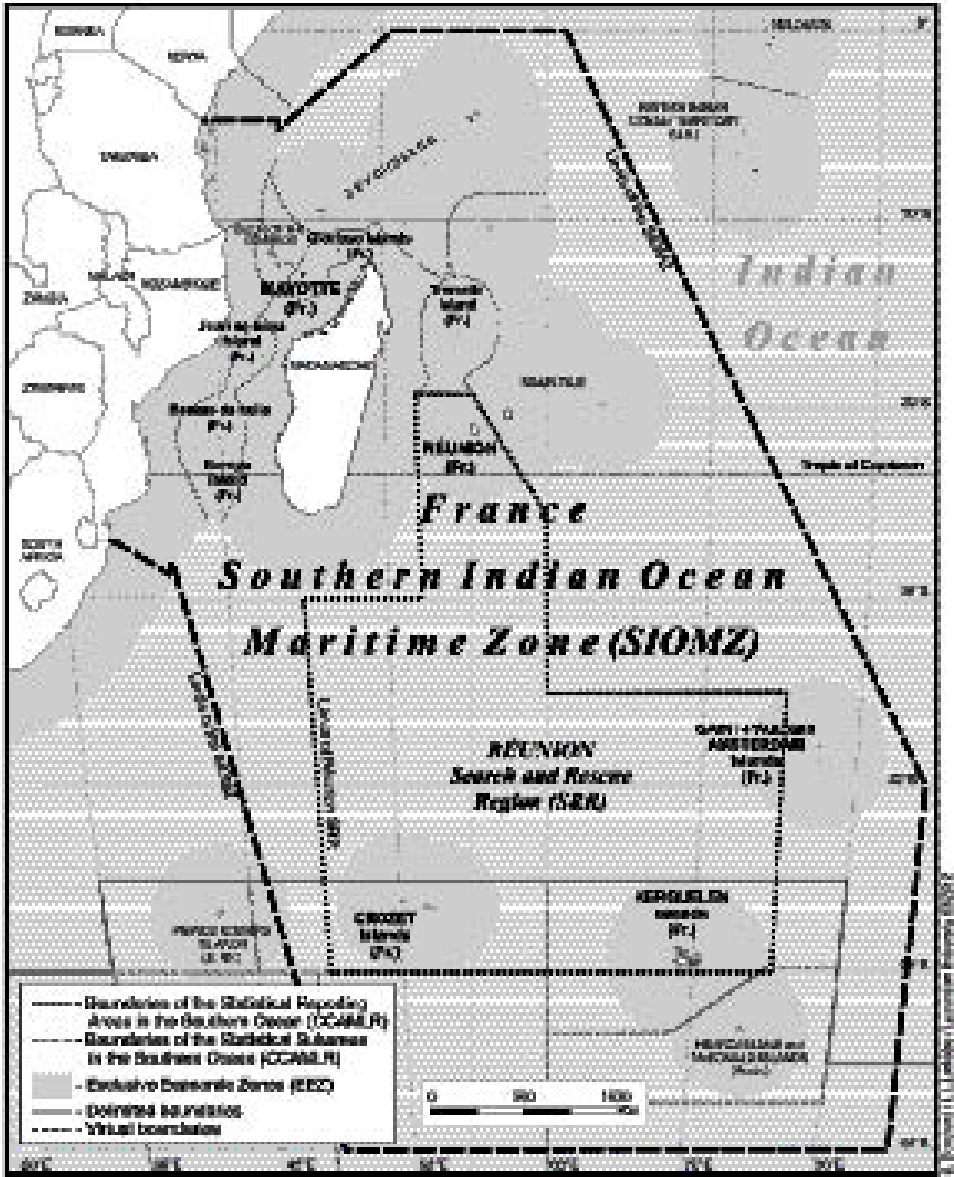


Figure 1: The French territories in the southwest quadrant of the Indian Ocean

## The Presence of the *Marine nationale* in the Southwest Quadrant of the Indian Ocean

France and its navy have a long and rich history in the Indian Ocean in general and in the southwest Indian Ocean in particular. It really developed in the 17th and 18th centuries under the monopoly of the French East India Company (1664-1769) while the *Marine royale* (1624-1789) mainly operated in the European waters and the Atlantic Ocean. Following the dissolution of the French East India Company, the French southwest Indian Ocean colonies (Isle de France, Isle de Bourbon, Seychelles) and the French Indian trading ports, including Chandernagor, Pondichéry, and Mahé, were placed under the direct administration of the State Secretariat of the Navy. What became the *Marine nationale* after the French Revolution (1789-99) operated in the Indian Ocean and eventually developed a major navy yard in Diego-Suarez, located at the northern tip of Madagascar (now known as Antsiranana). During the 1970s, the French maritime forces in the Indian Ocean were reinforced and expanded, culminating in the three year period of 1976-78 with a permanent deployment of more than 4500 onboard navy crew on some 20 ships. At the time this represented a larger potential maritime force in the Indian Ocean than those of either the United States or Soviet Union.<sup>6</sup>

In 1973, in the wake of the 1972 socialist revolution in Madagascar, the French withdrawal from Diego-Suarez led to the creation of the 'Naval Unit of La Réunion', followed by the opening in 1975 of the OMEGA radio navigation station (located at Rivière des Pluies, Sainte-Marie) and to the integration in 1977 of the Dzaoudzi Unit under the 'Navy Detachment of Mayotte'. On 1 September 1998, the 'Naval Unit of La Réunion' was dissolved and replaced by the 'Naval Base of Port des Galets' to which was added in 2004 the 'Naval Base Element of Mayotte', the latter then replacing the 'Navy Detachment of Mayotte'.

Today, and since the creation of the Naval Unit of La Réunion, French maritime forces operating in the Southern Indian Ocean Maritime Zone do so under the joint command of COMSUP FAZSOI, the Commanding General for the French army forces in the Southern Indian Ocean Zone. In terms of navy matters, COMSUP has the operational control of all ships and aeronautical crafts present in its area of responsibility; and has a seconded naval officer, the Commander of the Southern Indian Ocean Maritime Zone who serves as its naval advisor. The Commander of the Southern Indian Ocean Maritime Zone is also in charge of the Naval Base of Port des Galets, serves as the assistant to the prefect of Réunion in regard to state matters at sea (the prefect being the French government's representative on the island, and the French government delegated official for state action at sea in the South of the Indian Ocean), and is the French delegated national coordinator for the World-Wide Navigational Warning Service in NAVAREA VII (under South African responsibility) and VIII (under Indian responsibility).

The French maritime forces in the Southern Indian Ocean Maritime Zone contribute to:

- the defence of national sovereignty, protection of national interests and contribution to security in the zone
- affirming France's presence in the region, though participating in regional dialogue and conducting operational military co-operation actions
- participating in other non-military state actions (such as search and rescue at sea and fisheries monitoring)
- if the necessity arises, conducting or participating in military operations
- if the necessity arises, conducting or participating in emergency rescue operations or humanitarian relief operations
- collecting strategic and intelligence information.

They are especially responsible for:

- the defence of national sovereignty in the territorial sea surrounding the French island territories of the zone
- the surveillance and the protection of all commercial navigation and French interests in France's exclusive economic zone
- the support of state actions at sea.

The FAZSOI naval component comprises the Naval Base of Port des Galets in Réunion Island and its annex Naval Base Element of Mayotte. The Naval Base is home to two surveillance frigates each with one Panther helicopter (FS *Floréal* and FS *Nivôse*), one public service patrol boat (*Le Malin*), one patrol vessel (*Albatros*), one logistics transport ship (*La Grandière*), and one Gendarmerie Maritime patrol boat (*Verdon*). In support of the Réunion-based fleet in general and to the frigates in particular, the helicopters have proven very useful over the years as they can perform many different tasks (surveillance, commando, and search and rescue), can provide fast action and have an operational range of up to 200nm. The Mayotte station is home to one small patrol craft (*Vétiver*), one tugboat (*Morse*), one landing barge (CTM 18), one service speedboat, one anti-pollution barge, as well as the Gendarmerie Maritime coastal patrol boat (*Odet*) and two small patrol craft (*Kondzo* and *M'Djabbar*). In addition to these nautical resources, some *Marine nationale* aeronautical resources are sporadically assigned to the FAZSOI maritime forces (Falcon 50 maritime surveillance aircrafts) which can also be supplemented when necessary by the FAZSOI aerial forces based in Réunion (essentially C160 Transall planes). However, the absence of permanent air-sea surveillance resources based in the area remains a problem and some solutions are now explored, such as the contracting of service-provision with an air operator as well as the contracting of satellite surveillance to the Indian Ocean Satellite-Assisted Environment Surveillance Program.<sup>7</sup>

The Naval Base of Port des Galets also hosts a unit of the Support Service to the Fleet (SSF) and the Maritime Rescue Coordination Center of La Réunion (CROSS Réunion). Attached to the SSF of Brest (France), the local SSF unit has the responsibility of maintaining ships availability between their major overhauls which are done outside of Réunion as the island does not possess the necessary shipbuilding installation. Since 2005, the *Marine nationale* vessels stationed in Réunion are refitted at the Chantier Naval de l'Océan Indien in Mauritius. For example, from March to August 2011, *La Grandière* spent five months there for reparation, maintenance and modernisation.

Also under the direction of the Commander of the Southern Indian Ocean Maritime Zone, CROSS Réunion is a specialised service of the Administration of Maritime Affairs. Its responsibilities include search and rescue at sea, monitoring of fishing activities, monitoring of sea traffic, broadcasting of maritime safety information, monitoring of pollution, as well as maritime assistance services and maritime safety (alert management and information broadcast of maritime security). The CROSS Réunion's area of responsibility in regard to search and rescue at sea (Search and Rescue Area) was fixed in 1988 by the International Maritime Organization and covers 5.6 million km<sup>2</sup>. This is also its area of responsibility for maritime safety and maritime assistance services. In regard to monitoring fishing activities, sea traffic and pollution, CROSS Réunion operates in different parts of the French exclusive economic zone in the southwest and southern Indian Ocean, which extends seaward to 200nm from the French islands baselines, and covers some 2.6 million km<sup>2</sup>.

The *Marine nationale*'s local contribution to 'France of the Indian Ocean' is diverse and non-trivial. First, there are a total of some 650 navy personnel present in the region, including the onboard crews as well as the on land personnel allocated to the Naval Base in Réunion and the Naval Base Element in Mayotte, plus other staff assigned to different services such as the transmission and radio navigation stations, and the FAZSOI headquarters. The bulk of these navy personnel are stationed in Réunion Island, with 37 naval staff serving at the Naval Base Element of Mayotte. This corresponds to a quite important economic opportunity for both islands as these navy personnel represent important local consumption expenses and also contribute to the tourism sector. Mayotte's economy also benefits from the frequent visits of vessels stationed in Réunion.

However, it is more on the operational level that the navy's overall contribution is to be recognised for 'France of the Indian Ocean'. In terms of maritime issues and context, two very different situations are found in the French Southern Indian Ocean Maritime Zone that essentially divides this area in two around latitude 30° South.

## Maritime Issues and Marine nationale in the Southwest Indian Ocean

The northern half of the Southern Indian Ocean Maritime Zone corresponds to what we regard as the southwest Indian Ocean and includes the Mozambique Channel as well as the entire economic exclusive zones of Madagascar, Mozambique, Comoros, Tanzania, Seychelles, Mauritius, Réunion, Mayotte, and the Scattered Islands.<sup>8</sup> This part of the Indian Ocean has a quite vibrant maritime life being at the crossroad of important maritime routes (linking Asia to Southern Africa and the Atlantic Ocean), a global hot spot for marine biodiversity, a relatively good and intensively harvested fishing area (especially tuna species), an area of significant migration and human trafficking (especially between Comoros and Mayotte), as well as a enjoyable tropical area for yachting, sailing and water-based recreation. However, it is also characterised by the general low level of development of much of its coastal communities (especially on the African continent and Malagasy coasts) and, with the noticeable and important exception of France, by the low regional states' capacities in terms of maritime affairs and state action at sea.

In regard to maritime threats and security issues, the region has enjoyed a relatively calm and peaceful situation in the 1990s and early 2000s. In this period, maritime transportation and yachters could operate safely, which was of particular importance to oil tankers and other commercial vessels travelling between the Indian and Atlantic oceans through the Cape Route. The main issue then was that of illegal fishing in the poorly surveyed local exclusive economic zones. However, things began to change in the last decade with growing concerns about port security issues, onshore terrorism group activities, yachting insecurities, illegal trafficking and illegal migration. Though in recent years, the number one threat has become piracy that rapidly migrated eastward and southward from the waters off the Somalia coast to deep into the high seas as well as to the Kenyan, Tanzanian and Seychelles waters.

This threat now even extends further south into the Mozambique Channel as shown by the first Somali pirate attacks recorded in December 2010 in Mozambican waters. On 24 and 25 December, between Vilankulo and Beira, pirates carried out separate failed attacks on the Liberian oil tanker *Ns Africa* and on the Panamanian bulk carrier *Majestic*.<sup>9</sup> However, just a few days later and even further south, Somali pirates successfully hijacked the Mozambican fishing vessel *Vega 5* on 28 December, which later served as a pirate mothership until it was recaptured in the Arabian Sea by the Indian Navy in March 2011.<sup>10</sup> Even with no such events recorded in 2011 in the Mozambique Channel, the trend for southward attacks was confirmed in 2011 with some attempted attacks recorded in September and October in the vicinity of the Comoros, another attempted attack on a container vessel around 60nm east of Mayotte Island on 21 September, as well as one suspicious incident reported by a bulk carrier around 60nm east of Mauritius on 3 March.<sup>11</sup>

It is in this general context that the *Marine nationale* operates in the southwest Indian Ocean. Its contribution to fighting both piracy and illegal fishing in the region is significant. For example, *Marine nationale* vessels undertook 34 of the 44 French fisheries monitoring patrol operations over the 3 year period of 2008-10, for a total of 745 days at sea (see Table 2). In October 2009, *Lingsar 08*, a vessel operating under the Indonesian flag, was found illegally fishing in Réunion's exclusive economic zone, and was later intercepted, inspected and re-routed to Réunion by *Floréal*; the first event of this kind since 2004. However, within the Indian Ocean Commission joint patrols of the Regional Plan for Fisheries Surveillance, four apprehensions and re-routings were conducted in 2010 in the exclusive economic zones of Malagasy (3) and Mauritius (1); two of those by the French fisheries patrol vessel *Osiris* operated by the Administration of Maritime Affairs. Finally, in April 2011, *La Rieuse* caught the Sri Lankan dhow *Sudharma* illegally fishing in the exclusive economic zone of the Glorioso Islands and re-routed it to Mayotte where it was transferred to local authorities for judiciary procedures.

	2008	2009	2010	Total
<b><i>Marine nationale</i> patrols</b>				
Number of days	209	313	223	<b>745</b>
Number of missions	8	15	11	<b>34</b>
<b>Administration of Maritime Affairs patrols (<i>Osiris</i>)</b>				
Number of days	30	28	25	<b>83</b>
Number of missions	2	1	1	<b>4</b>
<b>French patrols within PRSP COI cooperation (<i>Osiris</i>)</b>				
Number of days	60	75	68	<b>203</b>
Number of missions	2	2	2	<b>6</b>

*Table 2: French fisheries monitoring patrols covering Mayotte, Scattered Islands, Réunion, Comoros, Madagascar, Mauritius and Seychelles, 2008-10*

In terms of fighting piracy in the western Indian Ocean, the overall contribution of the *Marine nationale* is significant with a permanent contribution to the European Union Naval Force Somalia (EU NAVFOR) Operation ATALANTA, as well as to a number of regional cooperation activities. EU NAVFOR operates in conjunction with other coalition naval forces, including Combined Task Force 151 under the command of Combined Maritime Forces; NATO Maritime Group (Operation OCEAN SHIELD); and independently operating Russian, Indian, Japanese and Chinese vessels. COMSUP FAZSOI and its maritime forces based at the Naval Base of Port des Galets are deeply involved in this task, with *Floréal* and *Nivôse* having participated in Operation ATALANTA several times since 2008. However, countering piracy has also become a regular task for the FAZSOI maritime forces while

operating independently during their regular multi-tasked operations conducted in the Southern Indian Ocean Maritime Zone. *Floréal* and *Nivôse* have proven very effective with their onboard helicopters that can operate up to 200nm from the ship, but usually patrol in the range of 100nm.

Examples of FAZSOI's maritime forces strong commitment to the fight against piracy in 2011 include:

- a one month multi-task patrol for *La Boudeuse* around Madagascar and in the Mozambique Channel (January); with port visits in Durban, Beira and Mayotte, and the participation of a Mozambican navy officer for the second half of the journey
- one and a half months participation in Operation ATALANTA (March-April) by *Nivôse*
- a one month multi-task patrol for *La Boudeuse* around Madagascar by the north and to the East African coast (April); with port visits in Mayotte, Dar-Es-Salaam and Mombasa
- the transfer at the naval base of Port des Galets of the patrol boat *La Boudeuse* to the Kenyan Navy under its new name of *Harambee* (7 June 2011)
- patrolling and participation to the exercise OPERATION OXIDE (a biannual Franco-South African exercise) conducted in the Mozambique Channel by *Nivôse* (October); which included an operational exercise with the South African frigate SAS *Mendi* and officers of the Mozambican Navy
- three months participation of *Floréal* in Operation ATALANTA (November-January).

Another important contribution of the *Marine nationale* to basic maritime affairs in the southwest Indian Ocean is its participation in search and rescue activities coordinated by CROSS Réunion. Of the 124 maritime and 47 aerial operations conducted in 2010, the *Marine nationale* was involved in two maritime and seven aerial operations. However, the *Marine nationale* may be called upon for larger and more distant operations, such as the crash on 30 June 2009 of the Yemenia Airways Flight 626, just a few nautical miles north of Grande Comore Island. *Nivôse*, *Floréal* and *La Rieuse* were mobilised, along with assets from other countries, with the two frigates each taking a role as on-scene commander.<sup>13</sup>

In addition to sovereignty protection, fisheries control, maritime security (including counter-piracy) and search and rescue, other missions typically allocated to the *Marine nationale* include anti-pollution duties, maritime intelligence gathering, military diplomacy, regional cooperation exercises and training, countering illegal immigration, humanitarian relief, as well as other public service missions such as



medical emergencies, special transportation and supply to the Scattered Islands. Altogether, this makes the *Marine nationale* contribution to regional maritime affairs, to the French state action at sea, and to the local communities of great significance. This is certain to continue for a long time as the regional maritime environment is becoming less secure while becoming more densely occupied, and the *Marine nationale* will continue to deploy significant resources in an area where France national interests are important.<sup>14</sup> It is also an area that has the potential to become a very real maritime security hot spot, with the growing insecurities of maritime piracy and robbery, but also in the wake of the offshore oil and gas exploration activities that are now accelerating in the Mozambique Channel and the potential for large scale exploitation in the next few decades.<sup>15</sup>

In addition to these activities, which are performed by the maritime forces based at the Naval Base of Port des Galets, are the specific activities of the Naval Base Element of Mayotte which is greatly involved in two main local missions, namely the search and rescue operations and fighting illegal immigration.

### The Particular Case of Mayotte for Search and Rescue and Illegal Immigration

In terms of search and rescue, the French sovereign maritime waters of Mayotte (internal waters and territorial sea) fall under the responsibility of the Maritime Rescue Coordination Center of Madagascar (RCC Madagascar). However, due to the weak Malagasy capacity as well as its great distance from Réunion, Mayotte has its own maritime search and rescue centre (Organisation SECMAR), under the responsibility of the Prefect of Mayotte. If and when extra means than those usually stationed in Mayotte are needed or when an operation initiated by Organisation SECMAR extends outside the French sovereign maritime waters of Mayotte, CROSS Réunion assumes responsibility.

Organisation SECMAR is managed by the coordinating unit for state action at sea (PC AEM) and is hosted at the Naval Base Element of Mayotte. Unlike CROSS Réunion, Organisation SECMAR is only in charge of search and rescue operations while the monitoring of fishing activities, sea traffic and pollution in the French exclusive economic zone around Mayotte remains under the responsibility of CROSS Réunion. The number of SAR operations conducted by Organisation SECMAR has grown dramatically from an average of 30 over the period 2000-06, to 70 in 2007, 66 in 2008, 62 in 2009, and 84 in 2010.<sup>16</sup> In 2010, 620 people were involved in 84 operations, with 553 found or rescued, 53 able to handle their situation by themselves, 13 deaths and one reported missing; 23 of these operations concerning yachts and water-based recreation, 16 involved fishing activities, 12 involved kwassa-kwassa (small wooden-hulled fishing boats used for human trafficking between the Comorian island of Anjouan and Mayotte), 11 involved commercial activities, and 7 involved pirogues (small, wooden canoe like boats).<sup>17</sup>

In terms of geographical distribution, these operations mainly occurred in the lagoon; with 127 such events in the three year period of 2008-10, accounting for 60 per cent of the overall 212 operations conducted in those 3 years.<sup>18</sup> However, 38 other events happened in the 12nm territorial sea outside the reef barrier (18 per cent) and the beach and port area was responsible for 30 events (14 per cent), while 17 operations extended to the RCC Madagascar's area of responsibility and were transferred to the coordination of CROSS Réunion (8 per cent). The *Marine nationale* contribution to Organisation SECMAR is through the PC AEM that assumes a permanent radar, radio and telephone watch, but also assists in some organisational and operational coordination, as well as in participating in operations at sea. In the three year period 2008-10, the naval staff and resources of both the *Marine nationale* and the Gendarmerie Maritime (hosted at the Naval Base Element of Mayotte) participated in 49 operations (23 per cent of all operations) while aerial resources of *Marine nationale* were used in 2 operations in 2008 (a helicopter and a Falcon 50 aircraft).

However, the major maritime security issue in Mayotte is illegal immigration from the Comoros, essentially using kwassa-kwassa and departing from Anjouan. In a 2008 report to the Senate, French senator Henri Torre confirmed the extreme seriousness of the situation which has many social and political repercussions for the island and is very costly for the state (prevention, surveillance, interception, detention, public services, unreported employment). Citing the 2007 population census and other sources, Torre estimated that just a little less than one third of the population living on the island is made up of illegal migrants (90 per cent from Comoros, the remainder mainly from Madagascar and Tanzania), which represents approximately 50,000-55,000 people, and that the annual influx of migrants can be estimated to be around 16,000 people.<sup>19</sup> To cope with this situation, the French government has in the last decade significantly strengthened its control activities both at sea and on land. As a result, the annual expulsions from the territory increased from around 4000 in 2001 and 2002, to some 16,000 in 2007, and even reached 26,400 in 2010.<sup>20</sup> As many of the illegal migrants are apprehended at sea, this represents a very intense policing activity in the French sovereign waters of Mayotte. For example, between 1-21 January 2011, 40 kwassa-kwassa were intercepted with some 2000 people onboard.<sup>21</sup>

The *Marine nationale* contribution to fighting illegal immigration in Mayotte ranges from surveillance patrols and search and rescue operations in distant waters around Mayotte (with vessels based in Réunion), to participation in monitoring, interception and search and rescue operations in the sovereign waters (essentially with local resources) along with other organisations such as the French Border Police, the Gendarmerie Maritime, and the National Society for Maritime Rescue. Unfortunately, the three to four hours of travel from Anjouan to Mayotte (40nm) is a difficult and perilous journey for an overloaded kwassa-kwassa, which are not meant for this kind of activity. As a consequence, navigational incidents are

relatively frequent and Organisation SECMAR conducted 33 search and rescue operations for kwassa-kwassa in the three-year period of 2008-10, involving 569 people where 469 were rescued, 8 able to handle their situation by themselves, but with 39 deaths and 53 reported missing.<sup>22</sup> Nevertheless, the real number of deaths could be much higher, even if certainly much less than the estimated death of 4000 for the 4 year period of 1997-2001.<sup>23</sup> Considering that Mayotte is a pocket of relative prosperity in an area of very low development, the problem of illegal immigration is very likely to remain as a major issue for quite some time.

Further south, around the sub-Antarctic islands and in the southern Indian Ocean, the context is quite different as these remote islands are unpopulated and the area is only sparsely occupied by people at scientific stations and working on specific research missions. In addition and even though this area is not used very much for commercial navigation and yachting, it does support fishing activities and, therefore, the area must be patrolled and these uses must be monitored.

## Maritime Issues and *Marine nationale* in the Southern Indian Ocean

According to its recently revised limits, the southern half of the Southern Indian Ocean Maritime Zone now officially includes the economic exclusive zones of the Crozet Islands, Kerguelen Islands, Saint-Paul and Amsterdam Islands, as well as Heard Island and McDonald Islands (Australia), and a large area of high seas extending to the 60° latitude South; an area that could soon expand to the west to include the waters surrounding Prince Edward Islands (South Africa).<sup>24</sup> Unlike the northern half of the Southern Indian Ocean Maritime Zone, the southern half is uninhabited, characterised by rough sea conditions (the 'roaring forties' and 'furious fifties') as well as by sub-Antarctic weather conditions in its lower latitudes, and is much more isolated with distances of some 1500nm from Crozet Islands to Réunion, 1900nm from Kerguelen Islands to Réunion, 1100nm from Prince Edward Islands to Cape Town (South Africa), and 2200nm from Heard Island and McDonald Islands to Perth (Australia).

The main activity of CROSS Réunion and *Marine nationale* in the southern Indian Ocean focuses on monitoring the fishing activities. This area has been under great pressure from fishing 'pirates' illegally operating in the region, especially from the mid-1990s to the early 2000s, and mainly harvesting the Patagonian toothfish.

However, the fishing 'pirates' have progressed in the area moving eastward from Prince Edward Island and Crozet Island to Kerguelen Island and Heard and McDonald islands,<sup>25</sup> and the unreported catches in the CCAMLR Area 58 (our region of interest) amounted to three times the reported catches for the three fishing seasons of 1996-97 to 1998-99, for a total of 86,476 tonnes of unreported catches compared to 28,861 tonnes of reported catches. This led to a drastic fall in the fish stocks and to a growing concern over illegal, unregulated and unreported (IUU) fishing in the CCAMLR Convention Area in general, and in each of the Indian Ocean Sub-Antarctic Islands exclusive economic zones in particular.

The high incidence of IUU fishing has not only had a detrimental effect on toothfish stocks, particularly in the Indian Ocean, it has [also] impacted heavily on seabird populations to the extent that the future sustainability of both groups has been called into question.<sup>26</sup>

However, the fight against IUU fishing in this particular region has proven very successful since the end of the 1990s due to several national and international actions as well as the allocation of important specific maritime resources and satellite technologies. On the international level, the breaking point was the introduction of the Catch Documentation Scheme (CDS) for toothfish species by CCAMLR in 2000 to monitor landings of, as well as global trade in, toothfish.

The CDS is one of a suite of CCAMLR measures aimed at eliminating IUU fishing in the Convention Area. Such measures include a strict vessel licensing requirements, at-sea and port vessel inspections and the requirement for the continuous monitoring of vessels position in the Convention Area using automated satellite-linked monitoring systems.<sup>27</sup>

In addition, and in collaboration with Australia, surveillance vessels are now deployed in the region on a quasi-permanent basis, a satellite surveillance system has been operational since 2004, and intelligence gathering on fishing issues and IUU fishing is shared with other regional partners (South Africa and New Zealand).

In terms of patrolling the area and fisheries monitoring, France has reacted promptly to the fast growing IUU fishing in its southern Indian Ocean exclusive economic zone. For instance, in 1997 there were 6 reported infractions in these waters and 10 more in 1998. Overall, a total of 20 inspections and fishing boat re-routings to Réunion took place during the four year period of 1997-2000. The last event of this kind occurred in June 2004 when the longliner *Apache*, operating under the Honduran flag, was caught fishing illegally in the Kerguelen exclusive economic zone and, following the authorisation of the flag state, was chased and finally apprehended in the high seas by the *Marine nationale* patrol vessel *Albatros*. The longliner was seized by the French state and later acquired by the *Marine nationale*. It was then transformed into a public service patrol boat, renamed *Le Malin*, and was posted at the Naval Base of Port des Galets in October 2011.<sup>28</sup> A similar fate happened to the longliner *Lince*, operating under the Seychelles flag, that was inspected in January 2003 by *Nivôse* in the Kerguelen exclusive economic zone. After being seized by the French Government, the vessel finally became the patrol vessel *Osiris*, and now serves as an additional French fishing monitoring vessel operating in both the southern and southwest Indian Ocean (state owned and operated by the Administration of Maritime Affairs).

Facing a common threat at the end of the 1990s and early 2000s, France and Australia began to cooperate on IUU fishing in the southern Indian Ocean, leading to the *Agreement with the Government of the French Republic on Cooperation in the Maritime Areas adjacent to the French Southern and Antarctic Territories (TAAF), Heard Island and the McDonald Islands*, signed in Canberra on 24 November 2003 and effective on 1 February 2005.<sup>29</sup> The treaty established a formal framework for cooperative surveillance activity and research activity in their respective territorial seas and exclusive economic zones in the southern Indian Ocean.<sup>30</sup> A new Agreement on Cooperative Enforcement of Fisheries Laws was signed in Paris on 8 January 2007 and entered into force on 7 January 2011, allowing authorised French and Australian vessels, with counterpart fisheries and customs officers onboard to patrol and enforce fishing laws and regulations in their counterpart's maritime zones.<sup>31</sup> Enforcement activities include boarding, inspection, hot pursuit, apprehension, and the seizure and investigation of illegal fishing vessels.

	2008	2009	2010	Total
<b><i>Marine nationale patrols (Albatros)</i></b>				
Number of days	194	61	103	<b>358</b>
Number of missions	6	2	3	<b>11</b>
<b><i>Administration of Maritime Affairs patrols (Osiris)</i></b>				
Number of days	150	129	141	<b>420</b>
Number of missions	3	3	3	<b>9</b>
<b><i>Australian patrols (Ocean Viking/Ocean Protector)</i></b>				
Number of days	160	116	119	<b>395</b>
Number of missions	4	3	3	<b>10</b>

*Table 3: Surveillance patrols covering Kerguelen, Crozet, Saint-Paul and Amsterdam, Heard and McDonald islands, 2008-10<sup>32</sup>*

The cooperative patrolling in the French and Australian southern Indian Ocean exclusive economic zones has become a reality with the quasi-permanent presence of dedicated vessels in the area: French frigates *Floréal* and *Nivôse* as well as patrol vessels *Albatros* and *Osiris*, and Australian Customs Vessel *Ocean Protector* (replaced ACV *Ocean Viking* in 2010). Altogether, these vessels conducted 30 patrol operations in the 3 year period of 2008-10, including 11 by the *Marine national* vessels for a total of 358 days at sea (see Table 3). While at sea in the area, these vessels can also be called upon to participate in search and rescue operations. Such activities are again often conducted in collaboration between France and Australia (CROSS Réunion and RCC Australia), the latter being particularly important for its aerial contributions. An example of this collaboration is the June 2010 rescue of a 16-year-old US solo sailor, Abby Sunderland, after her 12m yacht *Wild Eyes* was

demasted in heavy seas. Australia provided air support assistance and established a first visual contact with the sailor (some 1500nm southeast from Réunion and 2000nm west-south-west from Perth) while France provided maritime support assistance and eventually took her back to Réunion Island. The patrol vessels can also be requested to provide medical assistance and evacuation for personnel from the science bases on Southern Ocean islands and Antarctica and by fishing vessels in the area. Over the period 2006-10, there were 10 urgent medical repatriations to Réunion Island, 5 with the participation of *Ocean Viking*. Another operation was conducted in January 2011 by *Nivôse*, performing a medical repatriation from the Kerguelen station of Port-aux-Français.

The remote sensing technology provided by a satellite surveillance system has proven efficient and cost-effective to monitor this maritime area. Operated by navy personnel at CROSS Réunion, the system uses data from RADARSAT II and ENVISAT to monitor the French and Australian southern Indian Ocean exclusive economic zones as well as the surrounding high seas. Over the period 2008-10, a total of 54,509 echoes were recorded for an annual average of 18,170, and which includes non ship phenomenon, such as ice, icebergs, earth and algae. In 2010, 91 per cent of the echoes related to authorised vessels in and outside the exclusive economic zones (fishing, commercial, scientific and patrol vessels), as well as 3 per cent of non identified vessel echoes in the exclusive economic zones and 6 per cent vessel echoes outside the exclusive economic zones.<sup>33</sup>

Thus, in the southern Indian Ocean, *Marine nationale* vessels respond to three main missions: fisheries monitoring and fishing laws enforcement, in addition to the *Osiris* and the *Ocean Protector* patrols; representing and affirming French sovereignty over its three sub-Antarctic island territories; and when the necessity arises, participating in other public missions such as search and rescue, medical repatriation, and special material and cargo transportation to the scientific bases. All of these are of prime significance and makes the *Marine nationale* one of the main actors and stakeholders in the region, and especially in terms of maritime affairs. *Marine nationale* is also at the heart of the cooperation between France and Australia in this part of the world, an example of a very successful multifaceted collaboration between two states and their different services, and a model to be followed for cooperation between France and South Africa for Prince Edward Islands.

On this last point, it is noteworthy that negotiation about a formalised collaboration between France and South Africa is one of the required actions identified in the *Southern Indian Ocean Book*.<sup>34</sup> France is looking for a general agreement on collaborative maritime surveillance that will cover not only the southern waters but also those around the Scattered Islands.

## Conclusion

France's *Marine nationale* has a permanent and important presence in the southwest quadrant of the southwest and southern Indian Ocean that ensues from its territorial possessions in the region. Altogether, these 10 small island entities form what is now recognised as 'France of the Indian Ocean', characterised by a small terrestrial base of 10,560 km<sup>2</sup> and a total population of only one million people, but also by French claimed maritime zones extending to some 2.7 million km<sup>2</sup> (territorial sea and exclusive economic zone) and even more in regard to the continental shelf. Thus, the ratio of area is at least 255:1 between the maritime and the terrestrial zones, which highlights the importance of the maritime dimension of 'France of the Indian Ocean'. Consequently, maritime affairs are of prime significance for France in this region of the world where its naval forces are asked to fulfil a broad range of missions.

In this context, the *Marine nationale* contributes to the defence of the general national interests of France in the region as well as contributing locally to the island territories' wellbeing and prosperity. These two contributions intermingle as the security and economic development of the islands are of French national interest and France's national interests in the region either directly involve or indirectly impact the islands. At the same time, France and 'France of the Indian Ocean' pursue together a strategy of strong commitment to, and active involvement in, regional cooperation in which maritime issues are central and the *Marine nationale* is an important partner. This situation will continue for a long time as the *Defence White Book* included the western Indian Ocean in its major strategic axis running from the Atlantic Ocean to the Indian Ocean, and as recommended in France's *Southern Indian Ocean Blue Book*, a regional integrated maritime policy for the French Indian Ocean islands and maritime territories (including, beyond the territorial sea, the economic exclusive zone and the continental shelf, as well as regional cooperation with neighbouring states in the marine domain).<sup>35</sup>

Overall, we find that *Marine nationale* is a very significant actor in both the southwest and the southern Indian Ocean, as well as it contributes greatly to French and 'France of the Indian Ocean' interests in the region. In particular, in a fairly peaceful and cooperative regional environment, it does so essentially in its role of safeguarding good order at sea, for the benefit of France and 'France of the Indian Ocean' as well as for the benefit of regional neighbours that also need a secure maritime environment but lack resources in this matter. As the leader in policing the sea in this area of the Indian Ocean, the *Marine nationale* is particularly involved in the fight against maritime piracy, a phenomena that emerged off the coasts of Somalia and that now extends eastward to the Seychelles waters and southward around the Comoros Archipelago, the north of Madagascar, and further south inside the Mozambique Channel. *Marine nationale* is also an important actor in the monitoring and fight against IUU fishing in collaboration with Australia and South Africa in the southern

Indian Ocean, and with partners in the southwest Indian Ocean. *Marine nationale* is also greatly involved in the fight against illegal migration and human trafficking which particularly concerns Mayotte, as well being at the heart of search and rescue in both Réunion (CROSS Réunion) and Mayotte (Organisation SECMAR).

Thus, the permanent presence and intensive activity of the *Marine nationale* is a main feature of the southwest and southern Indian Ocean. In the last decade, the outcome of its great involvement in safeguarding the good order at sea has been very positive, but the region is still facing serious security challenges at sea, especially maritime piracy, illegal migration, and IUU fishing. Considering the fact that most of the littoral communities have relatively low socioeconomic development and the resulting insecurities that are quite high ashore, as well as the fact that large offshore oil and gas projects may very well be developed in the southwest Indian Ocean in the coming decades, we can therefore predict that maritime security issues will continue for a long time to be of great concern in this part of the world. Consequently, and taking into account France's sovereign interests in the region, *Marine nationale* will remain a significant and pertinent actor of the regional maritime affairs for the foreseeable future.

## Notes

- 1 An English version of this document can be found online under the title of *The Southern Indian Ocean Blue Book* <[www.reunion.pref.gouv.fr/livrebleu/IMG/pdf/The\\_southern\\_indian\\_Ocean\\_Blue\\_book\\_cle0aa1dc.pdf](http://www.reunion.pref.gouv.fr/livrebleu/IMG/pdf/The_southern_indian_Ocean_Blue_book_cle0aa1dc.pdf)>. This document sets out France's vision for the next 20 years in this exceptional maritime zone. It describes and recommends a number of strategies for the relevant authorities to carry out in specific fields. These authorities will report to the Southern Indian Ocean Basin Overseas Maritime Council that will be chaired by the French government official in charge of maritime affairs in this part of the world, being the Prefect of Reunion Island. Regarding the extent of the Southern Indian Ocean Maritime Zone, the map found on page 9 in the English version of the document is inaccurate and readers should consult the French for the revised limits of the zone.
- 2 On French presence, interests and actions in the Indian Ocean, see C Bouchard and W Crumplin, "Two faces of France: "France of the Indian Ocean"/"France in the Indian Ocean", *Journal of the Indian Ocean Region*, vol.7, no.2 2011, pp. 161-182.
- 3 The Mascarene Islands mainly comprise the three islands of Réunion, Mauritius and Rodrigues. The Comoros Islands mainly comprise the three larger islands of the Union of the Comoros, namely Ngazidja, Ndzwani, and Mwali, as well as the French-administered island of Mayotte (or Maore).
- 4 Officially the Scattered Islands in the Indian Ocean; established in 2007 by a decree from the Prefect High Commissioner of the FSAL, Arrêté 2007-18 bis du 23 février 2007 portant création du district des îles Éparses de l'océan Indien.



- 5 However, France's sovereignty over some of these islands is officially challenged by neighbouring states: Comoros claims Mayotte, Madagascar claims Bassas da India, Europa Island, Glorioso Islands and Juan de Nova Island, and Mauritius claims Tromelin Island. Nevertheless, in the present context, France does implement its national sovereignty on these islands, has delimited its maritime zones from these islands accordingly to the provisions of the *United Nations Convention on the Law of the Sea 1982*, and fully exercises its rights and duties as a littoral state in these maritime zones. Consequently, we assume here that these islands are French and administered as such at the present time (and therefore we set aside the debates over the other states' territorial claims).
- 6 J-M Balencié, 'Le renforcement de la présence navale française en océan Indien au début des années 1970', *Stratégie*, no. 54, 1992, (La guerre limitée); <[www.stratisc.org/strat\\_054\\_Balencie.html](http://www.stratisc.org/strat_054_Balencie.html)> (November 2011).
- 7 Entering into operation in 2012, this new system located in Saint-Pierre (Réunion) will look after an area of some 2500 km radius from Réunion Island.
- 8 For an overall presentation of the maritime affairs in the Mozambique Channel, see C Bouchard, 'Maritime Affairs in the Mozambique Channel', in D Rumley, S Chaturvedi, M Taib (eds), *The Security of Sea Lanes of Communication in the Indian Ocean Region*, Maritime Institute of Malaysia and Indian Ocean Research Group, Kuala Lumpur, 2007, pp. 73-92.
- 9 'Mozambique: Piracy in Country Channel Confirmed', *Neptune Maritime Security*, <<http://neptunemaritimesecurity.posterous.com/?tag=majestic>> (December 2011).
- 10 A van Zyl, 'Anti-Piracy - Mozambique Channel', *International Maritime Security*, 2011, <[www.internationalmaritimesecurity.co/uncategorized/anti-piracy-mozambique-channel/](http://www.internationalmaritimesecurity.co/uncategorized/anti-piracy-mozambique-channel/)> (December 2011); L Luke, 'Mozambique Channel Anti-Piracy Efforts Continue to Grow', *FDI Strategic Weekly Analysis*, vol. 2, no. 44, Future Direction International, Perth, 2011, p. 8.
- 11 IMB Piracy Reporting Centre, 'Live Piracy Map' and 'Live Piracy Report', Kuala Lumpur, <[www.icc-ccs.org/piracy-reporting-centre](http://www.icc-ccs.org/piracy-reporting-centre)> (December 2011).
- 12 Ministère de l'écologie, de l'énergie, du développement durable et de l'aménagement du territoire, *CROSS Réunion, Bilan d'activité 2008*, Direction régionale des Affaires Maritimes de la Réunion et des îles Éparses, Saint-Denis (Réunion), 2008; Ministère de l'écologie, de l'énergie, du développement durable et de la mer, *CROSS Réunion 2009*. Direction régionale des Affaires Maritimes de la Réunion et des îles Éparses, Saint-Denis (Réunion), 2009; and Ministère de l'écologie, du développement durable, des transports et de du logement, *CROSS Réunion 2010*, Direction de la mer Sud de l'océan Indien, Saint-Denis (Réunion), 2010.
- 13 Ministère de l'écologie, de l'énergie, du développement durable et de la mer, *CROSS Réunion 2009*. Direction régionale des Affaires Maritimes de la Réunion et des îles Éparses, Saint-Denis (Réunion), 2009, p. 25.
- 14 C Bouchard and W Crumplin, 'Two faces of France: "France of the Indian Ocean"/"France in the Indian Ocean"', 2011, pp. 161-182.
- 15 Oil exploration has also resumed in the very recent years in Seychelles, which labels itself as a new frontier for oil explorers. According to the Finance Minister Danny Faure, two companies have confirmed that they will start drilling in the Seychelles waters by the end of 2012, <[www.asiaone.com/Business/News/Story/A1Story20101208-251435.html](http://www.asiaone.com/Business/News/Story/A1Story20101208-251435.html)>. New exploration activities are also to begin in deepwater off the Kenyan coast as the independent oil and natural gas exploration company Anadarko's drilling program should start either later in 2012 or early in 2013, <[www.businessday.co.za/articles/Content.aspx?id=168451](http://www.businessday.co.za/articles/Content.aspx?id=168451)>. Following Madagascar and the other East African countries with coastlines along the Indian Ocean, Comoros just announced in March 2012 that it has awarded its first ever oil exploration and production licence to a privately-owned Kenya-based exploration company, Bahari Resources Ltd, <[www.reuters.com/article/2012/03/28/comoros-exploration-idUSL6E8ES1AB20120328](http://www.reuters.com/article/2012/03/28/comoros-exploration-idUSL6E8ES1AB20120328)>.

- 16 Préfecture de Mayotte, Direction de la Mer Sud océan indien – Unité Territoriale, *Bilan des secours maritimes, Mayotte 2010*, Pamandzi (Mayotte), 2010, p. 4.
- 17 Préfecture de Mayotte, Direction de la Mer Sud océan indien – Unité Territoriale, *Bilan des secours maritimes, Mayotte 2010*, Pamandzi (Mayotte), 2010. (Préfecture de Mayotte, 2010).
- 18 Aggregated numbers from Préfecture de Mayotte, Service des Affaires Maritimes de Mayotte, *Bilan du secours en mer (SECMAR), Mayotte 2008*, Pamandzi (Mayotte), 2008; *Bilan du secours en mer (SECMAR), Mayotte 2009*, Pamandzi (Mayotte), 2009; and Préfecture de Mayotte, Direction de la Mer Sud océan indien – Unité Territoriale, *Bilan des secours maritimes, Mayotte 2010*, Pamandzi (Mayotte), 2010.
- 19 H Torre, *Rapport d'information fait au nom de la commission des Finances, du contrôle budgétaire et des comptes économiques de la Nation sur l'immigration clandestine à Mayotte*, Sénat, Session extraordinaire de 2007-2008, No. 461, Paris, 2008, p. 27.
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# A South African Perspective on the Indian Ocean

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*Frank van Rooyen*

This paper examines whether a representative sample of the 'global south', that is, the littoral and island states on the eastern seaboard of Africa and the western-most portion of the Indian Ocean, do, in fact, contribute to their region's national security and prosperity.

The paper will commence with a definition of what is meant by the terms 'southern' and 'south', within the context of international relations theory. The idea of 'ocean' will be looked at, while taking note of globalisation and some defence implications in order to situate the theme of the paper. The paper will examine the growing importance of the Indian Ocean to not only countries that inhabit it, but also to exogenous ones. Further, it will attempt to determine the manner in which navies can or should contribute to national security and prosperity. The contemporaneous views that Africa has of events and dynamics that are evolving in the Indian Ocean, will be laid bare and contrasted with its diminished and observational role and status; being that of a bystander watching events, but having little, if any, impact on its dynamics. Once the question of whether or not, and to which degree the navies of the eastern seaboard countries and islands off Africa contribute to national security and prosperity; the conclusions will be followed by policy recommendations, the resolution of which may lie within the countries that are represented at this conference; specifically the (maritime) defence enhancement of the Indian Ocean Rim Association for Regional Cooperation (IOR-ARC).

This paper views the Indian Ocean from a perspective of the global south. One needs to take heed of the caution that Mills notes when he states that 'the terminology of the north and south may be as misleading as it is erroneous'.<sup>1</sup> Yet, even when taking this caveat into consideration, some clear threads do distinguish north from south. The global south term refers collectively to the developing countries of the world, most of which were colonies and are in the southern hemisphere. The 'north' therefore denotes the 'developed' world, collectively represented by the Organisation for Economic Cooperation and Development, and includes Japan, the United States, Canada, most of Europe, Australia and New Zealand. However, 'the south' refers less to a geographic location than to a shared political interaction in the economic development of Asia, Africa, South America and the Caribbean. In this specific context, south-south economic cooperation thus refers to trade and investment among developing countries or countries of the 'south'.<sup>2</sup> The global south, also refers to a world that is largely south of the equator, also termed 'third', 'emerging', or 'developing'. These countries include the vast majority of the United Nations' member states, many of which have less developed or severely limited

or resources. It is an unfortunate fact that the people that comprise these states are in the vanguard in terms of the insecurities that confront the international community in contemporary history. These include having to confront poverty, disease, environmental degradation, human and civil rights abuses, ethnic and regional conflicts, massive displacements for refugees, hunger; to name but a few of their perpetual challenges.<sup>3</sup> It has also been noted that the global south continues to be underdeveloped, had been severely exploited by colonising states of the global north during the last five centuries, that they have experienced much destabilisation, and indigenous cultures have been destroyed or disrupted by exploitative Western practices, often marked by ruthlessness that were at odds with the notion of the colonising countries being 'superior' cultures.<sup>4</sup>

Modern navies ensure their countries' contribution to national security and prosperity through enabling continuous sea lines of communication (SLOC). It would incorporate most (military maritime) aspects of human security (economic, food, health, environmental, personal, community and political security elements, first properly listed in the UN's Human Development Report 1994). For the countries that rely on the Indian Ocean, navies are tasked to ensure energy security and trade flows on the one hand, and enhanced projected economic growth on the other. This may be difficult to quantify, yet if the situation does not exist, such as when SLOC collapse, the effects are immediate and may have devastating and lasting effects upon a nation.

The geo-economic seascape developmental issues referred to above, leads to the notion of 'ocean' and what it constitutes. The idea of 'ocean' certainly is an intriguing one, because the vastness and diversity of an ocean such as the Indian Ocean can be imagined and examined at various levels that represent a three-dimensional matrix. The influential naval thinker, Alfred Thayer Mahan conceptualised the sea by stating that the

first and most obvious light in which the sea presents itself is from the political and social point of view is that of a great highway; or better, perhaps, of a wide common, over which men may pass in all directions, but on which some well-worn paths show that controlling reasons have led them to choose certain lines of travel rather than others. These lines of travel are called trade routes; and the reasons which have determined them are to be sought in the history of the world.<sup>5</sup>

Thus the Indian Ocean is not only a theoretical or geographical composition, but represents human, trade and power realities in its complex pathways.<sup>6</sup>

The 'wide common' has four attributes, which has made it a focus in human development and interaction for millennia. It is a resource, a means of transportation, of information and of dominion. These attributes imbue it with the concept of 'sea power'. However, what gives it critical mass is not what happens at sea, but how

what happens can influence the outcomes of events ashore.<sup>7</sup> Hall makes the point that the developmental history of the Indian Ocean is markedly different from that of the its larger oceanic masses, the Atlantic and the Pacific, as it represents the development of humankind, a sea-based estate upon which many races and nations have exchanged trade, have interacted and have battled for millennia, at sea and ashore.<sup>8</sup> It has provided the basis for humankind's prosperity and security. Thus the sea has always been central to human development as a fount of resources, and as a means of seaborne mobility, data transfers and realisation of strategic might. These continue to ring true in the early part of the 21st century as the world witnesses and participate in the burgeoning globalised trading system.

These ancient actions of trade and interaction would nowadays be termed 'globalisation', which could be defined as the 'worldwide movement towards economic, financial, trade and communications integration'. The concepts of sea power, globalisation and their praxis clearly overlap. Globalisation goes beyond domestic, national and regional perspectives to encompass an interconnected and interdependent world with liberated transfers of capital, goods and services across national frontiers.<sup>9</sup>

Globalisation has several defence implications. As Till notes, it encourages 'a 'borderless world' in which the autarchy of the national units of which it is composed is gradually being whittled away by the development of a variety of transnational economic and technological trends', where the emphasis increasingly is on the system and not on its components.<sup>10</sup> A second implication is that it is dynamic, as it changes constantly and rapidly. The third implication is that 'Globalisation depends absolutely on the free flow of sea-based shipping. For that reason, it is profoundly maritime in nature, something therefore that is likely to be of particular interest to the world's navies'.<sup>11</sup> Paradoxically, one of the consequences of globalisation is the globalisation of security threats involving various forms of menace, from non-state terrorism to international crime groups. Further, the non-military aspects of sea use (that range from fishing, ship-construction, merchant shipping, marine tourism and many more functions) contribute to naval power and have forms of leverage in their own right. A final observation goes to the heart of this paper, and that is the fact sea power is a relative concept, in that all littoral and island nations (and also several landlocked states) have forms of sea power to a greater or lesser degree.<sup>12</sup>

The geography of the Indian Ocean indicates that it is ringed by the continents of Africa, Asia, Australia, and, until the recent proclamation of the Southern Ocean, Antarctica. A number of maritime constrictions dictate, provide Mahan's 'controlling reasons' to the Earth's other oceans, causing maritime traffic to funnel through defined and often restricted oceanic passages. Chew states succinctly that there can be little doubt that historicity points to the Indian Ocean having been the

world's first 'cosmopolitan' maritime arena. Indeed, the earliest networks of seaborne commerce and cross-border interaction were made directly possible by the compact and closed character of the Indian Ocean, with its narrow entrances and exits ...<sup>13</sup>

The Indian Ocean contains one third of the world's population and hence an enormous market for consumer goods. Its resources are abundant. It harbours two-thirds of the earth's oil reserves, a third of its natural gas, 60 and 40 per cent of the world's uranium and gold respectively; potentially most useable in terms of exploitation and extraction.<sup>14</sup> The Indian Ocean sees the transiting of the highest tonnage of goods worldwide, half of the world's crude oil shipping and a third of bulk cargo.

It is a region that is characterised by great diversity, in terms of culture, race, religion, economic development, and strategic interests. The countries vary in the size of their populations, economies, trade, and technological development and in the composition of their gross domestic product. A number of sub-regional organisations have been established in the region.

Hence, the Indian Ocean has been and increasingly continues to be a critical geostrategic space of competitive maritime security that features the presence of both Indian Ocean regional as well as extra-regional maritime forces. At present, the Indian Ocean is an area of geo-economic and geostrategic magnitude for its residents and for its permanent visitors, its importance propelled by the enormous energy and natural resources of the region, the transiting of these in order to ensure energy security as a critical component of national security of the many nations. Globalisation's many facets are often incongruous - on one hand the phenomenon promises the potential and beneficiation of enhanced regional economic development. Yet, on the other, rivalries are developing in the Indian Ocean as global power shifts, and new alliances seek regional and national security, and quests are made to ensure the balance of power in the Indian Ocean.

This then, leads to the crux of this paper, the ways in which east African states and its islands view the Indian Ocean. This paper has identified four views that these African states may have, as follows.

## Hegemonic contestation in the Indian Ocean

The first view of the Indian Ocean from the perspective of eastern African states could be termed 'contestation'. The contestation is noted through increased maritime activity especially an influx of naval forces and associated escalating bids for permanency and security of tenure. In terms of 'forward positioning' or establishment of naval military bases in a number of countries that form the littorals or island groups along the important trade routes and energy flows that criss-cross the Indian Ocean. Both Indian Ocean rim states and extra-regional states are involved in this escalating hegemonic contestation. In *The Indian Ocean in World History*, Kearney notes:

which land (or lands) has (or have) been in the lead in world wealth, power, and creativity at any particular time has been determined to a significant extent by, or been correlated with, control of or significant in the trade of the Indian Ocean and the lands of its periphery.<sup>15</sup>

This hegemonic contestation for Kearney's 'lead in world wealth, power and creativity' has a number of significant interplays through combined, regional and national maritime operations in the Indian Ocean, some of which are noted below.

Some of the leading nations in the Indian Ocean conduct operations and maintain power presences in this oceanic area. These include, but are not limited to, the following nations.

The United States maintains a high profile in the Indian Ocean, where its military presence stretches from the Arabian Gulf and the Horn of Africa, its island states and from South to Southeast Asia, with 'lily-pad' support bases in the region.<sup>16</sup> The key US interests are economic and political, underpinned by its commitment to an international order based on rights and concomitant (maritime military) responsibilities, augmented by its Africa Command which became operational in 2008. At the same time shared interests with like-minded nations are emphasised and conflated into common goals; in a manner that would make it difficult to state categorically that the United States is acting only in its own interests. The tri-service strategy *A Cooperative Strategy for 21st Century Sea Power* reflects similar values to the United States 2010 national security strategy. *The Diplomat* notes that this strategy 'reaffirms that the US Navy will remain the two-ocean it has been ... But the second ocean is no longer the Atlantic - it's the Indian Ocean and the adjacent Persian Gulf'.<sup>17</sup>

China, in order to consolidate and safeguard its energy and trade sea lanes, and well aware of the value of maritime chokepoints, has commenced a 'string of pearls' strategy, securing harbours, approaches, building military infrastructure and strategic bases in Burma, the Bay of Bengal, Bangladesh and the Maldives. A Chinese government official stated that the 'real threat to us is not posed by the pirates but by the countries that block our trade routes'.<sup>18</sup> Its commencement of aircraft carrier construction would, from the medium-term onwards, extend and enhance its operational reach tremendously, and catapult it into a leading military maritime power status.

For Russia, it would appear that the Indian Ocean's importance lies in maintaining the power balance commensurate with its perceived position as a world power, particularly in an oceanic area pivotal to medium and long-term trade and energy flows. It too, views 'opening new naval bases in foreign countries as a noble initiative that Russia needs to pursue. Naval bases ensure influence ... in strategically important parts of the globe'.<sup>19</sup> It has held military maritime exercises in the Indian Ocean, drawing on its forces based worldwide. Russia's energy security strategy is linked to its national security strategy, and makes provision for expanded export



infrastructure to allow for domestic and foreign exports, and maximise its unique geostrategic position. This would include the security of its energy-exporting sea lines of communication.<sup>20</sup> The Russian leadership believe that its influence in international affairs is in part based on its economic resurgence, and its ability to project military power in its immediate region and beyond. Its deployments, not only in the Indian Ocean, demonstrate Russia's national will to secure its global interests. In this respect, the Russian navy appears to be carving out for itself a significant role in the Indian Ocean, once frequented significantly by Soviet maritime forces.

France has extensive maritime interests in the Indian Ocean, the consequence of its colonial era linkages, and has consistently emphasised its independent role. Accordingly, the strategy is shaped by the country's perception of being an independent great power with economic and security stakes, including the protection of its island territories in the Indian Ocean. It rejects the notion that it may be portrayed as an extra-regional power in the region, based on its entrenched position in the Indian Ocean. Like most other maritime stakeholder nations in the Indian Ocean, France too has recently overhauled its defence and national security white paper. It emphasises two of the four geographical areas that have critical implications for its national security and the security of Europe: the range of crises from the Atlantic to the Indian Ocean and Sub-Saharan Africa. The former comprises a combination of various sources of instability, proliferation and the increasing concentration of energy resources, while the Sub-Saharan challenges are exacerbated by states failing, the pursuit of raw materials that draw in new (and often unwanted) actors, unchecked urbanisation and disquieting linkages between crisis areas.<sup>21</sup> The French military maritime forces are deployed in the Indian Ocean on a continuous basis, and they have regular, extensive maritime exercises during which it draws in African littoral and island states; as it promotes peace and security in the region and performs operational tasks under international law and under UN auspices. This will become more difficult to execute in the short to medium term, as France continues to experience financial challenges. A dominant arms supplier, French military equipment can be found on the military maritime order of battle.

The United Kingdom published its national security strategy, *A Strong Britain in a Time of Uncertainty*, which reappraises the country's role in the world, evolving security risks and associated implications, in tandem with *The Strategic Defence and Security Review*. The *Review* examines security risk management issues, focusing on effective and rapid reaction to threats. It also emphasises that the United Kingdom will have reduced (and shared, mainly with France) resources, yet a key objective is to,

shape a stable world by the acting to reduce the likelihood of risks that may adversely affect UK or British interests overseas, and applying our instruments of power and influence to shape the global environment.<sup>22</sup>

However, there can be little doubt that the British global footprint will be reduced, including in the Indian Ocean, as it too struggles to balance its economy. As Britain's coalition leaders state in the preface to the national security document, 'as the balance of power shifts, it will become 'harder' for Britain to project its influence abroad', or as *The Economist* wryly notes 'Say what you like about the British: we manage our decline with style'.<sup>23</sup>

For India, the international sea lanes that cross the Indian Ocean are of vital importance, so as to sustain and improve its rapidly growing economy and trade. The 'demand heartland' of China, India and Japan is heavily dependent of energy flows from the Arabian Gulf and increasingly from Africa and now too, across the south Atlantic (Brazil, Argentina) via the Indian Ocean. Any disruption in the energy flow has immediate effects on costs of energy, and has the historical facts and remaining potential to increase political and military tensions in an area of the world already riven by conflicts and wars.<sup>24</sup> India's energy demands are very high and increasing. Already the sixth-highest energy consumer in the world, India is projected to be the third-highest by 2030, based on its anticipated increased consumption. Long-term security of energy has become a primary concern for India, which 'must place itself on a virtual war footing' to achieve its anticipated growth.<sup>25</sup> India, in response to China's advances in the Indian Ocean, aims to modernise its fleet, including adding a medium-sized aircraft carrier to one bought from Russia, operating a nuclear submarine fleet, and building and buying new destroyers and frigates. India has expanded defence contacts, exchanges and has held maritime exercises with great number of strategic Indian Ocean east African littoral countries and archipelago nations such as Mauritius, Seychelles, Madagascar and the Maldives. India and Mauritius have resumed discussions over a proposal to hand over the twin islands of Agalega to India either through long lease or perpetual ceding of control. The land could be used for agriculture or other strategic purposes by India.<sup>26</sup> India therefore enacts its maritime strategy by ensuring that perceived legitimate threats are not realised. The network of cooperative partnerships, which it continues to build with select Indian Ocean rim nations and extra-regional powers, is designed to 'increase Indian influence in the region, acquire more strategic space and strategic autonomy, and create a safety cushion for itself'. In other words, 'to spread its leverage... India is mixing innovative diplomatic cocktails that blend trade agreements, direct investment, military exercises, aid funds, energy co-operation and infrastructure-building'.<sup>27</sup> An excellent illustration of this type of creative thinking lies in India's initiation of the Indian Ocean Naval Symposium (IONS), which has effectively consolidated Indian Ocean rim maritime defence and security institutional mechanisms. It is clear that India remains particularly effective at harnessing the range of available forces and resources in order to shape its strategic environment.

To many observers, Japan's involvement in the Indian Ocean appears to be low key. However, delve deeper and Japan can be found close to the centre of maritime action in the Indian Ocean region. Boasting a world-class, professional navy, Japan

has been involved in the Indian Ocean for a number of years, largely conducting 'maritime interdiction operations' in concert with the US and British navies. In the process, it has gained excellent experience at being a proficient navy, capable of maintaining high-intensity interoperability with other navies in combined operations, aligning it with its perception as a world-class maritime combat service and making it an indispensable maritime military partner.<sup>28</sup> Like the other navies in this survey, Japan has understood the benefits of an 'own' base away from home and is building a base in Djibouti for military personnel engaged in counter-piracy patrols in the Gulf of Aden region. The new base will be the first foreign Japanese military base since World War II.<sup>29</sup> Besides the maritime patrol aircraft already in Djibouti, the base will certainly facilitate logistics, maintenance, medical and other services. The new base is significant also because it underscores the extent of the measures that a pacifist nation like Japan is prepared to take in order to ensure its security of trade and energy.<sup>30</sup> These security operations contribute to ensuring the safe and secure passage of Japan's considerable maritime trade.

It needs to be noted that all these countries (plus others, not noted, such as the Republic of Korea) have a forum of sorts with the associated countries, either at bilateral, regional or at continental (African Union) level, or all three levels, fora designed to underpin cooperation, which include military maritime cooperation. This could and does lead to competition for resources, allocation of aid funding and infrastructural development projects between the various African countries, as they vie for limited and dwindling aid resources from donor nations, which in turn may well serve to undermine African cohesion and putting up a united front.

In sum, the view that east Africa has of the super and major powers of the world escalating their maritime presence and logistics bases in the Indian Ocean may be construed to be one of non-involvement. Being a relatively passive observer of these maritime dynamics serves to highlight the notion that east Africa and its underdeveloped fellow states in the Asian part of the Indian Ocean rim are not even bit players, they are - literally and ironically - on the rim or the periphery of the maritime action in the Indian Ocean. They say who pays the piper calls the tune, so if the donor states are paying for the services of African state(s), they may dictate exactly what they desire that state to perform.

### **Passivity and Inability to Perform Maritime Tasks**

This section is noted mainly because it contrasts so much with the maritime dynamics of the major powers in the Indian Ocean. Some background may provide a requisite international law perspective. In an address entitled 'A Constitution for the Oceans', Tommy Koh of Singapore, the president of the third United Nations Conference of the Law of the Sea, said at the final session in Montego Bay, that LOSC, as it has become known, was an all-inclusive deal:

Although the Convention consists of series of compromises, they form an integral whole. This is why the Convention does not provide for reservations. It is therefore not possible for States to pick what they like and disregard what they do not like. In international law, as in domestic law, rights and duties go hand in hand. It is therefore legally impermissible to claim rights under the Convention without being willing to assume correlative duties.<sup>31</sup>

Yet, despite all the nations and island states of Africa's eastern seaboard having signed and ratified the LOSC protocols, the 'under-governance' of the seas off and of Africa's east coast is a common thread among the navies or coastguards of that region. The obligation that lies with having been 'granted' vast tracts of sea estate by the international community, and in terms of a *quid pro quo* ensuring rule of law and proper governance is not being carried out by the governments of the navies of Africa's east. These nations have a limited naval and maritime infrastructure and equipment that amount to a virtual incapacity to conduct and ensure pro-active order in their 'parts of ship'; including their territorial seas, the adjacent cultural zone and their exclusive economic zones.<sup>32</sup> This is largely due to the fact that their economies are not sufficiently strong to maintain viable maritime forces, and combined with a perceived lack of political will to change such a situation, is likely to continue. Further and making a critical observation, Gilpin notes that across post-independent histories,

the concept of security has had two broad characteristics in many African countries. First, security has been associated with the perpetuation of a regime and not necessarily the welfare of a country and its inhabitants. Secondly, the focus has been primarily land-centric, because regime security has seldom had a maritime dimension. Consequently, maritime security arrangements...are under-resourced and have received scant policy attention.<sup>33</sup>

Even the South African Navy, possessing the best maritime defence resources in the region if not on the continent, is probably under-resourced. In an article entitled 'A Task too Big for a Single Navy?', its present chief states that 'it worries me so much, the situation of the continent. We must show that we can patrol and protect our waters; or others will do so', while the author of the article, continues that 'they, of course, will do so with a primary focus on their on interests, not those of Africa.'<sup>34</sup>

The article further notes that the solution lies in regional maritime cooperation. This is not a particularly new conclusion, and is in line with similar resolutions adopted at a number of platforms over a number of years (including the Southern African Development Community's Standing Maritime Committee, the Sea Power for Africa Symposia and the African Union). Although a recent remark in the print media by a South African naval officer noted that 'Maritime security on the African continent is being addressed by means of the African Union 2050-African Integrated Maritime

Security Strategy' this is in all likelihood yet another paper tiger - given its poor track record and the extensive timeline inferred.<sup>35</sup> Since, given the continued limited maritime resources of the African continent, and the fact that a dramatic positive change in terms of maritime resources allocations in the near to medium future is unlikely, this paper would submit two issues: that regional cooperation should look beyond Africa and that, secondly, the major powers be drawn in to regional cooperation to a greater extent than merely ensuring their own national interest.

## Maritime Cooperation in the Indian Ocean

However, a role model of a maritime sort may exist for regional cooperation. Noting Kearney's requirements, above, a 'creatively' necessary manifestation includes an international fleet of warships that has been operational off the Horn of Africa, the Red Sea and the Gulf of Aden for some years now in order to counter rising piracy in the area. Although the figures change constantly, at any one time there may be up to 30 warships from at least 4 coalitions in the area.<sup>36</sup> The maritime forces have excellent maritime domain awareness, augmented by high quality exchanges of intelligence over secure links. That this cooperation is taking place between disparate maritime forces, which may otherwise display varying degrees of hostility to each other, has added a new dimension to 21st century maritime military diplomacy; as a common threat is combated. Still, piracy in the area continues to be a lucrative, low-risk enterprise. It is interesting to note that although these operations are within east Africa's area of strategic interest, no African warships are represented in this fleet. Although the South African Navy has commenced counter-piracy operations, it has restricted it to the Mozambique Channel, in pursuance of its commitment to the Southern African Development Community.<sup>37</sup>

## Involvement in international criminal law - the prosecution of Somali pirates

The United Nations Security Council has promulgated several resolutions intended to allow foreign states to police Somali waters for pirates and even continue their pursuit on land, but the international response has been inconsistent.<sup>38</sup> This is in large part due to the uncertainty of the legal status at international law that defines, or not, a pirate and piracy, countries' jurisdiction over pirates, and pirates 'expansive' human rights and nationality (which could include pirates' requests for asylum based on the warlike conditions in Somalia, and hence the associated collapse of prosecution).<sup>39</sup> Reasoning that the all United Nations member states have the UN Charter Article 51 right to use force in self-defence (whether at national or coalition level), as reaction to armed attacks by Somali pirates, Davey notes that such reaction would definitely be classified as being for defensive purposes.<sup>40</sup> However, this still does not appear to address the issue of prosecution of the pirates. 'This somewhat reluctant response from the international community is in large part the result of states proceeding cautiously in nebulous legal waters.'<sup>41</sup> Some states have

aggressively prosecuted them in their home countries, others adhere to a 'catch, disarm and release' policy, while other countries have requested east African littoral and island states in the area (Kenya, Tanzania, Seychelles, Mauritius and Djibouti) to prosecute the pirates, and imprison them if found guilty. The UN has formally proposed the setting up of specialised courts for the purposes of prosecuting pirates in these countries, although Somalia's Transitional Federal Government has stated a preference to establish the court in Somalia itself.<sup>42</sup>

In response to requests by the UN, the European Community and individual states, the burden of prosecuting pirates has fallen upon some African countries, in exchange for funds or other forms of largesse from these organisations and countries (funds which would assist the countries' prosecutorial resources). Yet, for instance, Kenya's fractious legal system already has a backlog of 900,000 cases. Its vastly overcrowded prison facilities, designed for 16,000 criminals, holds 53,000.<sup>43</sup> Kenya and the other countries on this list of six African countries are being assisted by the United Nations Office on Drugs and Crime (UNODC) counter-piracy program with judicial, prosecutorial and police capacity building programs. In addition, buildings such as prisons have or are being constructed; while office equipment, legal literature and specialist coastguard gear is being supplied.

In sum, with more than 1000 men currently in detention in 19 countries, the UNODC is addressing an urgent situation, given that long-term imprisonment places a 'very substantial burden' on prosecuting countries, and 'pirate prison overcrowding'.<sup>44</sup> Two views may arise from this. The African states may well regard these additional burdens as having been foisted upon them - more often than not these pirates that are being or have been prosecuted were not even apprehended by their maritime forces or in their territorial waters or exclusive economic zones. Yet, secondly and standing in some contrast to the first view, the capacity building is important and serves to have constructive effects beyond piracy prosecution: the rule of law is strengthened in these countries too; while Somalia gets an opportunity work towards a just and stable society for its citizens.

## **Conclusions - Africa's Quo Vadis Opportunity, the Pro-Active Forward Looking View**

Based on the observations in this paper, one may validly conclude that the vast majority of east Africa's navies have - at best - a limited contribution to make to their countries' national security and prosperity. At the risk of being too harsh, the position may even be put forward that in their present states, most navies of Africa actually represent a drain on national finance, without the benefit of that its triad duties (combat, diplomatic and policing/constabulary roles) ought to bring. This could and should be changed around.

Hence, the 'idea of ocean' is more than a subject for area studies, cultural power structure developments and geopolitics. During the Cold War, the Indian Ocean was driven along a number of dynamic ideological lines, characterised by border wars, hostility and rivalry. So much so that it took six years for a number of the Indian Ocean region countries to formally regionalise into an institution entitled the Indian Ocean Rim Association for Regional Cooperation (IOR-ARC). Its management principles include consensus decision-making, an evolutionary and non-intrusive approach through 'open regionalism' and minimalism in terms of permanent institutionalisation; where the main agency is that of regularised meetings of its foreign ministers. Aimed at enhancing economic interaction and human development in this region, it would appear that its progress is relatively moribund, despite the odd effort to energise it.<sup>45</sup>

Its structuration does not include a defence and security component, (although disaster management is an area of functional cooperation). This represents a lacuna of some magnitude, in view of the rising importance of the Indian Ocean. Not all the countries of the Indian Ocean rim are IOR-ARC members. IOR-ARC has 19 member states, 5 dialogue partners and 1 organisation (IOR Tourism) as an observer.<sup>46</sup> As most of the dialogue partners play an important role in the Indian Ocean that has been analysed in this paper, they need to be identified: China, Egypt, France, Japan and the United Kingdom.

Seizing upon the security component vacuum within IOR-ARC, India (specifically the Indian Navy) created the Indian Ocean Naval Symposium, comprising the maritime security elements of all Indian Ocean rim countries, which involves its members through active participation and ongoing programs. Again, as with the belated reaction to maritime piracy, another maritime initiative has been successfully launched from beyond Africa, and Africa has been reactive. Although it needs to be noted that the South African Navy is hosting the 3rd IONS - themed 'Regional Maritime Security Initiatives aimed at Reducing Modern Maritime Security Threats', over the period 10-13 April 2012 in Cape Town.<sup>47</sup> India has ensured that potential adversaries and interested parties, such as Pakistan and the United States, are included and accorded observer status. Except for Somalia, all Africa's navies on its eastern seaboard - from Egypt through to the islands and down to South Africa - are members of IONS. IONS contains diverse nations that appear to be united in a common cause - to safeguard the Indian Ocean so that seafarers can ply their legitimate business at sea. To avoid being perceived as the IONS hegemon, India has passed the IONS chair to other navies, while continuing to keep an eye on its creation. In the absence of formal statements, critical success factors for institutions such as IONS could be organisational dynamics that go beyond essay competitions, technical seminars, regular member conferences, such as 'typical talk shop' status, via mechanisms that would include confidence-building mechanisms (especially for those states that traditionally do not see eye to eye) and a steady decline in

illegal maritime activities in the Indian Ocean. This would involve, for instance, legal instruments, regional cooperation and the transfer of skills, which appear to be already in full swing, based on a number of activities planned by IONS.<sup>48</sup>

This paper suggests that the IONS structure can be more effective, in that its Achilles heel is the fact that it is a loose-standing institution. Further, that IONS could and should be initiated and operationalised within the IOR-ARC, as IONS is already a functional and active institution. To this effect, the challenge for the nations of IONS is to cooperate and collaborate to ensure permanent maritime security in this major maritime arena, which could occur when scarce maritime resources are pooled and productively used.

### A Serendipitous Diplomatic 'Ripe' Moment?

As Australia has accepted and has in fact begun its tenure as the Vice Chair for the IOR-ARC, and it is not only an active participant in the IONS but its next Chair and Secretariat, perhaps it should fall to the government of Australia to initiate and bring this about.<sup>49</sup> Moving IONS under the impressive integument of the IOR-ARC will give it greater legitimacy, will close the defence and security lacuna that exists, and may lead to actual, rather than virtual, maritime military cooperation in the Indian Ocean, and could well amount to a diplomatic coup for Australia. Leadership and political will are called for in order to commence and ensure effective regional maritime cooperation for the Indian Ocean region, and Australia can facilitate this potent construct.

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# Enhancing Mutual Trust and Cooperation to Jointly Build a Harmonious Ocean: PLAN Escort Missions in the Gulf of Aden

*Liao Shining*

First of all, I would like to extend my thanks to the RAN for inviting us to Sydney, the beautiful coastal city, to attend this Sea Power Conference and the 2012 Pacific Maritime Conference and Exhibition. The conference, with the theme of the naval contribution to national security and prosperity, will provide all the delegates with good opportunities in the following three days to discuss and explore how navies contribute to protecting national security and national interest and promoting national prosperity. Now, I would like to share my point of view on this theme concerning the escort missions as well as the escort cooperation by the PLAN in the Gulf of Aden.<sup>1</sup>

First, the present situation of world maritime security is stable on the whole; however, we are still facing unceasing challenges and frequent threats. Today, with global economic integration, the oceans connect the countries of the world closely together. The prosperity of a country, the welfare of its people and the stability of its society are all closely related to the ocean. Maritime security plays an increasingly important role in international political, economic and military affairs and is now becoming a global issue. The threat of piracy and terrorism at sea is increasing. Earthquakes, tsunamis, and safety accidents associated with maritime navigation and oil production occur frequently. Criminal acts such as the smuggling of weapons and drugs, and illegal immigration by sea are constant. Thus, the maritime security order has been affected. While non-conventional security issues are increasing, traditional maritime security problems remain. There are still disputes over island ownership and maritime boundaries. Military confrontation and attacks on the high seas occur from time to time. Concerns over military threats are growing among countries, particularly among those in territorial dispute. Therefore, there is an urgent need to find solutions to these problems through new ideas.

Second, China advocates meeting these challenges through a new mode of security, and has committed to building a 'harmonious ocean' together with countries of the world. The Chinese nation cherishes harmony, advocates 'amity among people and friendly exchanges among nations', and regards it as the objective of state management. Harmony is the higher level of peace. The harmonious world we are initiating means peace between countries and amity between people. A harmonious ocean is indispensable for a harmonious world. Without harmony at sea, we can not realise harmony in the blue planet where we are living. A harmonious ocean means a peaceful, tranquil, prosperous, green, cooperative and shared ocean. Building a

harmonious ocean is to keep away from war, avert threats of maritime crime and avoid destruction of the marine environment. China maintains that all countries, big or small, strong or weak, should peacefully resolve maritime disputes through equal consultations and negotiations in accordance with the *United Nations Convention on the Law of the Sea 1982* (LOSC) and other international laws, so as to prevent and avoid maritime military competition and even conflicts.

Third, pursuing security through cooperation is increasingly becoming the consensus approach of the international community, and from this flows increased bilateral and multilateral security cooperation. With peace, development and cooperation as the aim, countries in the western Pacific Ocean region are gradually viewing cooperation on maritime security as an important way of creating a secure maritime environment and achieving common security and economic development. We shall conduct international cooperation on maritime security in accordance with the United Nations Charter, the LOSC and other generally recognised norms governing international relations, continue to pursue common security and development and respecting sovereignty, rights and interests of coastal countries so as to find out multiple peace-oriented means to safeguard maritime security.

I think this conference theme is of great significance. The ocean is the main domain for navies. Nonetheless, with economic globalisation, the oceans have never embodied so many interests of the international community and exerted such an important influence on economies, politics and militaries as occurs today. Likewise, navies have never been so indispensable today to ensure the security, development and prosperity of countries in the world as a whole. In accordance with United Nations resolutions, more than 20 countries dispatched about 40 naval ships to the Gulf of Aden and the waters off Somalia to escort merchant ships transiting that area and implementing counter-piracy operations, which forcefully demonstrated the role of navies in maintaining the security of shipping and trade of the world. The PLAN also participated in these escort missions. Now, I would like to brief you on these escort missions and the cooperation we conducted with foreign navies in this regard.

In accordance with the United Nations Security Council resolutions, the Chinese government dispatched naval task groups to conduct escort missions in the Gulf of Aden and the waters off Somalia on 26 December 2008. The main mission was to provide safety and protection for Chinese merchant vessels and personnel transiting those waters, vessels carrying humanitarian relief materials for the World Food Program (WFP) and other international organisations, as well as foreign vessels transiting those sea areas. By now, the PLAN has successively deployed 25 warships and nearly 10,000 officers and men in 10 rotations to conduct escort missions in the Gulf of Aden and the waters off Somalia. We have successfully escorted more than 4400 vessels in total, half of which were foreign vessels. Moreover, we have rescued 40 merchant vessels from pirate attacks, received and escorted 9 vessels released by pirates and conducted 4 convoys for vessels carrying humanitarian relief material.

The PLAN has actively participated in the international cooperation on escort operations. We have undertaken mutual visits of commanders of our task groups with their counterparts of other escort task forces: the European Union, Combined Maritime Forces, NATO, Russia, the Republic of Korea, Netherlands and Japan; established procedures for intelligence and information sharing with relevant countries and organisations; carried out joint escort missions with Russia; conducted joint maritime exercises with the Republic of Korea; and exchanged officers with Netherlands for onboard observation. We also conducted friendly cooperation with various navies in dealing with emergent situation in the operational area, organising and coordinating military operations and logistic support. The navies of the United States and India provided us with intelligence support during the rescue of the merchant vessels *Tai Ankou* and *Full City* respectively. In addition, we have actively participated in some international conferences, such as the Contact Group on Piracy off the Coast of Somalia and Shared Awareness and De-confliction.

The PLAN has conducted escort operations in the Gulf of Aden and the waters off Somalia for three years, fully demonstrating the determination of China to commit itself to the construction of a harmonious ocean. We draw inspirations from the PLAN escort missions and international cooperation practices as follows:

**Inspiration 1:** Navies are the main force for maintaining world maritime peace and building the harmonious ocean as well as acting as the guardian to maintain world maritime order and economic development and prosperity. Taking China as an example, we are increasingly dependent on maritime transportation, demonstrated by the fact that nearly 90 per cent of the total volume of our foreign trade and nearly 60 per cent of strategic resources such as petroleum and minerals are transported by sea. Maritime traffic routes have become the lifeline of the Chinese economy. Just in the Gulf of Aden and the waters off Somalia, about 1500 Chinese ships transit annually. However, the Somali pirates have turned these waters into ‘a sea of horror’. Chinese ships transiting the area are hijacked and attacked from time to time, and some of them are forced to reroute causing huge losses to the Chinese shipping industry. The transportation costs of some goods important to the national economy and the people’s livelihood have drastically increased, resulting in higher costs of the daily necessities for ordinary Chinese. Therefore, the escort operations of the PLAN and other navies in the Gulf of Aden and the waters off Somalia have a direct and important bearing on the national and global security, development and prosperity.

**Inspiration 2:** Promoting cooperation is the right way to deal with non-traditional maritime security threats and to maintain world maritime security. In this era of economic globalisation and

information networking, we are all confronted with non-traditional security problems. The international community shares common interests in the field of counter-piracy, counter-terrorism, smuggling, drug trafficking, illegal immigration and other maritime transnational crimes. It is hard for any country to cope with these threats by itself. Only by strengthening practical exchanges and cooperation and joining hands in dealing with the global maritime security threats, can world navies maintain and enhance global maritime security and prosperity.

**Inspiration 3:** The international community should set up a shared security concept to address non-traditional security threats. The characteristics of cross-country and cross-region non-traditional security threats have brought about a common interest on security matters than existed before. The practice of dealing with security between countries as a ‘zero-sum’ game by achieving individual security by sacrificing the interests of other countries is changing. It is necessary for all of us to take the common security concept as an important precondition of addressing non-traditional security threats in a cooperative way so as to establish international security mechanisms capable of effectively responding to various non-traditional security threats through strengthened dialogues and cooperation. Meanwhile, we should give full play to the active role of geographical organisations while taking the UN as the leading role in the process.

China is a peace-loving country, and the Chinese people are a peace-loving people. Since the implementation of the ‘reform and opening-up policy’, China has enjoyed a stabilisation of its national political institutions and domestic society, as well as sustainable socio-economic development. This achievement is perfectly obvious to all. In recent years, with the rapid progress of foreign trade and commercial transportation, there is a strong demand for the protection of maritime transportation by the PLAN. For this purpose, we have undertaken some missions in open sea regions to gradually develop our capabilities to cooperate at sea and respond to non-traditional security threats. I know these operations have attracted the attention of the world and caused some suspicions, envy and even nervousness among some countries. As a member of the PLAN, I have the obligation to share with you the following information: the fundamental purpose of China constructing and developing its navy is to effectively uphold our national sovereignty and security, safeguard our territorial integrity, protect the development benefits and interests of China, and to maintain peace and stability in the world. The PLAN pursues an ‘offshore defence’ strategy, the core of which is to fight against foreign aggression from offshore waters and to safeguard national integrity. Nonetheless, this does not mean the PLAN can only manoeuvre in such sea areas. The development of the

PLAN does not constitute a threat to any country. As we have gradually improved our capability in open sea operations, China will progressively shoulder more international responsibilities and obligations.

## Note

- 1 The PLAN did not present at the Sea Power Conference 2012. This paper was submitted and accepted as a contribution to the conference proceedings.





# An Australian Perspective on International Naval Cooperation

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*Greg Sammut*

You might imagine that within a navy full of frank and candid Australians, there's unlikely to be a commonly shared perspective on much at all! I am confident enough, however, to claim that there are strong themes that shape our understanding of naval coalitions. I aim to define these through the lens of our enduring contribution to the long-running international naval coalition operating in the Middle East Area of Operations, conceived as the Multinational Naval Force in 1990 and continuing to this day in the form of Combined Maritime Forces

I would like to outline these themes at the outset, followed by a brief chronicle of the RAN coalition experiences in the Middle East from which they are borne. I will then revisit the themes in greater detail before concluding.

## Themes that Shape our Understanding of Naval Coalitions

In my view, the principal themes to emerge from our involvement in naval coalitions are:

- the central importance of coherent national policy, robust rules of engagement (ROE), and flexible guidance for the forces of nations assigned to naval coalition
- the complementary synergy to arise from a coalition of diverse forces
- the 'doctrine dividend', meaning the significant value gained from proficiency in common techniques, tactics, and procedures
- renewal afforded by the rotation of staffs and ships in and out of coalitions
- the ineffable value of relationships in addition to sound structures.

## Coalitions and Alliances

For the purpose of this paper, I did wish to clarify the distinction between operations conducted within an alliance construct and those prosecuted as part of a coalition. In broad terms, I consider operations within an alliance as being governed by a common political aim and therefore a unifying mandate. Such operations are also conducted under common (or, at least, very similar) rules of engagement.

I have regarded coalition operations as being governed by similar, though not necessarily identical, political aims. Forces within coalitions operate under national mandates that might differ to varying degrees from the mandates of other nations. For this reason, rules of engagement are also likely to diverge.

## A Short Chronicle of our Enduring Involvement in the Middle East

While the RAN has been involved in coalition-like operations since the 1980s, it has been the near-continuous presence we have maintained in the Middle East Area of Operations since 1990 that has shaped our current thinking on international coalition operations.<sup>1</sup>

Since the 1990-91 Gulf War, the RAN has contributed task group and task force command staffs, ships, aircraft, clearance diving teams, medical teams, and logistic support elements in support of operations extending from the Northern Arabian Gulf to the Gulf of Aqaba. I can hardly do justice in this paper to what has amounted to nearly 20 years of coalition operations within this important part of the world, but I would like to briefly summarise our involvement, from which I have drawn the themes that characterise our understanding and approach to naval coalition operations.

In response to Iraq's invasion of Kuwait on 2 August 1990, Australia joined the Multinational Naval Force that was assembling to enforce economic sanctions against Iraq under swiftly adopted United Nations Security Resolutions to first establish a complete economic embargo, and subsequently call on states deploying maritime forces to enforce the embargo. The Multinational Naval Force was building up under the overarching Operation DESERT SHIELD. Australia's naval contribution of a task group comprising two frigates, a replenishment ship, and a task group commander was known nationally as Operation DAMASK.<sup>2</sup>

Of note, the Multinational Naval Force operated under command and control arrangements termed loose association, which meant that 'all ships would remain under national control and that tactical and operational control would be retained by on-scene task group commanders'.<sup>3</sup> For the purposes of the mission of intercepting all maritime trade to and from Iraq, this was deemed to work well. We might also recognise it as the template for ongoing coalition command and control arrangements.

With the adoption of United Nations Resolution that authorised the use of force against Iraq unless it withdrew from Kuwait, Operation DESERT SHIELD transitioned to Operation DESERT STORM and the RAN maintained its commitment to coalition efforts under Operation DAMASK. Our major surface combatants in the area of operations were incorporated as air defence assets into Battle Force Zulu, the naval strike force operating in the Gulf under leadership of the US Navy. Our support ships operated as part of the Combat Logistics Force.<sup>4</sup>

The RAN also deployed Australian Clearance Diving Team Three and Task Group Medical Support Elements to the Middle East during this period. All forces in theatre were supported the Navy's Logistic Support Elements, which operated in various countries.

After Iraq's removal from Kuwait and the end of hostilities, Operation DAMASK continued. The RAN periodically rotated surface combatants through the Middle East Area of Operations to enforce sanctions against Iraq through the conduct of maritime interdiction.

The Australian maritime mission in the Middle East was recast following the terrorist attacks in the United States on 11 September 2001. Our naval operations in the region fell under the new Operation SLIPPER, which was Australia's contribution to the US-led Operation ENDURING FREEDOM. To be historically correct, Operation SLIPPER did arise from the invocation of the ANZUS Alliance with the United States. That said, subsequent operations with multinational naval forces in the Middle East were conducted under coalition arrangements. Under Operation SLIPPER, our deployment of independent task group commanders and staffs to the area of operations, which had ceased following the end of the 1990-91 Gulf War, resumed. There was also an increase in the number of Australian ships concurrently assigned to operate in the region. Interdiction operations continued under Operation SLIPPER at this stage; however, the larger presence of RAN ships and personnel signalled a renewed commitment to security and stability in the region following the events of 11 September 2001.<sup>5</sup>

Soon afterwards, command of Maritime Interdiction Force operations passed to Australia at the Commander Task Group level, rotating thereafter between the Australian and US navies.

To assist in following the timeline at this point, the United Nations Security Council adopted Resolution 1441 on 8 November 2002, 'affording Iraq a final opportunity to comply with its disarmament obligations and three weeks later the United Nations Monitoring, Verification, and Inspection Commission resumed inspections.'<sup>6</sup>

From 19 January 2003, maritime operations in the Middle East fell under the banner of Operation BASTILLE, which covered the 'pre-deployment of Australian Defence Force assets to the area of operations in support of potential future operations.'<sup>7</sup> At this point, Australian Clearance Diving Team Three returned to the Middle East as an additional contribution to coalition naval operations.

Following the report of the Monitoring, Verification, and Inspection Commission to the United Nations on 7 March 2003, the United States sought a new resolution on Iraq and separately gathered support from the 'Coalition of the Willing', a group of states committed to Iraq's disarmament.

At about this time, the designation of the Australian Task Group Commander was changed from Maritime Interdiction Force Commander to Maritime Interception Operations Screen Commander to command the furthest up-threat units of the Coalition naval force. In this role, he was responsible for a major component of the ensuing Khawr Abd Allah clearance operation.<sup>8</sup>

On 18 March 2003, Australia committed its defence force elements in the Middle East to the coalition of military forces prepared to enforce Iraq's compliance with its international obligations to disarm.<sup>9</sup> Our naval forces in the area of operations fell under Operation FALCONER, which encompassed the broader contribution of the Australian Defence Force to the US-led Operation IRAQI FREEDOM. In the following combat operations, Australian maritime elements operated close to the Al Faw Peninsula, closely integrated with units of the Royal Navy and the US Navy.

Following the fall of the Saddam Hussein, Australia continued its contribution to ongoing maritime operations in the Middle East under the banner of Operation CATALYST, with the purpose of developing a secure and stable environment in Iraq, assisting national recovery programs and facilitating the transition to Iraqi self-government.<sup>10</sup> Operations mirrored the pre-war activities of the Maritime Interdiction Force, but were now executed to support the new Iraqi administration and took the title of Maritime Security Operations. These encompassed the protection of Iraq's oil platforms, which were vital to its economy.

Under Operation CATALYST, our responsibilities expanded within the Middle East Area of Operations to include task force command at the one-star level. This commenced with command of Combined Task Force 158 on a rotational basis. As Operation CATALYST drew to a close, Australia refocused its maritime contribution in support of Operation ENDURING FREEDOM. This saw our Combined Task Force commanders and staff, as well as our ships, continue their deployment to the area of operations once again under Operation SLIPPER, supporting the counter-terrorism, counter-piracy, and capacity building missions of Combined Maritime Forces. Indeed, today, Combined Task Force 150 is operating under the command of an Australian one-star officer and deployed staff, and HMAS *Parramatta* is assigned to operations Middle East Area of Operations, ably supported by dedicated logistics element based in Bahrain. RAN personnel also continue to serve on the staff of Combined Maritime Forces.

This brief overview of the RAN's long involvement in Middle East Area of Operations illustrates that we have operated within a coalition environment at several levels including the tactical and the tactical-operational. We have also operated across the spectrum of maritime roles, from diplomatic and constabulary activities through to combat. Closer study also reveals that operations and the arrangements under which they have been conducted have continually evolved. All of our ships, teams, and command staffs have been exposed to differing priorities, circumstances, or situations - not surprising considering the dynamics that have shaped the Middle East region, as well as the adaptable adversaries we've faced over the course of 21 years.

So, how do the themes I mentioned earlier emerge?

## Coherent Policy and Robust Rules of Engagement

My first theme concerns national policy and rules of engagement (ROE).

As I mentioned earlier, the forces of a nation operating within a coalition do so under normally distinct national mandates. This diverges from stricter alliance constructs under which the combined forces tend to operate under an overarching common political mandate. Notwithstanding the shared aim that unites a coalition, national policies governing the employment of forces are likely to differ, and national rules of engagement also tend to vary in details of significance. Though we tend to prefer singular missions and unity of command, I would assert that these differences are not necessarily detrimental and are, in fact, one of the strengths of coalitions. They afford a naval coalition much more flexibility than rigid alliance frameworks by combining forces that can undertake a broader range of missions. I offer the example of Combined Maritime Forces today, which is concurrently undertaking counter-terrorism, counter-piracy, and capacity building missions. Not all of the units in Combined Maritime Forces are able to contribute to each mission; however, each mission remains supported by national contributions of people, ships, and aircraft all in conformance with national mandates.

In the same breath, however, I would claim that the utility of these contributions is greatly aided by coherent policies and robust ROE. As an observation, coalitions have generally benefitted from the clearest of United Nations Security Council Resolutions, which leave less room for interpretation and promote uniformity in the national mandates of forces contributed to coalitions (likely to be higher in number as a result). Less staunch resolutions demand greater effort to define the mandate under which forces contributed to coalitions should operate. They also call upon the careful formulation of rules of engagement that do not obviate the flexibility required to make a meaningful contribution, yet establish clear boundaries of activity that national forces operating within a coalition may undertake (this, I believe, distinguishes robust ROE from rigid ROE). This is as important to coalition commanders as it is to the commanding officers of ships, enabling the appropriate employment of forces to achieve objectives without undermining the coalition cohesion.

I feel compelled to also state that coherent national policy needs to be informed by an understanding of the realities in theatre. Often, our policy lags developments in the area of operations, particularly in the course of operations that run over long periods. I certainly experienced this during my tenure in command of Combined Task Force 150, and found it necessary to provide briefs on circumstances in theatre that warranted a review of policy.

As a final point on this theme, we should remember that ambiguity will inevitably arise in the course of coalition operations. While sound policy and appropriate rules of engagement help, and we often have recourse to legal advice, we still need to make command decisions. Just as important as policy and ROE are, so too are the

ability of forces assigned to coalitions to apply them prudently. This means that the preparation of forces for coalition operations must extend beyond merely employment of tactics, techniques and procedures. It should include a thorough exploration of ROE-related matters, and the potential differences likely to arise in coalitions.

## Complementary Synergy

My second theme is complementary synergy.

Readily apparent within coalitions is the range of capabilities that can be assembled within a combined naval force and the inherent flexibility this affords those coalitions. Generally, within combined task forces, niche capabilities have been found and exploited. Back to the earliest days of modern coalition operations in the Middle East, the expertise of the US Coast Guard Law Enforcement Detachments established them as undisputed leaders in the conduct of enforcement operations against Iraq. Arguably, few if any of the contributing navies had similar capabilities. Beyond leveraging the proficiency of these teams to execute the mission, their assistance was sought to train coalition boarding teams. Success in doing so has led to the situation where the RAN and other navies now have world class boarding capabilities that have continued to serve coalition operations well in the region.

Another example of complementary synergy arose during Operation IRAQ FREEDOM (our Operation FALCONER), where the combination of shallow draft and medium calibre gunnery made Royal Navy and RAN ships ideal participants in combat operations on the Al Faw Peninsula. From inshore fire support areas, HMAS *Anzac* and HMS *Marlborough*, along with HMS *Chatham* and HMS *Richmond*, provided naval gunfire support during the assault on the peninsula by Royal Marines. The same ships also served as capable escorts of the humanitarian aid vessels approaching the coastal areas of Iraq as combat operations drew to a close. Deeper draught US Navy ships operated further to seaward supporting long range strike and air defence functions.

Aside from complementary equipment capabilities, the capacity of regional members of naval coalitions to carry the mission into territorial waters is another valuable and important synergy, particularly during the prosecution of constabulary operations. The success of such operations is invariably enhanced when the sanctuary of territorial waters is denied to adversaries. Regional navies and maritime law enforcement agencies play an especially important role here. They also play an indispensable role during diplomatic missions, such as capacity building, where a deep understanding of regional issues and sensitivities is probably more relevant than a willingness to help alone.

Additionally, in observing both complementary and similar capabilities at work in coalitions, participating navies are provided with ideal opportunities for benchmarking. At the time, the RAN certainly came to understand some of the

limitations of its air defence capabilities more clearly while operating alongside US Navy units during the 1990 conflict with Iraq - lessons which fed into the development of our current and future capability. During my most recent experience in the area of operations, I also learned that the French navy valued the opportunity for their carrier, *Charles de Gaulle*, to operate alongside USS *Abraham Lincoln*. Though such opportunities arise in the course of other interactions with foreign navies, the range and extent of activities undertaken within naval coalitions certainly makes the experiences far richer.

It might be a stretch, but I think there is room under the theme of complementary synergy to include the advantages to accrue from differences in command cultures we have observed in coalition operations. As a general observation, the RAN and some partners have tended to prefer command by delegation over tighter forms of command during operations in the Middle East, and this is generally the manner in which our people have led operations as task group and task force commanders. Under this concept, we have sought to provide on-scene commanders with a greater degree of discretion to assess circumstances and act within the boundaries of broader guidance. Employing this approach, we have endeavoured to act as a robust interface between units at sea and higher coalition headquarters, with the aim of leveraging an on-scene commanders' inherent ability to act most appropriately given their more intimate understanding of the situation. Without ignoring the direction of senior commanders, we believe we have generally achieved sound outcomes and strong trust with units operating under our tactical control. At the same time, however, we have certainly learned about the 'speed' of command and control that can be achieved through capabilities such as high-data rate communications and modern information technology.

## Doctrine Dividend

I have labelled the 'doctrine dividend' as my third theme.

As maritime war fighters, we recognise the significance of operational and tactical doctrine as fundamental components of sea power. Arguably, the importance of doctrine grows the more diverse force composition becomes, particularly as the complexity of tasking increases.

It is therefore no surprise that over the course of coalition operations in the Middle East, the experience of the RAN has consistently demonstrated that a shared understanding of doctrine and, ideally, common tactics, techniques and procedures, have been among the foundations of operational success. Just as importantly, the degree of commonality has been directly proportional to the utility of national contributions to coalition operations. I have termed this the doctrine dividend.

It was not coincidence that the three Australian ships first sent to the Middle East Area of Operations in 1990 had recently participated in Exercise RIMPAC, during which tactics and procedures had been practiced alongside the US Navy and other



participating navies. As previously explained, the two combatants among these ships were integrated into Battle Force Zulu as air defence assets. Needless to say, the ease with which HMAS *Anzac* could provide fire support to Royal Marines during combat operations in March 2003 depended highly on commonality of doctrine, which allowed the RAN to bring the capabilities of the ship to bear in theatre.

Of course, doctrine is no less important to the successful conduct of constabulary operations within coalition environments. I have already mentioned the value gained from the training provided by US Coast Guard Law Enforcement Detachments in boarding operations. While this training and its incorporation into the boarding guidance of individual nations has been of immense benefit to individual boarding teams, it has also helped to assure coalition commanders of the likely proficiency of coalition units undertaking such constabulary roles.

## Renewal

The fourth theme is renewal.

Within theatres of operation where circumstances change over time, particularly over the course of enduring operations in the Middle East, there is much to be gained from the rotation of staffs and ships. Without disregarding the importance of maintaining the aim and avoiding mission creep, I think we have generally benefited from the fresh set of eyes that each new command team (whether task force staff or ship) brings to theatre. The wisdom of permanent staffs in the theatre should not be overlooked. Yet, the coalition construct in which command teams rotate in and out of theatre certainly leads to the healthy situation where the 'norm' can be more readily questioned.

I believe this begins as each incoming commander and staff works through the commander's estimate and military appreciation process. The benefit is usually gained as the command team adapts plans to the realities confronted in theatre, and has the opportunity to prepare and propose operational responses, which can be a lengthy process in coalition environments.

Beyond preventing hubris within a coalition, the advantage also extends to keeping national commanders informed of changes in theatre, which should prompt a review of policy, ROE, and preparations for ongoing operations.

## The Value of Relationships over Structures

The last theme I raise concerns relationships and their overriding importance in coalition environments. Regardless of historical ties, doctrine, procedures, and directions, I firmly believe more is achieved through productive relationships between commanders. Arguably, the personal relationships between commanders operating in coalitions at all levels constitute one of the most pivotal factors underpinning success.

Each Australian commander returning from naval coalition operations can speak of the areas in which they made the greatest progress. In the same breath, they will mention the people who helped to make it happen and the valuable working relationship that transformed endeavours into achievements. I can certainly point to the many important professional relationships I was fortunate to share in theatre, and the overriding value of being able to meet face-to-face with counterparts, talking openly and honestly about challenges and issues, and cooperating during the planning and conduct of operations.

I would not suggest that working relationships are unimportant within alliances; however, I would assert that within coalitions, where participating forces are often employed on differing primary missions, stronger links borne of friendships between commanders will often find the means by which more can be achieved by way of cooperation.

Under this theme, I would also point to the success of the Coalition Force Maritime Component Commanders' Course run by the US Navy. Beyond the development of command skills particularly relevant to coalition operations, this course presents attendees with an unparalleled opportunity to extend professional relationships and establish the friendships that contribute directly to operational effectiveness.

## Conclusion

In conclusion, I can claim that the RAN shares relatively substantial experience in coalition operations along with many of its partner navies. Over the course of coalition engagement in the Middle East since 1990, the RAN has participated in operations across the spectrum of maritime roles from diplomatic, through constabulary to conflict. We also continue to enjoy the privilege of contributing to such operations at all levels through the ongoing contribution of ships, aircraft, support elements, embedded personnel, and task force staffs.

Acknowledging that we have learned much from our involvement in these operations, I would also claim that we have justly regarded ourselves as having been successful in meeting coalition objectives and making a meaningful contribution to various missions throughout a large area of operations.

Through such experience, enduring themes have emerged. The more prominent of these include: the central importance of coherent national policy, robust ROE, and flexible guidance for assigned forces; the complementary synergy to arise from a coalition of diverse forces; the 'doctrine dividend'; renewal afforded by the rotation of staffs and ships in and out of coalitions; and the fundamental importance of relationships between commanders.

Perhaps I have merely articulated what many of us have come to intuitively understand after the growing number of years many of our navies have been operating in coalitions. If so, then I might close with one final observation - naval coalitions are increasingly likely to be the structures under which we will continue to jointly contribute to stability and security on and from the sea into the future.

## Notes

- 1 Following the Soviet invasion of Afghanistan and the start of the Iran-Iraq War in 1980, the RAN deployed a destroyer or frigate to the north-western Indian Ocean until 1986 on national tasking. In reality, the RAN ships operated with the American carrier battle group on what was termed *Gonzo Station*; see G Nash and D Stevens, *Australia's Navy in the Gulf - From Countenance to Catalyst, 1941-2006*, Topmill, Sydney, 2006, p. 11.
- 2 Nash & Stevens, *Australia's Navy in the Gulf*, pp. 14-15.
- 3 R Shalders, 'Sixteen', in J Mortimer and D Stevens (eds), *Presence, Power Projection and Sea Control: The RAN in the Gulf 1990-2009*, Papers in Australian Maritime Affairs No. 28, Sea Power Centre - Australia, Canberra, 2009, p. 165.
- 4 Nash & Stevens, *Australia's Navy in the Gulf*, pp. 24-32.
- 5 Nash & Stevens, *Australia's Navy in the Gulf*, p. 50.
- 6 Nash & Stevens, *Australia's Navy in the Gulf*, p. 59.
- 7 Nash & Stevens, *Australia's Navy in the Gulf*, p. 59.
- 8 Nash & Stevens, *Australia's Navy in the Gulf*, p. 62.
- 9 Nash & Stevens, *Australia's Navy in the Gulf*, p. 66.
- 10 Nash & Stevens, *Australia's Navy in the Gulf*, p. 78.

# Maritime Operations in the Asia-Pacific Region

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 Scott Swift

I feel like a bit of an imposter here representing VADM Mark Fox, who is a very good personal friend.<sup>1</sup> Thanks to VADM Ray Griggs for this opportunity to address the important topic of ‘maritime operations in the Asia-Pacific region’ to this distinguished group of maritime leaders and supporters. Being here in Australia is truly special for me as a naval officer as this is my first time visiting the country since assuming command of Seventh Fleet. Although this is my first visit as Commander Seventh Fleet, it will certainly not be my last.

My trip here is not only an opportunity to discuss maritime operations in the Asia-Pacific region but to recognise our long-standing alliance with Australia. While the United States has seven military treaties world wide, our treaty with Australia has been unique in that Australia has stood side-by-side with us through more conflicts than any other single ally. In April and May of 2012, the 70th Anniversary of Battle of the Coral Sea will be celebrated here in Australia. It will be a time to reflect on a critical part of our naval history where our forces came together and fought a hard battle that became the turning point for the war in the Pacific.

That special relationship remains strong today and our ties are only growing between our forces. From a navy-to-navy perspective, we train together at every opportunity. During the biannual Exercise TALISMAN SABRE, we operate both a command post exercise and a field training exercise that flexes our capabilities to the utmost and ensures we can operate seamlessly together as allies. In the last TALISMAN SABRE, in all, there were a total of over 13,000 US and 9000 Australian troops training with each other, making it the largest and most important bilateral exercise that we conduct together. Our men and women sailed ships, flew planes, and ground-pounded together, shoulder-to-shoulder, in an effort to work together more effectively and efficiently. This exercise is a major undertaking which reflects the closeness of the Australian and US alliance and the strength of our military-to-military relationship. We will showcase the strength of this alliance again during TALISMAN SABRE in 2013.

Australia is an important ally, but so are our other allies and maritime partners in this region. As expressed in the President of the United States priorities for the US 21st century, our relationships with Asian allies and key partners are critical to the future stability and growth of the region.

During the rest of our time together, I will touch on three topics that I think are important for understanding why and how the US Navy operates in this region:

1. The importance of this region to the United States.
2. What the US Seventh Fleet looks like today.
3. The importance of building stronger maritime partnerships to ensure continued stability, prosperity and security in the Asia-Pacific region, a very important topic for me.

So what makes this region important? As we have all come to realise, globalisation has generated a host of transnational challenges that do not recognise borders, nor do they recognise nation states. No one nation has the resources or capacity to meet these many complex challenges alone. The United States leadership from the President to our Chief of Naval Operations has embraced the importance of the Asia-Pacific region. This region is one of the most dynamic areas of our rapidly-changing world. So many global trends point to this region. It is home to nearly half the world's population, it boasts several of the largest and fastest-growing economies and some of the world's busiest ports and shipping lanes. It also presents consequential challenges such as military build-ups, concerns about the proliferation of nuclear weapons, natural disasters, and the world's worst levels of greenhouse gas emissions.

The Seventh Fleet has to be flexible and responsive to address a range of activities that are particularly important in the region. It is becoming increasingly clear that in the 21st century, the world's strategic and economic centre of gravity will be here, from the Indian subcontinent to the western shores of Australia. And one of the most important tasks of American statecraft over the next decades will be to lock in a substantially increased investment diplomatically, economically, strategically, and otherwise in this region.

Overall, our commitment to regional security in Asia will continue. We will also be taking steps to strengthen and diversify our security relationships around the Pacific. Our newest Chief of Naval Operations Admiral Jonathan W Greenert recently released his Guidance for the Navy called *Sailing Directions*. The guidance lays out a course for our future navy and clearly outlines our core responsibilities, our mission, and his vision, tenets and guiding principles. Number one, readiness is first. Our job is first defeat as required, and that is our only job. Number two, we need to operate forward. That is where the US Navy is at its best and has been at its best. Number three, we have got to be ready. It is about people, it is about organising, training, equipping and manning our units and making sure those units when they are operating forward are ready to go.

So of the 285 ships in our navy today, about 100 are deployed at any given time and the vast majority of those are in the western Pacific Ocean or the Arabian Gulf. That is commitment! It is not just about the Asia-Pacific but certainly that is the top priority. The ability to maximise the techniques, tactics and procedures through training events and exercises is paramount to the success of any navy. We have our

top-notch capabilities here in the western Pacific Ocean. That is the most advanced aircraft, cruisers and destroyers, submarines, and equipment in the navy. We put the best equipment we have, in our forward deployed naval force. That is the front line; that is what we have in and around the Asia-Pacific region. But the strength of any navy lies not in our equipment and technological edge but in the knowledge of people and with that, we will continue to nurture relations. That is embedded in our commitment.

Being the Seventh Fleet Commander is a truly humbling experience. To start with, the Seventh Fleet area of operations encompasses more than 48 million miles<sup>2</sup> from the Kuril Islands in the north to the Antarctic in the south, and from the International Date Line to the 68th meridian east, which runs down from the India-Pakistan border. The area includes 35 maritime countries and the world's five largest foreign armed forces – People's Republic of China, Russia, India, North Korea and Republic of Korea. Five of the seven US Mutual Defense Treaties are with countries in the area - The Philippines, Australia and New Zealand, the Republic of Korea, Japan, and Thailand.

Our presence in the region is more important than ever. US naval forces help encourage dialogue, promote growth and ensure the free flow of trade, of which the oceans have increased importance. The seas are our lifeline for survival. Ninety per cent of the world's commerce travels by sea. The vast majority of the world's population lives within a few hundred miles of the oceans and nearly three quarters of the planet is covered by water. Half of the world's population lives within the Seventh Fleet area of operations.

As you know, the Asia-Pacific region is one of the most dynamic areas of our rapidly-changing world. All navies have to be flexible and responsive to address a range of activities that are particularly important in the region. For the US Navy, it can take more than two weeks for a ship to get from San Diego to the eastern boundary of the area of operations, and a similar amount of time to the western boundary from Norfolk, Virginia. The presence of Seventh Fleet's forward-deployed forces facilitates rapid response to natural and manmade crises in the region.

From where I sit as the Seventh Fleet Commander, I can tell you that our commitment to this region has never been stronger. At any given time, there are 60-70 ships, 200-300 aircraft and 40,000 Navy and Marine Corps personnel assigned to and operating in the fleet. This includes forces operating from bases in Japan and Guam and rotationally-deployed forces based in the United States, compared with about 50-60 a decade ago. This afternoon, for example, I have 80 ships in the Seventh Fleet, including two aircraft carrier strike groups and an amphibious ready group.

While it is good to know that the US Navy has a credible and robust amount of capable hardware in this region, as I stated earlier the strength of any navy lies not in the assets it possesses but in the knowledge of its people. The ability to maximise the techniques, tactics and procedures through training events and exercises is

paramount to the success of any navy. For the Seventh Fleet, our alliances are the solemn promises of our nation, and we must be ready to honour those commitments with seamless interoperability and trust at the deck plate level. Additionally, we seek to expand our circle of maritime partnerships in order to promote transparency, foster goodwill, and encourage greater multilateralism.

Along with exercises, Seventh Fleet assets routinely provide maritime domain awareness of vessels operating in the region via real-time direct communication and submission of real-time sighting documentation during transits on the high seas. The Navy's ongoing support to these missions is important to enhancing maritime security in the region. Missions like these also serve as valuable opportunities to further strengthen already strong relationships between the US Navy and various host and partner nations.

As you can see Seventh Fleet is in the region with credible forces and does credible work. The bottom line is that Seventh Fleet never left the region. The US Navy has had a continuous presence to the region since 1852 and its priorities to the region have not changed. My priorities as the Seventh Fleet Commander have not changed.

My first priority is 'operational readiness and assessment'. We must be supremely confident of our skill in naval warfare. That means ensuring our fleet is trained, equipped and ready to respond, and that it engages in regular and rigorous self-assessment to further improve combat readiness.

My second is 'maximising force posture'. The United States invests tremendous resources into deploying sailors, marines, ships, submarines and aircraft in the Asia-Pacific region, and we must ensure we maximise their time here by employing them effectively, anticipating potential threats and missions, managing risk and positioning them for success.

My third priority and what I spend a great deal of my time doing is to 'develop and build on maritime partnerships'. I want to really focus on that last priority of developing and building maritime partnerships since it is where I believe we have the most to gain from our collective investment of time and resources. We build relationships with our allies and maritime partners through many different types of interactions from staff talks to personnel exchanges, but our most important means of building functional interoperability is through our bilateral and joint exercises that we participate. In any given year, we conduct over 125 exercises that provides in depth opportunities to share better practices and techniques and to learn about each other both during the exercises and outside of the exercises. The relationships that are formed from junior sailors to senior sailors between two or more navies create a foundation for any future interactions and operations.

In 2011, Seventh Fleet forces led the way in its efforts, exercises and missions that improved interoperability of our surface forces with our joint services and partner nations, allies and friends in areas of maritime security, power projection and

deterrence. Conducted at various times throughout the Pacific and Indian ocean basins, Seventh Fleet forces conduct unilateral and bilateral exercises in order to hone and improve joint/combined combat readiness and interoperability.

Building, maintaining, and extending a maritime partnership follows the same process as friendship. It starts with spending time together and getting to know each other. And you cannot build a relationship through only e-mail, letters, and short video teleconferences, you have to meet face to face and have meaningful dialogues. Let me give you an example of how important I view meeting face to face with my fellow navy leaders in this vital region. Since I took command of the Seventh Fleet last September, I have made more than 15 trips to 12 countries to speak with navy and government leaders.

What is evident with every navy leader regardless of country is that we share many of the same concerns. First and foremost I found that we all shared a common vision and understanding of the critical importance of freedom of movement and freedom of navigation and having a safe maritime environment for the movement of goods and people, that transcends any other differences. We were in complete agreement that this region was growing in importance, and that all nations should work together to ensure respect for international law and ensure that aggressive actions by others would be responded to appropriately. We all wanted the same thing: peace and stability in this region to ensure our collective prosperity and security.

Were there differences? Of course there were. Each country has a unique history and political environment but by not focusing on the differences but the reasons for the difference, we were able to transcend those differences and commit to working and training together.

So what do I see in the future of Seventh Fleet? I see us continuing to operate throughout our 48 million miles<sup>2</sup> area of responsibility according to international norms just as today; I see alliances and maritime partnerships growing stronger because of a commitment on both sides to realise the benefits of a larger force ensuring stability in the region; I see more opportunity for bilateral and especially multilateral navy exercises opportunities, and while our forces while maybe not significantly larger in total numbers they will be increasingly capable; I see our role in building partnerships being of enhanced focus and more integrated with the overall US focus on this important region; and finally I see a bright future for all of countries in the region that are committed to peace, stability and prosperity through freedom of navigation and respect for international norms.

The bottom line for me is that I do not see any change for the role of the Seventh Fleet in the Asia-Pacific region - we will continue to be a relevant and reliable ally and maritime partner through the full spectrum of maritime capabilities from disaster relief to meeting aggression.



## Notes

- 1 Vice Admiral Mark Fox, USN, Commander Navy Central Command, Commander US Fifth Fleet and Commander Combined Maritime Forces was to speak at the conference, but had to withdraw at the last minute due to Iranian threats to close the Strait of Hormuz.

# The Role of Sea Power in the 21st Century

Andrew Davies

In taking on this modestly titled topic, I am going to say some things today that I think many of you will disagree with. That is fine with me - disagreement is the basis of robust argument. But I do hope to provoke some thought. I have been trying to understand the working concepts of sea power and how they might be applied in the Asia-Pacific region, and I have to say that I am often left scratching my head. Of course, there are several competing explanations for the shortfall in my understanding, but I think I have at least identified the reasons for my difficulty. Again, you may disagree and propose a simpler explanation for my shortfall.

One of the problems, I think, in formulating a strategy for the use of the sea in the 21st century, is that it is not a novel idea. Sea power as we understand it today has been so successfully applied for so long that I think many of its current practitioners and theorists have forgotten that it had to be invented in the first place. And with that comes the risk that past success will translate into future strategy without sufficient thought.

Even the most perceptive of writers on the subject have a tendency to fall into the trap of elevating discussions of sea power into the realm of theology. So it was that Admiral Mahan was able to write with a straight face that the considerations and principles of sea power 'belong to the unchangeable, or unchanging, order of things'.

The phrasing here is appropriate for the discussion of a law of nature. Well, it happens that laws of nature are something that I am professionally qualified to talk about. This is what a law of nature looks like:

$$V = - \frac{\partial \Phi_B}{\partial t}$$

It is Faraday's law of electromagnetic induction for the voltage around a wire loop in a changing magnetic field. But the point is that the equation contains quantities that are generated by the forces and particles that make up the universe - they are dispassionate and unchanging. Faraday's law works the same way at any place and at any time. Sea power is not like that. It is a construct by human beings, it is technology dependent, and in times of conflict the adversary gets a vote.

Historian Paul Kennedy understood well the difference between laws of nature and strategies developed for particular circumstances. In the introduction to his classic book *The Rise and Fall of British Naval Mastery* he wrote:

although Mahan conceived of his underlying principles as being generally applicable, and although he became famous because his readership assumed that the lessons he drew from the past would be valid for the present and the future, it is worth making one basic comment ... upon his entire philosophy; it was to a very great degree *inductive*, that is, it was drawn from an examination of a particular historical period and a set of circumstances which he then presumed would be valid for the present and the future as well.

Mahan's logical induction is very different to Faraday's electromagnetic induction. Fundamental symmetries in the laws of nature ensure that Faraday was right yesterday and will be right tomorrow. There are no such guarantees for Mahan. Nonetheless, Mahan's ideas continue to permeate the development of sea power today - and not just in the western world. I think Mahan would nod approvingly at the apparent Chinese 'string of pearls' strategy, just as he would see nothing amiss in the frequency with which the term 'sea lines of communication' is used by contemporary writers.

I said before that laws of nature are valid at all times and all places. That is true, but with a qualification. We are not actually privy to the ultimate laws of nature - instead scientists employ working hypotheses that are true until proven otherwise. Faraday's law works really well for loops of thin wire but if you move beyond that specific case you need something that covers the new circumstances.

What I want to do today is take a 'first principles' look at sea power in the modern world. I am going to provisionally put aside the views of Mahan and his descendants. That is not to say that I think that I see no value in the established models of sea power - there are bound to be regimes in which they work just fine - as is the case with Faraday's law. But my working assumption is that they need to prove themselves to be the right prescriptions for the future in the circumstances we are likely to face. In essence, I am allowing for the possibility that Mahan's sea power might be an analogue of Faraday's thin wires, and that the modern world constitutes a new regime where the old rules no longer apply. I am going to suggest two critical factors in the modern world that I think are especially problematic for the traditional conception of sea power in our part of the world, both of which are - in my view - being given insufficient thought by those developing defence policy.

## Sea Power

Before turning to those factors, let me digress and say a few words about sea power and my reading of contemporary discussions.

Let me start with a simple observation - sea power is not an end in itself. I say that because I had the experience in London in 2010 of sitting through two days of discussion about sea power just after details of the British Defence Strategic Review came out. More than a few speakers' positions could be accurately summarised as

‘but sea power is what we do and who we are’ rather than a hard-headed assessment of the likely security situation and available resources. Fair enough at one level - after all, there was a time when Britannia ruled the waves. But time moves on and this was just another reminder of the pseudo-theological traps lying in wait for those who are inclined to see the last 400 years as a template for the future rather than a just another chapter in the roll out of history.

Happily, RAN doctrine is more concerned with outcomes than with an abstract notion of national identity. It observes that the value of maritime operations comes from ‘the use of the sea for movement and not from possession of the sea itself’. So our discussion of sea power can be pared back to the ultimate end uses of the sea. Of those, the main ones I want to discuss, both of which are primary concerns of naval strategists, are the application of naval power for political ends - for our purposes today the most relevant political end is the preservation of the current international order with the United States as the lead - and the notion of sea lines of communication, or SLOC. And, of course, the flip-side of those are, respectively, defence against someone else’s use of naval power for political ends and the disruption of an adversary’s SLOC by the interdiction of shipping or some other means.

Let me begin with SLOC and particularly to their protection. I will come back to ‘naval power for policy ends’ later. The protection of sea lines of communication applies to both naval support for military operations and to the protection of commercial shipping. In the case of military operations the concept makes good sense - provided it’s admitted that it is physical ships rather than abstract ‘sea lines’ that are being protected (as has always been the case). In all but the largest operations the resupply of forward-deployed forces can be achieved through the movement of a relatively small number of vessels, which can be shepherded through potentially hostile waters by accompanying warships and/or escorting air cover, range permitting.

In a theatre without land bridges, the sea remains the most efficient way - or even the only feasible way - of delivering and resupplying land forces on a large scale. That is arguably an enduring fact, one of Mahan’s ‘unchanging order of things’. In the Asia-Pacific region, naval forces are required for the deployment and sustainment of any sizeable land force.

As the operation unfolds, it will first be necessary to be able to exert local sea control to achieve freedom of action to manoeuvre and deploy. Then any vessels using the sea lines of communication necessary to sustain the forces need to be protected for the duration of the deployment. The sophistication, tactics and firepower of opposing forces play an important role in determining the resources required to successfully complete the mission. Dili Harbour in East Timor in 1999 presented a much lower level of risk than Port Stanley in the Falkland Islands in 1982, which - as serious as that was - was less challenging than Okinawa in 1945.

Let me digress for a moment to throw out another thought. I have said in the past - and was hardly the first one to do so - that emerging anti-shipping weapons threaten the viability of surface fleets in hotly-contested circumstances. Others take the contrary view - and there are several writers here today who have done so - and who argue that fleets have heard premature announcements of their demise in the past and yet have still managed to get the job done when required.

And that is true. But, again, the fact that there has been a backwards and forwards in the arms race between ship-borne defences and anti-shipping weapons might be a technological happenstance. I certainly do not see it as a law of nature. In fact, the only verities I see argue in my favour. Surface ships are large, slow, confined to a two-dimensional surface, limited in their ability to replenish their weapons and relatively expensive. Attacking weapons can be relatively small, relatively fast, manoeuvrable in three dimensions, relatively cheap and can usually be reloaded quickly. It is possible that a threshold will be reached where the ships irrevocably lose their ability to compete. An argument that runs 'this has been said before and proved not to be true' is no proof against future changes. No doubt the demise of cavalry was prematurely announced, but that did not save it in the long run, and the same can be said of the battleship - once the mainstay of sea power.

Enough of my digression - I really put that in to make sure that everyone has something to dislike in this talk. Let me turn to the first of the 21st-century factors that make me think that the application of modern sea power will necessarily be different from the past.

## Globalisation

I argued above that protection of SLOC in support of military operations is necessary and - at least for now - possible given enough oomph in the fleet compared to a potential adversary. However, when the concept of securing sea lines is applied to commercial shipping it becomes much more problematic. I am not creating a strawman here. I could cite dozens of examples of the security of Australia's seaborne trade being invoked as an argument for a strong navy, just as China's 'string of pearls' is usually discussed in terms securing energy supplies.

In the past, protection of trade was a reasonable enough proposition. Trade with distant colonies was a vital concern of sea power - one of the reasons it was invented in its modern form. And it is worth noting that the profits from that trade could be enormous multiples of the investment required. Losing a few ships to pirates or raiders from other countries could be tolerated given the big margins. But today that model has been largely dismantled; the second half of the 20th century saw much of the world decolonised. Today trade is conducted in a truly global marketplace. Contracts for supply can be signed between pretty much any pair of trading nations, and a higher proportion of commerce is international. The resulting competitive pressures have driven profit margins right down - to the point where a ship or two could make the difference between economic success and failure.

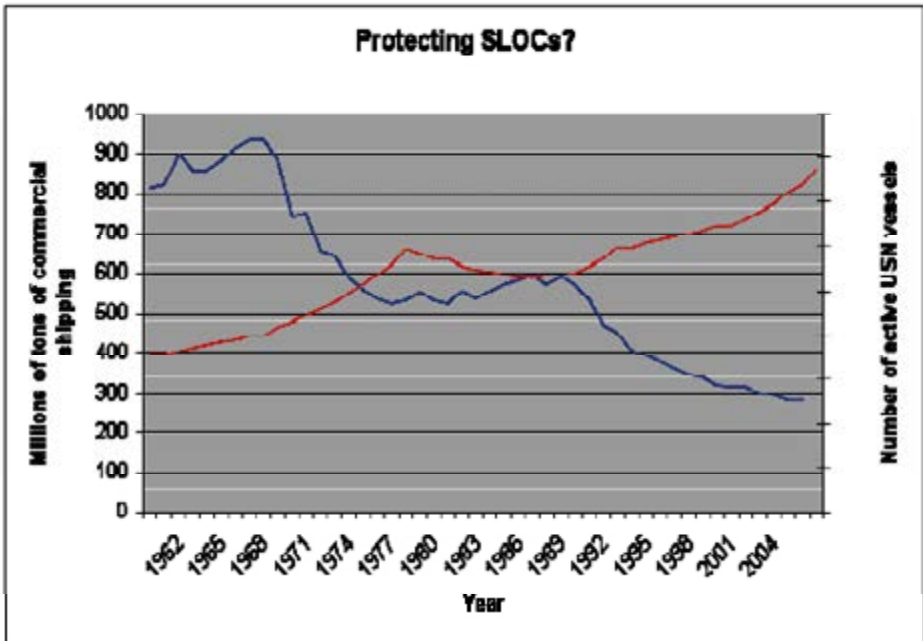


Figure 1: Tonnage of commercial vessels on Lloyd's register of shipping (red) and the number of active vessels in the US Navy (blue).

Associated with that has been a dramatic change in the scale of world shipping, with merchant vessels much more numerous and larger than ever before. At the same time, the navies of the western world have steadily declined in size. For example, in 1960 the US Navy had 800 major vessels; today it has well under 300. This figure shows in red the growth in commercial traffic since 1960 and in blue the size of the US Navy.

The US Navy is not alone in its decline - over the same period the Royal Navy reduced in size from 234 major combatants to less than 40, including a decline from 8 aircraft carriers to 1. The conclusion that follows from these observations is that, for the most part, the navies of the world cannot hope to protect more than a tiny fraction of the world's commercial traffic in the traditional sense of escorting convoys - there is simply so much of it that the task is beyond even the most powerful coalition of navies.

However, it is important to note that the converse does not apply; the disruption of commerce through the interdiction of shipping is relatively easy; only a fraction of shipping needs to be seriously threatened or subject to attack to raise risks across the board. The globalised nature of commercial interests does the

rest. The navies of major powers could seriously disrupt global trade activity - and more likely bring it to a screeching halt - by their actions at sea, but they cannot ensure it.

Rather than attempting to escort large numbers of vulnerable vessels, the only viable strategies would be to either directly target the adversary's ability to interdict shipping or to otherwise impose sufficient costs on an adversary to make it not worth their while to persist in disrupting trade. This has consequences for force structure. Surface combatants, for example, have a reduced role to play, while strike assets in the form of air power and submarines have a larger role. (Of course, aircraft carriers and nuclear submarines greatly enhance both of those capabilities.)

## Cold War lessons

The United States is developing a military strategy intended to keep American hard power pre-eminent in the western Pacific Ocean, intended to support the political goal of sustaining the current set of international norms and behaviours. This largely naval strategy will in no small way define sea power in the Asia-Pacific region. However, a confounding variable is the fact that the status quo power and the rising power are both nuclear weapons states. Any strategy based on conventional weapons has to take that into account.

Again, this is a major fundamental dislocation compared to the earlier history of modern sea power. The jostling for position as the major naval power of the day among the colonial powers of Britain, France, the Netherlands and Spain - and later the United States - never involved mutually assured nuclear destruction.

Of course, the Cold War did. And provided we are careful to isolate the salient points, it has much to teach us. To foreshadow a little, we should note that the potential of escalation up to an intercontinental nuclear exchange had the effect of making the navies on each side very careful to avoid unnecessary provocation, at least after the Cuban missile crisis of 1963. The Incidents at Sea agreement would not have been necessary without the shadow of inter-continental ballistic missiles falling across the arena. There are some lessons we need to re-learn.

Even so, the developing power shift and increasingly adversarial stance of America and China is very different to the Soviet-US schism that followed World War II. For our purposes, the environmental differences are the most important. The Cold War saw two armies toe-to-toe in Germany and the potential conflict was really about who would occupy and control western Europe. Similarly, in Asia the game was to contain the spread of Communism by supporting friendly regimes against insurgencies, infiltration and sometimes invasion by outside forces. Naval forces were important during the Cold War, both in terms of the submarine contribution to the nuclear balance and in terms of resupplying and supporting land forces, but ultimately they were secondary to the question of territorial control of Eurasian territory.

The 21st century is very different. There is a high level of economic integration between China and the United States - thanks to globalisation - and their political differences are not the source of Cold War style geopolitical competition for territory. Any future conflict here is more likely to be about pre-eminence in the setting of the norms of behaviour in the international order than occupation of territory. This makes the situation both more subtle and more complex. Stopping the other guy's soldiers from parading on your turf is conceptually simple, if a bit ugly close up. Getting a disparate group of countries, which often have conflicting interests, to agree to play by your rules rather than the other guy's requires a much more multi-dimensional and nuanced strategy.

## AirSea Battle

This brings us to the emerging AirSea battle concept now coming out of the United States. Obviously modelled on the old AirLand battle concept developed for the Cold War theatre of Europe, this strategy has not been fully articulated yet, but it appears to involve the coordinated use of air and naval forces with the aim of countering the developing ability of some countries (which in our neck of the woods means China) to conduct anti-access and area denial operations.

Incidentally, I note in passing that the mere existence of the AirSea battle concept adds weight to the proposition I put before regarding the prospect of anti-shipping technologies seriously threatening the ability of surface fleets to take the fight to the enemy. I do not think it is too big a stretch to see this as an admission that, at the very least, the risk of operating surface combatants in contested waters is growing.

Exactly how AirSea battle will work is not entirely clear. But there are indications that the thinking behind it includes:

- the hardening of US bases in Northeast Asia
- credibly threatening to strike critical military targets deep within Chinese territory from afar
- defeating Chinese air and sea forces in a sustained conventional campaign
- the capability to impose a distant blockade on China in the event of war
- a tight integration of key allies such as Japan and Australia, with a concomitant greater rate of effort on their behalf.

What is almost certain is that most of the action is going to be at sea. The West's experience with Asian land wars makes this both understandable and unlikely to change. Naval forces will play a critical role in any major conflict in the western Pacific Ocean. But I do not think that we have adequately thought through how they



can realistically and credibly be employed given the risks inherent in a theatre where the difference in conventional power is narrowing and the major powers have nuclear weapons.

Unlike armies sitting on opposite sides of well-defined borders, navies manoeuvre in shared and sometimes contested spaces, raising the likelihood of unintentional clashes and increasing the opportunities for provocation. This is especially true when there is disagreement about the norms of behaviour in those spaces - an important part of working out whose order is going to take precedence. We have already seen some of these problems in the South China Sea and the airspace above it.

The notion of a naval blockade needs much more thought. Even putting aside the historical note that restricting a rising north Asian power's energy supplies did not end well last time, bear in mind the globalisation I discussed earlier. Any blockade is likely to cause significant disruption to everyone's trade, but if the situation escalates in retaliation in kind, the impact could be dramatic. The best that could be hoped for in those circumstances would be a collapse of the global economy on a scale that dwarfed the recent recession that began in 2008.

The mechanics of blockade require careful thought, especially the managing of escalation. The Cuban blockade was arguably the most dangerous point of the Cold War. Of course, cool heads prevailed, and important lessons were learned. Lessons that we need to think about now before we relearn them the hard way. It is one thing to impose sanctions and board vessels heading towards minor or middling powers; it is another to intend to do so for the lifeline of a major power. It looks a bit like we - and I mean 'we' as part of ANZUS Alliance are stumbling into pre-1963 thinking while trying to formulate policy in response to a changing power balance.

For yet another digression, anyone who thinks an anti-shipping ballistic missile is a credibly useful weapon really needs to think through the potential consequences. When faced with a nuclear-armed adversary, what is the appropriate response to notification of an inbound ballistic missile? A similar caution applies to the blinding of C4ISR connectivity through the use of anti-satellite weapons. On both sides, military options are being developed without due regard for the broader political context and consequences.

Let me reiterate that these are preliminary thoughts, and I would be happy to discuss further if anyone is interested. The AirSea battle concept is a very important development that requires much more discussion - and the Australian Strategic Policy Institute will be doing exactly that in a few months' time.

## Conclusions

Let me sum up. Our notions of sea power are based on a long and glorious history. It is not an exaggeration to say that the prosperity of the modern world is based in no small part on successful exploitation of the sea and, at times, the ability to exert control of the sea by the use of force.

But that success runs the risk of blinding us to the special circumstances that once made it a viable grand strategy; a combination of technological superiority (or no worse than parity) over potential adversaries, the geopolitics of a colonised world and the manageable scale of international trade and the interdependencies that came with it, and the ability to wage pitched war at sea without the catastrophic consequences that would follow from any sort of nuclear exchange. All of this has now changed.

In many ways the thinking that seems to underpin the development of today's navies and military strategies ignores the profound changes due to globalisation and undervalues the 50-year-old lessons about nuclear arsenals and conventional conflicts.

Instead, there is almost a 'business as usual' approach to naval doctrine, and there are limited circumstances in which it will work. Iran can threaten to interrupt trade in the Strait of Hormuz, but it lacks the grunt to overcome the ability of the US Navy to intervene. Big navies can deliver a sound thrashing to small ones and put them back in their place, or interdict the shipping of weaker powers with few consequences.

However, in the Asia-Pacific region, we are only starting to work out how to deal with a power balance in which delivering a thrashing in some quarters is already much harder than it was, and it is only going to get tougher, and we are thinking about a potential clash with a nuclear armed opponent. I suggest that applying the same models of seapower to the 21st century that worked - albeit after a titanic struggle - in the second half of the 20th is not just intellectually lazy, but potentially dangerous.



# Sea Power and Security in the East and South China Seas

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*Alession Patalano*

One core feature sets the Asia-Pacific region apart from others that, throughout history, emerged to take the lead in international economic, political and military affairs. The heart of this regional system, stretching in its widest understanding from the shores of the Indian Ocean to those of the Sea of Japan, is made of salty water - not dry land. The highways that power the region's key economies, the grounds that offer precious living and non-living resources are blue, not green. It is therefore for the first time in history that at sea and from the sea the regional power balance is being reshaped. This chapter examines the role of the sea and of maritime forces in contributing to this shift. It sets out to ask two questions: how important is the sea as a structural feature in regional security dynamics, and in what ways will the use of the sea as a platform for the projection of power affect the evolution of regional security in the foreseeable future? In light of the continued military and naval modernisation of one of the key regional actors, China, this paper focuses on the interconnected maritime theatres of the East and South China seas to offer an answer.

This paper's argument is three-fold. First, it argues that in the international security of the Asia-Pacific, geography matters. From a structural point of view, sea power is crucial to regional security for the sea is the region's main connecting fabric. Not only the sea routes of the East and South China seas are the lifelines of regional economies, transporting goods for trade, energy, as well as other raw materials. They are today the main battleground where regional actors seek to exert national sovereign rights and to redefine national power and status. Territorial and maritime disputes are in both theatres the most evident examples of such a process.

The second component of this paper's argument is that the current emergence of tensions at sea in the East and South China seas is not necessarily a novelty. In the ages of the British and Japanese imperial systems, they represented an area where national goals were pursued by means of naval dominance to sustain wider economic orders and international trade. The main difference with the systems of the past is elsewhere. In the imperial orders established under British and Japanese rule, power structures and regional order rested on the shoulders of one major naval power. By contrast, today multiple state actors with different national agendas, uneven military power, and interdependent economies have replaced that uni-polar hierarchical system.

This leads to the third element of the argument. What really is new about the security of the East and South China seas is that for the first time, from ‘crossroads of imperial orders’ they have become a frontier for ‘interdependent nationalisms’. In a fashion similar to the age of the British and Japanese empires, sea power is going to play a crucial role in defining regional order. Within this context, maritime forces, with their inherent constabulary, diplomatic and military functions are to bound to be at the forefront of both competition on the one hand, and management of maritime security issues and regional stability on the other.<sup>1</sup> In this respect, this paper suggests that key state actors in the East and South China seas - notably China, the United States, Japan and Australia - should seek to prioritise practices and procedures for economic cooperation, and use these to defuse tensions and promote a more stable regional order.

### A Uniquely ‘Maritime’ Regional System

Is there anything ‘unique’ about East Asian security? This question attracted considerable attention in recent scholarly work on the international relations of East Asia. David Kang’s ground breaking study on the Chinese ‘tributary system’ led the way in seeking to offer an ‘Asian-centric’ understanding of regional security.<sup>2</sup> In essence, the traditional structure of the East Asian international system (before the arrival of western powers in the 17th century) was based on a hierarchical system with Imperial China at its centre and a group of ‘tributaries’, each with a particular position. In Kang’s view, a strong China brought stability to the system.<sup>3</sup> For this reason, today East Asian state actors are likely to follow a pattern of bandwagoning with China as the country rises to power. The current situation is a return to a system that existed long before Western powers arrived in Asia - he argued.<sup>4</sup>

Kang has certainly made a significant contribution to the debate on the evolving power balance in contemporary East Asia by investigating ‘systemic features’ that contribute to explain this region’s characteristics.<sup>5</sup> Yet, his analysis gave only limited attention to an even more fundamental systemic feature. In fact, I would argue that maritime geography is a key factor in East Asian international security. East Asia is structurally a ‘maritime system’, which is one in which the sea is central for the spread of ideas, for commercial opportunities and for the projection of military power and political influence at the regional level. This multi-layered cultural, economic and political impact is directly related to the four attributes of the sea itself.<sup>6</sup>

In particular, I draw upon the analysis by French historian Fernand Braudel who was among the first scholars to explore the notion of a ‘maritime Far East’. He focused on the region’s longstanding social, cultural and economic interactions to point out that since ancient times sea routes helped the formation of a network of interconnected seafaring communities across adjacent sea basins. Many of these basins were ‘small and shallow’, and functionally linked the littorals of Southeast

Asia to the shores of Northeast Asia by means of 'epicontinental seas, hemmed in by nearby land'. These semi-enclosed maritime spaces, including the South and East China seas, the Yellow Sea, the Sea of Japan, constituted a web of 'Mediterraneans', all 'surrounded by land and dotted with islands'. Within them, fishing was a vital activity that contributed to the flourishing of civilisation; across them, navigation was on a scale that favoured their use for trade and commerce.<sup>7</sup> Recent scholarship on the subject, further confirmed the considerable degree of economic and cultural connectivity that existed among the various communities living along the littorals of Southeast and East Asia.<sup>8</sup> Further proof of this was the phenomenon of piracy that, periodically, affected regional maritime communication especially in the Sea of Japan, the Yellow and the East China Sea.<sup>9</sup>

Braudel's idea of a maritime system holds true today. The East and South China seas have been essential to the industrial growth of regional economies, facilitating intra-regional exchanges as well as regional interdependence with the global economy.<sup>10</sup> The South China Sea alone is estimated to deliver some US\$5.3 trillion in regional commerce, with two-way trade between ASEAN countries and China soaring from US\$8 billion in 1991 to US\$231 billion in 2008.<sup>11</sup> Along similar lines, US trade passing through the South China Sea annually is estimated at US\$1.2 trillion.<sup>12</sup> In 2009, the top 5 world trade routes originated in East Asia, accounting for more than a quarter of the total shipping traffic of the top 20 world maritime arteries.<sup>13</sup> In 2010, 7 of the world's top 10 container ports were in East Asia, with the port of Shanghai holding a firm first place, handling 29.07 million 20-foot equivalent units. By comparison, this is almost a third more than the total number handled by the first two non-Asian ports in the list, Dubai and Rotterdam, combined.<sup>14</sup>

Growing energy imports are the single most important reason for the sharp rise in regional traffic. Japan, the Republic of Korea and China account altogether for more than a quarter of the world's oil demand. For Japan, the import of energy resources is a longstanding feature of its economic outlook. As of 2010, imports of mineral fuels amounted to almost 30 per cent of Japan's total imports, with crude oil alone accounting for half of the energy share.<sup>15</sup> Northeast Asia is projected to become the largest oil market over the next few years with 94 per cent of it to be imported from the rest of the world.<sup>16</sup> China has and it is likely to continue to have the lion's share in terms of impact on energy imports. In 2003, China overtook Japan as the largest Asian oil importer and the second largest in the world. Consumption of oil went from 88 million tons in 1980 to 368 million tons in 2007.<sup>17</sup> In 2008, Chinese oil imports rose to 941,342 barrels per day, with a 3.76 per cent increase in total consumption compared to 2007.<sup>18</sup> According to recent reports, in 2011, China imported 6 per cent more crude oil than in 2010.<sup>19</sup>

The East and South China seas are not only crucial areas for the transit of energy resources. The seabed in the basins is considered to contain vast untapped reserves of hydrocarbon resources that would be invaluable to countries like China, Japan, and the Republic of Korea with heavy energy demands.<sup>20</sup> The South China Sea is

often regarded by media analysts, especially in China, as the 'new Persian Gulf', estimating the presence of oil resources equal to a value between 105 and 213 billion barrels.<sup>21</sup> In the East China Sea, Japanese and Chinese research teams estimated gas reserves in the range of 175 trillion to 210 trillion cubic feet in volume. Chinese exploration of the Xihu Trough indicated 'proven and probable' gas reserves for some 17.5 trillion cubic feet, whilst the Chun Xiao reserves are estimated to be about 1.8 trillion cubic feet. In terms of oil, the Okinawan Trough is believed to possess the richest concentration of petroleum deposits, though these are made less accessible by the depth of the Trough. Whilst data about the actual reserves in the East and South China seas are far from globally accepted, what is certain is that a large part of resources is located in the proximity of highly contested maritime areas. In the South China Sea, the Reed Bank and associated banks in the Spratly Islands are considered promising areas with significant quantities of oil and natural gas. In the East China Sea, the seabed around the Senkaku/Diaoyu Islands is similarly rich in petroleum deposits, estimated by the Japanese Ministry of Foreign Affairs to be well over 94.5 billion barrels.<sup>22</sup>

The question of the East and South China seas as key mediums for the transportation of goods and providers of natural resources leads to one last consideration on the maritime nature of the East Asian system. Unlike continental systems, where the process of territorialisation of space is as old as nation states themselves, territorialisation at sea is a very recent phenomenon. One example is probably helpful to make this point. According to a popular legend, when Romulus decided to create a new city, he ploughed a furrow around the Palatine Hill in order to mark its boundaries. Shortly after, Rome was borne. At sea, this just does not happen and it never did. For centuries, the freedom of the seas was the core notion that applied to the maritime realm. Whilst this is perhaps an obvious point to many maritime specialists, it is nonetheless an important one since it gives a degree of perspective on the political significance of the animosities concerning the territorial claims of the past few years in the East and South China seas.

Such disputes are in fact the result of the processes of 'territorialisation' of the maritime realm prompted by the *United Nations Convention on the Law of the Sea 1982* (LOSC). LOSC is a relatively recent international agreement - originally concluded in 1982 - that came into force in 1994 with the aim to empower littoral states with the right to manage and exploit maritime spaces adjacent to their coasts. LOSC extended a coastal state's territorial waters from 3 to 12nm from their baseline along the coast. It established an exclusive economic zone that extended from the edge of the territorial sea out to 200nm from the baseline. It similarly defined a state's continental shelf as the natural prolongation of a state's land territory to the continental margin's outer edge.<sup>23</sup> In the East and South China seas, the application of these definitions is proving problematic with territorial disputes focusing on both issues of sovereignty of groups of offshore islands and of definitions of boundaries.<sup>24</sup> The key point is that the emergence of LOSC almost overlapped with the wider

processes of political emergence and consolidation and economic development of the majority of the littoral states along the East and South China seas. This convergence of circumstances contributed to make the question of the definition of maritime frontiers a synonym for political, economic and international affirmation of regional nation states. After all, territorial disputes are directly related to the most vital of national interests - sovereignty.

## Sea Power and the 'Imperial Orders' in the East and South China Seas

In a maritime system, it is therefore only to be expected to see maritime forces engaged in interaction and indeed, seldom a week goes by without news reports pointing the spotlight to maritime events in the East and South China seas. Nor is it new in these two theatres. History offers clear examples of how naval (and later air) capabilities regulated regional order in two ways. On the one hand, the semi-enclosed nature of the basins and the connection to extensive riverine networks enabled hegemonic powers to use maritime forces in constabulary and diplomatic functions to exert considerable political influence. On the other, maritime power projection capabilities - combined in the 20th century with land-based maritime air power - enabled state actors to challenge established regional orders.<sup>25</sup>

Insofar as the first consideration is concerned, the way the British controlled this part of the world is a case in point. From the end of the 16th century and until the first half of the 19th century, the East and South China seas slowly evolved into a focal point for the transit of international commerce. Its primary users came pre-eminently from the Dutch, Spanish, Portuguese, French and British empires. By the second half of the 19th century, the South China Sea had a core strategic value within the wider context of the shipping routes connecting London, Singapore and Hong Kong. One study underscored the magnitude of this trade connection noting that by the 1820s 'Britain was drinking some thirty million pounds of tea a year' that was ferried across those waters.<sup>26</sup> In a fashion not too dissimilar from today, naval forces operating in this theatre had to possess considerable flexibility in order to cover the large array of duties, from policing activities in China to conventional war against a maritime power, to be performed in riverine as well as coastal and open waters. Naval deterrence and, failing that, coercion, were the main tools for the implementation of British imperial policy in East Asia.<sup>27</sup>

At the beginning of the 20th century, Vice Admiral Cyprian Bridge drew planners' attention in London to this subject. As the commanding officer of the China Station with considerable experience in East Asia, Bridge pointed out that it was not necessary for warships serving in Chinese waters to be of 'great size and very high speed'. Rather, he thought that



6 or 7 steamers like those which trade regularly to Tientsin and even to Ichang - real sea-going vessels drawing less than 11 feet, with an effective ocean speed of more than 10 knots ... should be in a better position to meet almost certain requirements than we are now.<sup>28</sup>

Cruisers of large size - he further contended - represented a statement of British military power and strategic commitment to the area vis-à-vis other powers and therefore, needed to appear in those waters on a regular basis. Nonetheless conventional war in the South China Sea would unlikely put their qualities to maximum effect.<sup>29</sup>

In the East China Sea, attempts of western encroachment during the second half of the 19th century were contained by the emergence of the Empire of Japan and of its naval power. As one Japanese diplomat put it, with its location at the eastern edge of the Eurasian continent, Japan mirrored Britain's position in Europe. As an island nation, this meant that the development of naval capabilities was essential to Japan's ability to protect its economic interests. In particular, Japanese economic growth would have benefited from developing economic and defence policies complementary to those of Britain, exploiting maritime communications at the regional level to feed its population and to access resources and markets. In turn, this elevated the importance of Japan to British strategy in East Asia. The archipelago was 'the key to the Pacific', according to an English-educated Japanese observer.

If the Kiushiu, the Loo Choo (Ryukyu Islands, ndr.), and the Miyako Islands are well looked after by the Japanese fleet from Sasebo naval station ... the San Francisco - Hong Kong route would be injured, and Shanghai - Port Hamilton line would be threatened.<sup>30</sup>

The emergence of Japan as a regional power in the 20th century is a strong reminder of one crucial characteristic that underpinned British supremacy in the East Asia, the lack of serious competitors. In the aftermath of the victories over China (1894-95) and the Russia (1904-05), Japan rose to the status of prominent naval power in Asian waters, controlling the vital point of connection between the East and the South China seas with the annexation of Taiwan (Formosa). Over the subsequent three decades, these areas became part of Japan's economic network as well as a theatre of potentially significant strategic value, the latter consideration being true especially for the Imperial Japanese Navy.<sup>31</sup> From a strategic viewpoint, the notion of an expansion of the empire towards the resource-rich areas of Southeast Asia, also known as southern advance (*nanshin-ron*), was originally developed in relation to the economic penetration of the area. Eventually, it became the navy's attempt to set forth an alternative strategy to the army's 'northern advance' (*hokushin-ron*) on the Asian continent.<sup>32</sup>

By the time World War II broke out in Europe, Japan had mustered sufficient military capabilities to launch an all-out offensive against the remaining components of European empires in the East and South China seas. The main objective was to create a new Asian order, a 'Greater East Asia Co-Prosperty Sphere', with Japan at its centre. The East and South China seas had a vital strategic significance in propelling the Japanese war economy. Only in 1942, Japan managed to recover 70 per cent of the East Indies pre-war production rate of 180,000 barrels per day to sustain its operations. Yet, whilst its naval capabilities were sufficient to bring Japan a vast Empire, they were inadequate to sustain it.

At sea, the Japanese Empire had its Achilles heel, and the Allied forces set out to exploit this weakness. By the end of 1943, Japan had already lost over 2 million tons of shipping suffering a 3 million-ton shortfall in bulk commodities compared to the previous year. The situation worsened dramatically in 1944 and 1945, when Japanese oil imports fell from a 1943 peak of 740,000 tons to a meagre 178,000 tons (third quarter of 1944), with just 9 per cent of oil shipments from Southeast Asia reaching their final destination in Japan in 1945.<sup>33</sup> In less than two years, the East and South China seas went from being a Japanese lake to a graveyard of critical raw materials. In these maritime basins, submarine-centred 'wolf-packs' tactics first and, carrier air strikes subsequently, put in motion the process that led the Allied forces to acquire battle space superiority.<sup>34</sup>

With the Japanese control over the East and South China seas drawing to a close, these theatres ceased to be part of a wider 'imperial system'. On the contrary, the Japanese assault on European imperial outposts in East Asia set in motion a process of decolonisation that catapulted the East and South China seas into a new regional order. Sea power had been central to the making, the management, the transformation, and eventually, the demise of modern imperial orders in East Asia.

### Sea Power and the East and South China Seas in the Age of 'Interdependent Nationalisms'

In the East and South China seas, the vanishing of foreign colonial rule delineated 'national' boundaries, but those were much better defined on land than at sea. Provided the political reconfiguration of regional space, this lack of clear borders failed to provide what geopolitics experts defined as an adequate 'physical and cultural separation of one sovereign state from another'.<sup>35</sup> At sea, this meant in many cases that imperial and colonial history had to be reviewed and rewritten to serve the interests of the new nation states. Island features were physically occupied to substantiate territorial claims and define national boundaries at sea. This represented the real novelty within the power balance distribution of these two theatres. Between the second half of the 1950s and the end of the 1980s, The Philippines, Vietnam (especially after its reunification in 1975) and Malaysia pursued assertive policies with the goal of forcing a new *status quo* that would limit the options of other neighbouring countries. With the exception of Brunei, it is

reported that today, all other claimant states occupy island features in the Paracels and Spratlys. Vietnam occupies 21 features, the Philippines 9, China 7, Malaysia 5 and Taiwan 1.<sup>36</sup>

In the East and South China seas of post-imperial age, the presence of a regional naval power that ruled these waters had not disappeared though. The United States had emerged from the war as an Asia-Pacific power, with naval bases both in Northeast and Southeast Asia. This part of the world was to become one of the frontlines of the Cold War, and two intense conflicts on the Korean Peninsula and in Vietnam proved this point. Sea control in the East and South China seas was instrumental to sustain both American war efforts and to implement the Cold War strategy in East Asia.<sup>37</sup> The main difference was that the American naval presence was not the function of an imperial mission in the way British and Japanese forces had been.<sup>38</sup> In particular, insofar as the status of the sovereignty and the boundaries of the littoral states were concerned, the United States sought to maintain a neutral position and supported peaceful solutions, though with some caveats in the case of security allies like Japan.<sup>39</sup>

By the time LOSC was signed and the new international maritime regime started being implemented, the occupants of the islands had created a *fait accompli* in which 'their removal by anything short of military force (became) unlikely'.<sup>40</sup> Nonetheless, LOSC provided previously unavailable legal ammunition to charge territorial and border issues in the East and South China seas of a political value whereby each line drawn was seen as a statement to legitimate a nation's status and sovereign independence. In most cases, the disputes were (and are) of two types, territorial - revolving around issues of possession of island features, and of border delimitation - to define the maritime sovereignty and exclusive rights of the different littoral states in relation to particular parts of the East and South China seas known as exclusive economic zones.<sup>41</sup> Overlapping claims by China, Taiwan, Brunei, Malaysia, Vietnam and The Philippines over the Spratly and Paracel Islands, by China and Japan over the Senkaku/Diaoyudao Islands, and by Japan and the Republic of Korea over Dokdo/Takeshima Islands offered examples of the former type of dispute. Chinese (and Taiwanese) 'historical claims' for a large 'u-shaped area' of the South China Sea, the May 2009 joint Malaysia-Vietnam and the April Philippines submissions to the Commission on the Limits of the Continental Shelf, or for the Chinese use of the continental shelf as a parameter to define its exclusive economic zone in the East China Sea are examples of the latter type. The main difference between the two consisted on the fact that maritime sovereignty is weaker than territorial sovereignty for states must permit vessels from other countries freedom of passage and transit in their exclusive economic zone (apart from internal waters).

Notwithstanding this distinction, the political implications of territorial and maritime disputes made interactions in the East and South China seas a very controversial affair. Coastal states pro-actively sought to make a point to exercise their sovereign authority by means of maritime forces. The April 2012 standoff

over Bajo de Masinloc/Scarborough Shoal that witnessed the Philippines and China deploying maritime vessels to support their claims is the last of a long list of incidents. The presence of Chinese fishing vessels in a lagoon at the shoal located 124nm from the nearest coast of Luzon prompted the arrival of the Philippines largest warship - a former US Coast Guard cutter, which in turn generated the deployment of Chinese maritime surveillance ships to escort the fishing vessels.<sup>42</sup> The Philippines considered that the deployment complied with the requirements of the country's domestic legislation, whilst the *People's Daily* regarded the action as a serious violation of Chinese sovereignty.<sup>43</sup>

This last incident offers a clear reminder of the fundamental role that sea power plays in asserting national jurisdictional rights and power. Patrolling activities with the consequent inspection and/or seizing of fishing boats and crews found in the contested spaces is common currency in the East and South China seas. From 2005 to 2010, China stepped up the patrolling activities and the frequency with which foreign fishing vessels were seized, a sign that informed observers consider the result of the strengthening of the country's constabulary forces and maritime enforcement agencies. This is an important point since in the exclusive economic zone, the Chinese navy competes in its functions with five agencies - the China Coast Guard, the Maritime Safety Administration, the China Marine Surveillance, the General Administration of Customs, and the Fisheries Law Enforcement Command - all organisations seeking to prove the relevance of their roles.<sup>44</sup> In the South China Sea, Chinese vessels detained Vietnamese trawlers in waters near the Paracels in December 2009, March and April 2010.<sup>45</sup> In 2009, one Vietnamese source estimated that 17 vessels and 210 fishermen had been detained and eventually released.<sup>46</sup> In April 2010, two patrol vessels from the Fisheries Law Enforcement Command, *Yuzheng 311* and *Yuzheng 202*, were dispatched from Hainan to escort the country's fishing vessels. This represented the first time China has done so outside the usual period of unilateral ban in the sea between May and August.<sup>47</sup> In the East China Sea, similar incidents involved South Korean fishing vessels and Chinese maritime authorities, and most notably in September 2010, the collision between a Chinese fishing trawler and two Japan Coast Guard cutters.

A statement about the centrality of sea power to the ways in which littoral states in the East and South China seas interact with each other is equally important because it provides a context for the general 'maritime empowerment' of the Asia-Pacific region. For some time now, analysts suggested that the Asia-Pacific is entering a naval arms race which will have disastrous consequences for regional security. These considerations were prompted by increased spending, especially in China and across Southeast Asia. In the period 2005-09, states in Southeast Asia have been credited to prioritise investments and step-up military purchases 'dramatically'.<sup>48</sup> Investments in new military hardware displayed the traits of a regional 'arms race' in the sense that 'one country buys something and others react to it, then the first one may itself react in turn'. Yet, at a closer look, this wave of purchases was a sign

of persisting regional rivalries as much as one of recovery from the economic crisis that invested the region the second half of the 1990s and of long-needed military modernisation.<sup>49</sup> Regional naval capabilities have constantly been expanding over the past few years, and according to recent data released by SIPRI, East Asia is one of the most dynamic areas in terms of military investments.<sup>50</sup> The East and South China seas are essential spaces for economic growth as well as territorial security, and provided that three decades ago most of the littoral countries in this area had very limited capabilities, the current phase of naval build-up is in part a process of replacement of old capabilities to perform missions essential to national security.

In the East and South China seas, China stands out as the one regional actor that is undergoing the largest naval transformation.<sup>51</sup> Increased reliance on sea lanes for trade and energy resources, the uncompromising willingness to defend its territorial integrity, are all factors that scholars consider by have created a wider consensus for naval modernisation.<sup>52</sup> In all these narratives, the strategic importance of the East and South China seas to Chinese naval authorities is undisputed to the point that some authors have gone as far as to consider Chinese connection to the adjacent maritime theatres of the East and South China seas as engaging vital interests where 'dominant sea power' is an essential tool of statecraft.<sup>53</sup>

It is not in the interest of this paper to review the much-debated military modernisation of the People's Liberation Army Navy. Suffice to say that this is a far-reaching phenomenon, encompassing all aspects of naval capabilities. The introduction of *Kilo* class submarines, of the domestic-produced Yuan class, the development of anti-ship cruise missile and anti-ship ballistic missile programs, of shipboard area air defence systems, and the introduction of modern missile guided destroyers including four *Sovremenny* destroyers from Russia, are regarded as the cornerstone of a strategy of robust sea denial, also known as anti-access/area denial strategy, as it continues towards its modernisation and procurement of enhanced capabilities.<sup>54</sup> These capabilities are complemented by a well-maintained force of more than 200 patrol and coastal combatants, including the *Houbei* class of guided missile patrol craft, and almost 1470 vessels belonging to various enforcement agencies.<sup>55</sup> These would represent of the dragon's 'teeth' in the littorals of the East and South China seas and perhaps, beyond them.

In all, in the post-imperial age of the East and South China seas, it is undeniable that the political reconfiguration of the regional landscape brought about a major reconfiguration of military power and maritime forces stand at the very centre of this process. What is important to note is that the build-up of maritime capabilities was pre-eminently - but not exclusively - a function of the willingness of littoral states to affirm their sovereign rights in the previously ill-defined spaces of the East and South China seas basins. For all the littoral countries involved in the territorial and maritime disputes the possession of island features and the question of the access to and exploitation of the economic opportunities offered by the bodies of water of the East and South China seas are a matter of crucial national security.

## Conclusions

Based on the above considerations, what are the prospects for regional security in the East and South China seas? One of the keys to answer this question is 'interdependence'. Beyond matters of territorial ownership and of rights to exploit marine resources, the actual use and management of the East and South China seas in all its attributes - from medium for navigation to source of primary resources - is and will be instrumental to favour a more stable regional security environment. In the South China Sea - where tensions have gone through ups and downs lately - the implementation of the *Declaration on the Conduct of Parties in the South China Sea 2002* witnessed some positive developments. In July 2011, China and the members of ASEAN agreed to implement it and reaffirmed their commitment to the exercise of self-restraint. Along similar lines in January 2012, the *People's Daily* called for 'pragmatic cooperation' and 'concrete results'.<sup>56</sup>

In the East China Sea, similar positive developments in Sino-Japanese disputes took place. In January 2012, the visit by several members of the Ishigaki municipal assembly - the town holding administrative responsibility for the Senkaku/Diaoyu Islands - to the islands generated strong protests among Chinese activities but did not bring about further escalation.<sup>57</sup> As one informed observer remarked, the formal agreement reached during the December 2011 visit of Prime Minister Noda Yoshihiko to Beijing concerning the establishment of a maritime crisis management mechanism had a lot to do with the ability of the two governments to pursue 'pragmatic cooperation'.<sup>58</sup>

Based on these latest developments, it seems therefore appropriate to conclude where the chapter started. In a maritime system, the sea has centre stage - and interactions happen on a constant daily basis, covering all sorts of activities. For this reason, in the East and South China seas, tensions and accidents, are all expressions of different political ambitions and common economic opportunities, are likely to continue in the near future. Whether an environmental issue, the isolated act of a dissatisfied fisherman, or a flotilla sailing through a contested area, different realities co-exist at the same time in these two maritime basins. Yet, each of those acts has different political value - the individual acts of a drunken fisherman hitting a coastguard cutter is different from the provocation of a helicopter flying close to a foreign warship.

This leads to another consideration. In a context where hegemonic orders of imperial flavour have been replaced by interdependent forms of nationalism following the decolonisation process and civil wars in East Asia, what is the role of non-coastal states in the East and South China seas? This is a crucial question since these two theatres are at the centre of one of the most vital parts of the global economic. Countries like the United States, Australia, and to a growing degree, India, have all crucial stakes in the stability of the East and South China seas. As actors geographically positioned at the extremities of these basins they can exert

considerable influence - but their role has to be presented as part of an attempt to address issues that concern all stakeholders trans-nationally. Again, the question is that issues of sovereignty connected to territorial disputes are different from those of access and management of the maritime space. The establishment of joint partnerships to exploit and manage resources, as well as the creation of a common understanding of procedures and practices at sea are, in this sense, sensitive steps towards the creation of a more stable security environment.

In relation to this point, one question that deserves a separate treatment is the role of the United States. As a result of its naval bases in Japan, the United States is an East China Sea power. Even official Chinese statements acknowledge this. By the same token, it is not a South China Sea power. This is not equal to say that the United States does not have important strategic interests in the region as US Secretary of State Hilary Clinton recently stressed. However, it does mean that its actions in these two theatres are perceived differently, especially from China - the only coastal state in the East and South China seas, with territorial disputes in both basins. According to some analysts, American military presence has a crucial role in the stability of the East China Sea disputes between China and Japan. In the South China Sea disputes, the role of the United States is more complex and American officials should consider this as they strengthen their presence and partnerships in the region, from the deployment of marines in Australia to that of warships in Singapore.

Provided the maritime nature of the regional system, retaining a degree of strategic flexibility seems a suitable way to offset the risks of escalating competition. In the East and South China seas, issues requiring greater cooperation co-exist with those that might bring about more aggressive national behaviours. In this respect, a combination of multilateral actions to create norms and procedures common to all stakeholders, combined with 'mini-lateral' initiatives - or tri-lateralism - might well offer the right mix. In all, the key to the stability of the East and South China seas will be how political actions will contribute to strike the balance between the cooperative and 'national' functions that all navies possess.

## Notes

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# Maintaining Good Order at Sea

*Norman Friedman*

This conference is largely about what navies do nearly all the time, when they are not fighting maritime parts of larger wars. They maintain the conditions that make it possible for the rest of us to use the sea. Increasingly that underlies our prosperity and even our existence. When this conference opened, you heard the Minister for Defence point out a new reality that much of the Australian economy now depends on an 'ore belt' in the under populated north. His responsibility to defend the nation includes the nation's economic underpinnings. He rather conventionally interpreted the new task presented by the new importance of the ore belt as one of territorial defence. Forces would have to be repositioned and new bases built. In fact, no matter what is or is not done, it would be difficult for an invader suddenly to seize a large part of the north. The undertaking would be so huge that there would probably be considerable warning.

The problem is really maritime in nature. Anyone interested in choking this country would not expend effort on the fixed resources of the north. It would be much easier to deal with the resources after they have come out of the ground, and before they get to market - by sea. The newly enhanced economic importance of the north translates into increased Australian dependence on the sea, because the resources have little economic value until they have been brought to market.

The message of 'good order' at sea is that the problem is not only an attacker seeking to choke this country, but also whatever happens in the seas through which the resources pass. For example, armed robbery at sea and piracy in Southeast Asian waters is hardly a national military threat, but it certainly is a threat to trade. Even if it only forces ships to take a more circuitous route to market, it adds to the price of resources brought from Australia. The profit margin on each shipment, as we heard, is thin enough that it might price Australian resources out of some markets. Alternatively, a serious threat to the ships might convince their owners to lay them up because they would not realise much of a profit per voyage. In either case, Australian ore trade offers any ill-wisher considerable leverage. That ill-wisher need not be a national entity, so protecting trade is much more than a simple wartime requirement.

The sea is more and more important to all of us, because more and more of what we export and what we use comes by sea. The message of globalisation is that a larger proportion of many goods come from places where they can be made most economically. That works because transportation - by sea - is inherently cheap. All of us benefit from the lower cost of much of what we buy. It is up to navies enforcing 'good order at sea' to make sure that nothing disrupts the global chain

of sea transport. Incidentally, this is not to sound the death knell of local industry. Despite all that cheap transportation, the bulk of what everyone uses still comes from close to home. Sea transportation does encourage countries to concentrate the most resources on what they can most efficiently produce - which is why the ore belt is becoming more and more important.

The sea is also increasingly a source of vital resources, partly because so much of what is on land has already been exploited. Only recently have really deep oil drilling and mineral extraction become possible. Fisheries are of course millennia old, although the technology of fishing keeps improving - to the point where part of maintaining good order at sea is to protect fisheries by dealing with poachers. Fish are so vital a part of the diet of much of mankind, particularly in South Asia, that this aspect of maintaining good order is a vital national interest for many countries. The question of who should have what access is exactly the kind of vexed one which causes problems to anyone trying to maintain any kind of maritime order. Some years ago a senior delegate to a seapower conference rejected the word poaching, which suggests small-scale criminal activity. He preferred to speak about food theft on a large scale, which he feared would starve his country.

The best-publicised threat to good order at sea is clearly piracy. That is why we see an international force operating off the Horn of Africa right now. On a statistical level, that piracy is more an irritation than a deadly threat to world trade, but it can grow. We expect to see more and more extraction of resources from beneath the sea, for example from deep water oil wells. Pirates seizing one tanker are bad enough, but what would we do if pirates seized a deep water oil platform? If they threatened to cause an environmental disaster which would destroy a fishery on which millions of people depend for their food?

Countries fighting near a strategic strait present a more immediate problem. During the Iran-Iraq War of the 1980s, both sides wanted to force the larger powers to intervene in their favour. They realised that the vital oil tanker route passing through the Arabian Gulf and the Strait of Hormuz offered leverage. The tankers were neutral, and under international law they should not have been involved in the fight. Without courts backed by police, laws are difficult to enforce, so it is understandable that neither combatant took international law - much of which is supposed to guarantee free use of the sea - terribly seriously. The Royal Navy and the US Navy solved the problem by operating in the Gulf. Tankers were re-flagged to justify their direct defence under US and international law. USS *Stark* was nearly sunk defending good order at sea, in the form of the freedom of neutral tankers from a war between other parties. It might be added that the attack on her was successful partly because her commanding officer apparently could not imagine that either warring party would attack a US warship and thus widen the war disastrously. He did not bank on the confusion of the situation.

If you look around the world, you can find many possibilities for conflict. By now it is a cliché that the colonial empires often split ethnic groups when they drew neat borders. With the end of the colonial empires, the same borders defined independent countries, but the ethnic splits remained, to become sources of conflict. Nationalism is alive and well as a reason for trying to break those boundaries, or even to seize new territories under the excuse of half-forgotten claims. Rampant poverty in many places does not help (it seems to be the reason for most Somali piracy). Nor does it help that many of the governments in strategic areas are impoverished (which means they have very limited maritime resources) and politically weak (so that they cannot enforce unpopular order at home).

The problem for navies is that the resources for enforcing good order at sea in a troubled peacetime are not necessarily those they need in war. Over the past decades the situation has become more difficult as increasingly sophisticated threats have forced up the cost of surface warships. Enforcement of good order generally requires numbers, because it requires presence. This is not unlike the need for police on the beat. After all, in effect a navy enforcing good order at sea is often a kind of maritime police force.

Certainly the goal in enforcing good order is to deter acts against that order. Seizing miscreants is a means to that end. It does little good unless potential miscreants decide that the odds of success are so poor that the game is no longer worthwhile. That applies equally to pirates, poachers, polluters, and smugglers, who are the usual subjects of good order at sea. In much the same way, to the average citizen the object of policing is to deter criminals from attacking. Arrests are a means to that end. If the chance of being arrested is high enough, of course, the problem is also addressed by removing many criminals from the street, but it seems unlikely that sufficient arrests can be made in a maritime context.

The best deterrent is to be present, so that no miscreant can hope to get away with his crime. What if that is impossible? The next best thing may be surveillance which is always present, and which is well advertised to potential miscreants. It has to be coupled with a credible means of reaction - with something that shows up quickly enough to catch the criminal, and has enough weight that he cannot simply run off.

We may be warned by what happened, at least in many American cities, to policing. At one time individual policemen were inexpensive, and nearly all of them were employed on the street for deterrence, as a patrol force. Then policemen became more expensive. Police forces bought radios and police cars. They could react much more quickly to a reported crime, and ideally reaction could be so quick that the criminals could be caught. In effect radio exploited a primitive form of crime surveillance, in that a central command post received reports (surveillance of a sort) and then reacted by despatching cars (cars also patrolled, but they were not as effective as the policemen on the beat). Incidentally, the surveillance aspect of the radio-car combination was not generally emphasised, although it seems obvious

in a modern command and control context. If you measured police success by the chance that a crime would be solved and the criminal caught, the combination of radio and cars paid off handsomely. However, citizens do not measure results that way. They want to feel safe. With the police out of sight, criminals felt freer to act. Many American cities emptied out after dark. Police are now going back onto the street, despite their considerable cost.

We are now seeing a new possibility. Several cities, such as London and New York, have installed surveillance cameras on a large scale. It is impossible for humans to monitor all of these cameras continuously, and no one seems to have invented satisfactory software to do so. However, the cameras do often catch criminals in the act, and they may even show where the criminals went after attacking. That information is used to identify perpetrators and to track them down, and is then used in court. In the past, the radio-car combination often arrived too late at the scene of a crime. Now lateness is less of a guarantee of police failure. The assumption is still that deterrence depends more on whether the criminal is caught than on instant reaction. Unfortunately there is excellent evidence that many criminals are unaffected by abstract threats. They react to what they can see. The value of the cameras may be simply that they are omnipresent.

The hope must be that the cameras eventually become a kind of continuous surveillance system which really does alert the police as a crime is committed. That in turn would make the existing command system fully effective. In that case surveillance really would be nearly the same thing as police presence - in fact it would be more pervasive than the policeman on the beat. It might make policemen on foot patrol more effective, as they could quickly be vectored to crime scenes. Isn't that what we would like enforcers of good order at sea to be able to do? Their surveillance job is simpler, because there are many fewer ships and boats at sea in a given area than people in, say, midtown New York at night. It may also be possible to concentrate attention on a very few seaborne craft, which are acting in potentially criminal ways, excluding the vast majority proceeding in expected lawful ways.

The police story is really about what navies can do. How do you deal with reduced numbers? The US Coast Guard faced that problem in the 1990s, as its large cutter fleet aged. It seemed clear that cutters could not possibly be replaced on a one for one basis. The Coast Guard sought a solution based on the new ocean surveillance technology. Too often, looking at a navy (the Coast Guard is often described as a mid-size navy) we ignore off-ship assets such as ocean surveillance systems and even patrol aircraft. The Coast Guard realised that they could be force multipliers. Ocean surveillance could cue ships already at sea. It could cover a vast area. Even the fastest ships could not get to the scene of an emergency or a maritime crime quickly enough. The solution was to provide the cutters with rapid-reaction vehicles, such as fast boats and armed helicopters. At the least, they could get to wherever the problem was and take instant action while the cutter closed in.

Was the solution ideal? No, it would have been a lot better if the Coast Guard had had cutters everywhere it was needed. However, that had never been the case. The Coast Guard had never had a strength at sea comparable to the presence exerted by an old-time police force in a big city. The sea is too vast, and resources far too thin.

How thin? Maybe some history can help clarify the problem. I have been working on a history of Royal Navy cruisers of the Victorian era. That must sound quaint and irrelevant, so let me put it a different way. The Victorian Royal Navy was the closest thing we have ever seen to a world navy with global maritime police functions. Why? Victorian Great Britain dominated seaborne trade (and in turn lived off that trade), so its vital interests included maintaining good order at sea. That included functions like defeating pirates. The 19th century was rather different from ours, for example in the penalties authorities could exact. The Royal Navy's solution to piracy was often to wipe out villages supporting pirates, whether or not they were in territory the British claimed to rule. Enforcement without such penalties is obviously more difficult. Under the same rubric the British cruiser HMS *Shah* fired the world's first attacking torpedo against the Peruvian rebel ironclad *Huascar*, whose activities the local British commander considered piratical. *Huascar* escaped (the torpedo made all of 7 knots), but the point is that maintaining good order at sea was never a simple or safe proposition.

Most of the time, good order was maintained by a large fleet of small cruising ships: sloops, gun vessels, and gunboats. About 1880 it seemed that they were part of a continuum of cruisers, and that they had the vital wartime role of dealing with commerce raiders preying on the seaborne trade vital to Britain. Not too long after that a split opened. The good-order fleet had to be numerous, so the cost of the individual ships had to be held down. In particular they could not have very powerful engines or armour, though they could be armed like small cruisers. Well before 1890 it was clear that they could not run down either fast raiders or an increasing number of merchant ships. Sloops and lesser ships were still valued, but they did not count in the wartime fleet. Conversely, cruisers generally did not undertake maritime police jobs.

From about 1890 on, the cost of individual warships rose. For example, cruisers had to be made faster and faster to deal with faster foreign cruisers. They also needed more elaborate armament - though we might not appreciate how much more elaborate by contemporary standards. By 1900 the Royal Navy was no longer building large numbers of small cruisers, which might still have had a policing role. It was concentrating on powerful armoured cruisers, each of which cost about as much as a battleship. Of course it was also building enough battleships to deal with the two foreign fleets of France and Russia, which it seemed likely to fight if war broke out - and there were periodic war scares. In effect the British found themselves paying for a fleet perhaps two or three times as expensive as the next largest, that of France.



The mass of big cruisers was needed because the British strategy of trade protection required that cruisers occupy the focal areas through which seaborne trade passed, and into which a raider would find herself funnelled. British enemies did not need such numbers, only enough large cruisers that the British would have to station equivalent ships at all the focal areas. A French navy minister even pointed out that by building powerful armoured cruisers (which the British would have to counter) he was waging a kind of industrial warfare that would break the British. Incidentally, the British were forced into this strategy by economics. There was absolutely no chance that they could afford the numbers of cruisers that the alternative convoy strategy would have required. They were also uncomfortably aware that an inadequately escorted convoy was no more than a tasty meal for a raider. These realities changed radically once the raiders were submarines which could not stand up to even small surface warships, but that is another story.

Why should any of this matter to maintaining good order at sea? The answer is that the maritime police force of sloops and lesser ships was paid for out of the same pot as the battleships and the big cruisers. As money tightened early in the 20th century, something had to give. In 1904 Admiral Sir John 'Jacky' Fisher was appointed as First Sea Lord in the specific hope that he could solve the problem. He was famous (or notorious) for his radical ideas. As Commander-in-Chief Mediterranean he had faced two distinct threats, the French and the Russians, with a force which could defeat one but not both at once. He discovered what the US Coast Guard discovered a century later, that ocean surveillance (in his case, by breaking cable codes) could magnify a limited battle force. In particular, he could tell when and where the French and the Russians planned a rendezvous, and he could also know when each fleet sailed. On that basis he could deal with one and then the other. This new idea, incidentally, required Admiral Fisher to press his fleet engineers to achieve the maximum sea speed for his fleet - his surveillance data were transient, so he had to react quickly (much as the Coast Guard needs fast reaction craft to exploit its surveillance data).

There was no similar way to magnify the effect of the British maritime police fleet. No relevant ocean surveillance technology existed, or indeed would exist for another 80 years or more. Without such technology, it did not really matter how fast the maritime police ships were, because they were usually essentially policemen on a beat.

Fisher was forced to choose: he could either keep the maritime police force, or he could modernise his own fleet. Modernisation, incidentally, included buying fast ships to exploit surveillance information about raiders, rather than waiting for them in focal areas. Australia bought one such ship, as HMAS *Australia* was part of a fleet unit specially designed to run down commerce raiders in wartime. The combination of ocean surveillance and large fast ships was a way to prevent a financial catastrophe.

Fisher could do anything except expand the pot of money he had. Something large had to go and it was the maritime police force. Fisher was convinced that war was coming. He evaluated every aspect of the Royal Navy in terms of that possibility and the maritime police force did not figure in it. Its ships could 'neither fight nor run away'. Fisher scrapped many of them. The reason that the cuts were not so obvious after 1918 was that World War I unexpectedly demanded large numbers of small ships, such as minesweeping sloops, which were well adapted to the pre-war maritime policing role. World War II produced even more such ships, mainly minesweepers and small escorts.

In effect Fisher was saying that the Royal Navy should not be paying for maritime policing. He might profitably have demanded creation of a Royal Coast Guard like the US Coast Guard, to be paid for by the Foreign Office and the Colonial Office - except that he knew it would really be paid for out of his own budget (total British government income did not rise until major fiscal changes were made in 1909).

Perhaps the most important point remains to be made. The entire maritime policing issue was a British domestic problem because the British Empire was global and maritime. It embraced most of the places in which good order at sea had to be enforced. There was little or no jurisdictional difficulty. The world is now very different.

Where local governments agree on the need for good order, there is really no problem. You heard about how Singapore, Malaysia, and Indonesia jointly guarantee the safety of sea traffic in the Malacca Strait, which was once a hotbed of armed robbery/piracy. They operate something very close to a joint surveillance system, and each country is glad to allow the others' forces to enter its territorial waters in hot pursuit. All benefit from the good order they enforce in the Malacca Strait. In case that seems natural, remember that in the mid-1960s Indonesia and Malaysia were locked in an undeclared war, in which Australia was a major participant helping Malaysia. Who would have policed the Malacca Strait then? As long as there was considerable naval activity on the spot, pirates would have been discouraged. If that war had settled into a long cold war, however, things might have been quite different. Further, the experience of the Iran-Iraq War shows that any kind of war fought across an important strait can severely damage seaborne trade. We can only guess at the effect of a war fought around or near some concentration of maritime resources, such as the South China Sea.

The point of enforcing good order at sea during a local war is that the enforcers are neutral; they are not trying to expand the local conflict or to tilt it in favour of one side or the other. As sophisticated naval weapons proliferate, it takes more sophisticated warships to survive in order to maintain order. Inevitably their numbers will be limited. The US Coast Guard example suggests that the main hope is to magnify the effect of individual ships by providing them with a combination of surveillance data and quick-reaction onboard vehicles. That in turn suggests a need

for larger rather than smaller ships, and particularly for good command and control facilities on board the ships. It emphasises the value of air capability. Probably air capability for maintaining good order at sea requires manned capability, because police operations at any level demand arrests rather than the destruction of possible criminals. Incidentally, policing also requires the collection of much more data than we are used to obtaining in war, because the ultimate object is a court conviction.

You can see the beginnings of this capability in the seas to Australia's north, where there is an integrated surveillance operation (aircraft plus the Jindalee over-the-horizon-radar plus other assets) supporting fast *Armidale* class patrol vessels that can launch fast boats. The question for the future is whether the surveillance-enforcement combination can or should be moveable to other places where good order is being disturbed. Portable surveillance is available in a combination of satellites, long-range radar (such as Jindalee), and long-endurance (hence probably unmanned) aircraft. There is probably also a place for acoustic arrays, either towed or on the sea bottom. I remember numerous discussions of serious poaching problems in the Southern Ocean within the Australian region of maritime responsibility. The current technique requires one of a very few patrol ships to run down the poachers, sometimes over a period of days or even weeks - one celebrated chase took the ship all the way to South Africa. If poaching is profitable enough, it is worth pulling one of the few ships off station while other poachers operate freely. Surveillance coupled with quick reaction might make such tactics untenable.

Another aspect of good order seems to be worth pointing out. The sea itself is neutral territory. More and more governments are investing in ballistic missiles. If I am right that most of them have claims on their neighbours' territories, we are likely to be seeing a lot more warfare between ex-colonial countries, most of which are near the sea. It may well be in Australia's interest to cool off such conflicts. One way to do so is to neutralise their offensive weapons - their ballistic missiles. The only way to do so without showing favour to one side or the other is to do so from the sea. Not showing favour may be quite important, because Canberra may want badly not to offend either combatant.

It happens that Australia is buying at least the potential to exercise exactly this capability in its new Aegis-equipped destroyers. The SM-6 missile the RAN is purchasing is designed for, among other things, defence against short-range ballistic missiles (it is also an excellent air defence weapon). Aegis is compatible with the SM-3 missile, which has demonstrated its ability to destroy the re-entry vehicles of long-range ballistic missiles. For example, an SM-3 destroyed a tumbling (hence moving unpredictably) US satellite in 2008.

Ballistic missile defence is commonly seen as part of a national defence against missile attack, and therefore it might seem to be a rather extreme version of the warfighting capacity which is opposed to the peacetime mission of maintaining good order at sea. However, by being placed at sea - in neutral territory - it seems

to be an excellent complement to other means of shielding the sea that we have to use from local warfare.

The important point is that the sea is worth defending. If we cannot defend good order, we lose not just something convenient but something on which our lives depend. Globalisation has gone so far that countries cannot easily retreat into total self-dependence. They depend upon free use of the sea to move vital goods, because only the sea allows such movement on a relatively inexpensive basis. Part of that basis is physics: the sea supports vast weights, and they can be moved without expending much energy. But part is also that the seas are safe - and safety exists only if we enforce it. We have done such a good job of enforcement over the past few decades that governments may forget that this safety is bought by considerable exertion - and that the loss of that safety may be catastrophic. That is quite aside from the sea resources on which our lives also increasingly depend.



PART 5

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Royal Australian Navy



# The Naval Reserve: Helping Navy Reach Further into the Community

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*Richard Phillips*

The aim of this conference is to explore the broad theme of the naval contribution to national security and prosperity and to better understand how navies contribute to the defence and well-being of their nation's interests. This paper explores a number of themes which highlight the many individual and community benefits that are accrued through Reserve service.

## **Brief History of the Royal Australian Naval Reserve**

The Royal Australian Naval Reserve (RANR) has a long and proud tradition of helping the RAN reach into the community. In fact, it can trace its origins back to 1863 and the formation of the New South Wales Naval Brigade. By 1884, most of the Australian colonies had established volunteer citizen reserve Naval Brigades. The state-based Reserve Naval Brigades were disbanded in 1907 and a Citizen Naval Force came into being in 1911. Also introduced at that time, was a universal training scheme which provided six years elementary training for boys under military age, followed by seven year intensive training as adult members of the Citizen Naval Force.

During World War I, the first force raised for overseas deployment consisted of 500 volunteers from time-expired seaman belonging to the Naval Reserves of Great Britain or Australia. This force formed the Australian Naval and Military Expeditionary Force and was used in the assault in German New Guinea in August 1914. Naval Reservists also formed the 1st Royal Australian Naval Bridging Team, an engineering unit deployed in the Gallipoli campaign in 1915.

After World War I, a new branch of Naval Reserves was created, the Royal Australian Volunteer Reserve. This organisation sought to interest those men working in the maritime industry to take part in naval training.

Reserve training was suspended during World War II, however all new entry personnel were entered through the RANR and they signed an agreement for the duration of hostilities instead of the customary 12 years engagement. When the war ended, 592 officers were serving in the RANR Special Branch, while the total other Reserve Forces numbered 2863 officers and 26,956 ratings. This represented 80 per cent of the personnel serving in the RAN.



In the post-WWII era, Naval Reserve Port Divisions featured prominently and they operated in all capital cities. In 1986, the Chief of Naval Staff, Vice Admiral Michael Hudson, RAN ordered that the wearing of reserve insignia be discontinued in recognition of the 'all of one company' concept. Subsequently the Port Divisions were closed in 1992 and the RAN moved to integrate the Naval Reserve into the permanent navy.

## Current Naval Reserve

Today's Australian Defence Force (ADF) is recognised as being technologically sophisticated but relatively small, especially when compared to most Asian militaries. It consists of around 60,000 full time active personnel, 24,000 active reserve and 22,000 standby reserve members. The Reserve now plays an important role in supporting the operational requirements of Defence.

The RAN employs its reserves as part of a fully integrated workforce model and the Naval Reserve provide two fundamental types of capability. The first is a supplementary capability that provides sustainment in traditional, primary military qualifications and categories. The majority of active working Naval Reservists supplements shortfalls in the permanent Navy workforce, working part-time or on continuous full time service in the supply, engineering and seaman categories across all ranks and sub-specialisations. This includes divers and musicians who work in small state based units. This supplementation role is a first priority to ensure that the RAN can fulfil its mission which is 'to fight and win in the maritime environment'.

The second capability provided is complementary, where expertise can be accessed in niche areas that the permanent navy does not possess, possesses in small numbers, or, does not need in a full-time capacity; such as medical, dental, psychologist, chaplain, legal and intelligence. Complementary Reservists deploy regularly, particularly in health, maritime trade, public relations and legal roles. Members of the standby Reserve are not required to undertake training and would only be called-up in response to a national emergency. Most standby Reservists are former full-time members of the ADF.

One of the primary advantages in having a Reserve is that this increases the available manpower by many-fold in a short period of time, unlike the months it would take to train new recruits or conscripts, since a Reservist who is a past permanent member is already trained. Reservists who have operational experience can also increase not only the quantity, but the overall quality of the forces. So a clear contribution to the national prosperity is that pools of Reservists can allow a government to avoid the costs, both political and financial, of requiring new recruits or conscripts. Reservists, particularly the standby Reserve, are more economical than regular forces as they will be called up when they are needed.

Members of the active Reserve present as a group of committed individuals, who volunteer their diverse skills and expertise to serve with Defence.

A key message of this paper is that service as a member of the Naval Reserve facilitates a two way transfer of skills that benefits the RAN, the civilian employer, the community and the individual. A Reservist offers the ADF, as an employer, a number of advantages which are summarised as:

- Access to a highly skilled workforce, some with niche capabilities, when required, which does not need to be maintained or paid for continuously.
- Ability to surge elements to meet operational demands and or contingencies, including aid to the community (such as Reserve Diving Team 6 involvement with flood relief in Queensland) or the provision of overseas aid (such as peacekeeping and natural disasters).
- The different perspective a Reservist can bring to the military in terms of work experience and expertise.
- Ability to cover permanent navy personnel vacancies through continuous full time service.
- The strong links the Reservist has with the civilian community and the benefits so derived.

In return, a Reservist also offers a number of advantages to a civilian employer which can be summarised as:

- Access to key staff trained in leadership, management and teamwork.
- A workforce that is up-skilled at no cost to the organisation.
- A flexible workforce to meet the demands of intermittent projects and seasonal influences.
- Civilian accreditation of military training.
- Development of personal skills in staff members.
- Access to staff who have been employed in a values driven organisation.
- Ability to have their organisation recognised as a 'good corporate citizen'.
- Access to employer support payments for extended periods of service.

Finally, the benefits accrued by individual Reservists include:

- Employment as a Reservist provides opportunities that help develop an individual's full potential as a fully rounded citizen.
- Reservists acquire new skills and experiences in a challenging environment.
- An opportunity to serve your country in a part time capacity.

## The Defence Reserves Support Council

The Defence Reserves Support Council provides a vital link between the ADF, employers and the community from which the Reserve force is drawn. It aims to enhance the availability of the Reserve component of the ADF by promoting the benefits of employing members of the Reserve. It also aims to establish a flexible partnership with the community and employers so they are encouraged to support those in the Reserve. Each state and territory has a committee of the Council and some also have committees in larger regional centres. Council members made up of volunteers and include representatives from industry, small business, trade unions, youth and other interested and influential community groups. Key objectives are to:

- improve Reserve availability
- improve the retention of Reservists in the ADF
- promote the benefits of Reserve service to employers and educationalists
- inform Reservists of their responsibilities to employers
- improve acceptance within the general community for Reserve service
- liaise with peak employer groups on matters affecting Reserve service
- provide advice to Defence and government on matters affecting community and employer support for the Reserve force
- provide liaison between the ADF and the employer at times of call-out
- gain recognition of the Reserve contribution within the ADF and the wider community
- provide comment on other aspects of Reserve service to support the achievement of the mission.

## Other Considerations

Today the RAN faces a number of enterprise risks including: loss of government and public confidence in the RAN; and failure to attract, retain and generate skills and expertise in an integrated navy workforce.

Much has been written about the decline in public confidence with regard to public institutions. Studies conclude that at the national level, social trust and confidence in government and its institutions, including military institutions, are strongly associated with each other. Undoubtedly, individual Naval Reservists - doctors, lawyers, chaplains and who in many instances are also community and business leaders, help build community trust and confidence in the RAN on a daily basis.

Finally, by extracting fuller value from the Reserve and by reaching further into the community, the RAN will have the flexibility required to respond to uncertainty derived from:

- the impact of demographic changes to the Australian population profile and related effects on the supply of labour
- the future demands on Defence and the resulting tempo and profile of operations
- the economic environment
- cost considerations and drives for greater efficiency which are attracting increasing attention from successive Australian governments.

In the last decade, the trend has been to employ Reserves as an 'operational reserve' where it actually backfills on current operational tasks. This movement from the 'strategic reserve' to 'operational' marks an important step in how western militaries will grow in the future. Defence forces are likely to have smaller standing regular forces and larger operational Reserve forces to support operations. This trend is especially evident in the United States and the United Kingdom. A key piece of work led by Vice Chief of Defence Force is currently looking at the introduction of broadened employment options across Defence. This work is in its very early stages, but possible outcomes could include new Service categories such as 'part time', which will allow Defence members flexibility in planning their careers and personal lives.

This work has the potential to offer Service Chiefs the flexibility of choosing from a range of personnel to fulfil Service requirements and could help to deliver better bang for our buck. Importantly, such changes will place the ADF in a healthier position to confront future national skills shortages and tighter budgets and will go

some way to making Defence a more appealing employer of choice, so as to attract the best people and retain them for longer.

## Conclusion

This paper has examined how the Naval Reserve has, and will continue to assist the RAN to reach into the community. Since 1863, the RAN has relied on its citizen members to provide it with important capability. Capability is further enhanced through the transfer of skills and knowledge from the community into the RAN with reciprocal transfers back into the community, through dual service and employment.

Business also benefits from the employment of individual members of the Naval Reserve. These committed volunteers promote better understandings of the importance of the Defence Forces to the wider community. In doing so, they help build confidence and trust in the ADF.

Defence has a sizable and valuable talent pool in the form of the Reserves. The Reserve enables Defence to also broaden and strengthen industry partnerships, to boost and more optimally use the supply of critical skills and general skills through clearly structured arrangements available through the Defence Reserve Support Council. Direct aid to the community during times of national emergency, as occurred with the recent bushfires and Queensland flood relief, further enhances Navy's reach into the community. The RAN faces many challenges as it moves forward into a new era. The Naval Reserve stands ready to help the RAN reach wider into the community to achieve its mission.

# Maritime Medical Diplomacy as an Instrument of Soft Power

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*Rob Curtis*

Since the 1960s developmental medical humanitarian assistance has been used as an instrument of foreign policy by major and middle powers to provide assistance to developing nations. This was undertaken, in the main, for altruistic and benevolent reasons, but importantly it was also what we would now refer to as a 'soft power' mechanism. This was highly important during the Cold War, as one strategy to win the 'hearts and minds' of the populace of developing nations who may have been in the sphere of influence of one power or the other. Since then the 'one upmanship' of humanitarian aid wars, including medical aid has persisted to this day between rival states in our region, for example between the People's Republic of China (China) and the Republic of China (Taiwan).

Since the Indian Ocean tsunami of 2004 there has been a proliferation of maritime based humanitarian aid missions from a number of countries in the Asia-Pacific region. This paper investigates issues relating to the employment of maritime medical diplomacy in Australia's region of influence - the Asia-Pacific. First, what is soft power and what differentiates it from other forms of power? What are the attributes of soft power and how is it generated? Second, the issues surrounding humanitarian aid as medical diplomacy are reviewed. How can maritime medical diplomacy be an instrument of soft power and how does this differ from traditional medical diplomacy? What is special about the Asia-Pacific littoral that makes it especially suited to the employment of maritime medical diplomacy? This is looked at with regard to geography, topography, climate, demography, and disease epidemiology. Can maritime medical diplomacy be a very expedient and effective way of generating soft power? After detailing several recent examples of maritime medical diplomacy, arguments for and against the use of maritime medical diplomacy are explored. Finally the question of whether the use of maritime medical diplomacy in the Asia-Pacific will continue and given the increasing naval capabilities of some regional powers may even intensify.

## What is Soft Power?

Everyone is familiar with hard power. Hard power through military or economic might can be blunt coercive tools to get others to change their position. The converse of hard power is soft power. As defined by Nye, it is 'getting others to want the outcomes you want, i.e. co-opting people rather than coercing them'.<sup>1</sup> In a geopolitical sense, it is the attributes or actions of a state, by the use of non-traditional forces or elements that targets another state's perception of the first state. The desired outcome is that these forces produce a positive influence and

persuade the target state to adopt a sympathetic stance to the targeting state, or even a desire to imitate the targeting state. Diplomacy in that assistance is provided on a government-to-government level to support pre-existing host state initiatives and development goals.

The soft power of a state rests primarily on three pillars: its culture, the elements of which are attractive to outsiders; its political values, when it adheres to them domestically and internationally; and its foreign policies, when they are seen as legitimate and having moral authority. 'Soft power uses an attraction to shared values and the justness and duty to contributing to the achievement of those values'. Humanitarian assistance carried out by the agencies of a particular government can have that co-opting effect. 'If my behaviour is determined by an observable but intangible attraction, soft power is at work'.<sup>2</sup>

Although some critics claim that the term 'soft power' should not be used by governments, because governments do not have full control of the attraction of soft power, that does not preclude governments from taking actions that would be a major, although not total contribution to a state's soft power. In that soft power is linked with a perception of a state's culture; in liberal societies states cannot or should not control a state's culture. The absence of policies or mechanisms to control culture can itself be a part of the overall attraction. Soft power, though, is not merely the same as mere influence. Influence can be gained by providing resources, access, concession or grants by one donor state to a recipient state; however, how the aforementioned elements are applied and by whom are the differences in generating that soft power. It must also be the power to 'attract'. Therefore, it cannot be generated at arm's length when a host state's populace cannot visualise the culture and values of individuals from the donor state. Today, despite the advent of real-time social media, the need for face-to-face contact with our neighbours (what renowned American journalist Edward R Murrow called 'the last three feet') still remains. Delivering large quantities of monetary aid, or aid supplies emblazoned with the donor state's flag does have its benefits, but it has better effect and appeal if it is accompanied by benign 'boots on the ground' to impart skills and stand beside those neighbours who are in need.<sup>3</sup>

Some sceptics do not view imitation or attraction as 'soft power', but simply elementary desires for improvement. Taken singularly, that may be the case; however, combined elements or all three pillars are usually in play to exert true soft power where it may create a diffuse general influence, rather than producing an easily observable specific action.<sup>4</sup>

In the case of the United States, it has historically used a mix of hard power, such as military or economic power, and soft power to achieve its aims. States that cooperate with the United States will only do so up to a point out of mere self-interest, but their degree of cooperation is also affected by the attractiveness of the United States by another state's populace. With the demise of the Soviet Union

at the end of the Cold War, the United States maintained its now uni-polarity with a predominance of hard power; particularly with its policy in the last 10 years of unilateral pre-emptive military action and less emphasis on soft power initiatives. Some now hypothesise that this period may also now be moving onto an era of multi-polarity, dominated by Brazil, Russia, America and China, followed by a second tier of assertive and potentially competing middle powers. This era could then see the return to a greater emphasis in soft power diplomacy to win 'hearts and minds'.<sup>5</sup>

Medical humanitarian aid as a form of diplomacy has been and will increasingly be an important element of soft power generation to win 'hearts and minds'. Within the military and from a maritime strategy perspective humanitarian assistance and disaster relief are two terms that are sometimes aggregated and to some they appear synonymous. In the context of this paper medical developmental humanitarian aid, or medical diplomacy, is the planned and scheduled deployment of logistic and human resources to improve the health and welfare of a target population. This is usually with the consent, cooperation and coordination of the host state. Unlike medical diplomacy, disaster relief is synonymous with the urgent deployment of health and engineering assets for an acute situation, where it is usually difficult to access the disaster area due to destruction of infrastructure. One commonality between the two may be a lack of infrastructure, such as roads, airfields or ports making it difficult to access the target location. In one it may be caused by the disaster's destruction. In the other the infrastructure may never have been there at all to begin with.

Consciously or unconsciously, medical humanitarian aid has been an instrument of soft power since at least the beginning of the 20th century. In 1918, in the wake of World War I, the Spanish Influenza pandemic swept the world. When the populations of the islands of the South Pacific were being decimated by the 'flu', the Australian government deployed the cruiser HMAS *Encounter* from Sydney to Apia, Samoa and Nuku'alofa, Tonga on a medical humanitarian aid mission over the period October-December 1918. The commanding officer of *Encounter*, Commander Hugh Thring, RAN landed 6 doctors, 18 medical orderlies and 3 naval sick berth attendants in Apia under the command of Surgeon Lieutenant Francis Temple Grey, RAN. One other doctor and five medical orderlies were landed in Tonga. In both locations the medical staff provided very much needed inoculations and instituted public health measures that limited the further spread of influenza.<sup>6</sup> In terms of soft power, this deployment brought great credit upon Australia and conversely detracted from the soft power of New Zealand, whose incompetent administrators in Samoa had exacerbated the crisis.

In the context of this paper, it is opined that soft power is generated not just by the provision of health facilities, either permanent or transient, nor the human resource of skilled practitioners who are able to pass those clinical skills onto host state clinicians, but also the demonstrated community and personal culture and values of



the donor government and that government's health practitioners undertaking the humanitarian aid missions. This is in the observed exemplars of the attitude to the importance of healthcare as an enabler to national development, the equity in the universality of health care, and diversity and equity witnessed in the humanitarian aid workforce.

China and Taiwan have been international aid rivals for the last 40 years. Both states compete against each other in terms of influence and soft power when engaging with Southeast Asian and Pacific Island nations. The objectives they hope to achieve through this are as varied as fishing rights, resource access to voting concessions in the United Nations. Dr Lu Yeh-chung, a political scientist at the National Chenchi University in Taipei has stated 'Soft power is Taiwan's 'weapon of the weak', given its limited military, economic and political resources'.<sup>7</sup> However, land-based medical aid aimed at the Asia-Pacific's developing states has, on occasions, been well targeted, but on many others has been ham-fisted. There are numerous examples of aid projects where facilities have been completed that are not 'fit for purpose' or that are too complex for the recipient state to run and maintain in the long term, or the construction disenfranchises the local population, because contracts are awarded to donor country companies to the exclusion of local firms and local workers. Instead of generating soft power, these examples detract from it. Whether Taiwan and China's humanitarian aid rivalry (bordering at one stage as likened to an arms race) has been detrimental or beneficial to the Asia-Pacific region remains contentious. In recent years, however, in what appears to be a de-escalation, both have introduced modest reductions in humanitarian aid funding.<sup>8</sup> Although perhaps in a change of strategy, China has now embarked upon two maritime based medical humanitarian missions to regions outside the Asia-Pacific region.

### Medical Diplomacy 'From the Sea'

Maritime medical diplomacy, using naval vessels acknowledges its limitations; it is only one element of diplomacy and perhaps only one element of a humanitarian aid strategy, but it can be successful where other terrestrially based missions have been less so. So what links maritime strategy with medical humanitarian aid and international diplomacy? Naval vessels have historically been used as instruments of a state's diplomacy. In referring to Australia, but it can equally be applied to most navies, *Australian Maritime Doctrine* states that Australia has used naval diplomacy to express its interest and involvement in many areas of the world. 'Uniquely acceptable overseas and free to access remote regions, the RAN has on countless occasions acted to support, reassure, deter, or coerce as a particular need arose'. Naval diplomacy, or the use of maritime forces in support of foreign policy can also be described as shaping operations, and provides context for those tasks primarily designed to influence the policies and actions of other states. Many of the inherent naval characteristics

described below are attributes that make maritime forces the instruments of first resort for governments. In particular, they possess the versatility and the range of response to be very valuable to governments in times of uncertainty and heightened tensions, allowing the maximum freedom of decision.<sup>9</sup>

Medical diplomacy is either the delivery of healthcare, or the training of indigenous health staff to facilitate host state objectives. Adding the maritime element; to paraphrase 1990s US Marine Corps doctrine, maritime medical diplomacy is the performance of humanitarian medical assistance ‘from the sea’. The use of naval vessels to perform maritime medical diplomacy can be an extension of the historic role of naval strategy in ‘shaping’ the environment. Maritime medical diplomacy is either carried out onboard ships or health personnel are deployed from ships to shore, to perform primary health care, public health tasks or surgery, either in field facilities or in host state hospitals or clinics.

Few non-military agencies have the transport, human resource or logistics capabilities to perform these functions within the maritime environment. Naval and marine forces are ideally suited to the delivery of medical humanitarian assistance in the maritime/littoral environment as conducting these operations demonstrates the very same characteristic and attributes applied to sea power generally.

When considering humanitarian assistance operations a naval vessel’s assets, such as embarked helicopters and amphibious craft are particularly useful and warships may act as logistic support bases, medical centres and command posts for extended periods. ‘The specialist skills available in naval ships also mean that their personnel can be invaluable sources of trained manpower for rehabilitation and repair work. Most importantly, naval forces are self-supporting and do not create additional logistic burdens’ in situations where infrastructure does not exist or has deteriorated.<sup>10</sup>

## Geography and Topography

What is special about the Asia-Pacific littoral regions that lend themselves so well to sea-based health interventions? The geography and topography of the region predisposes itself to the delivery of maritime medical diplomacy. The area encompasses one third of the world’s surface and has approximately 250,000km of coastline. The Southeast Asian littoral region contains 13 states. The Pacific/Oceania region contains 16 states and over 10 major territories. The numerous archipelagos are separated by some of the largest expanses of ocean on Earth. The littoral regions of Southeast Asia and South Asia have large, medically underserved populations where the lack of infrastructure and services, except outside the major cities, is evident. The Pacific Island nations are characterised by disparate populations on smaller islands, remote from the population centres of their countries, again with a paucity of infrastructure and services. There are significant transit times between

islands by water or limited and expensive means to do so via air. Communication networks are also significantly under developed with many areas having limited fixed telephone networks and not served at all by mobile phone coverage. There remain some areas that still rely solely on two-way radio.<sup>11</sup>

Littoral regions can be relatively easily traversed by watercraft and helicopters deployed from warships (including amphibious ships) and hospital ships. They can employ the characteristics of maritime power as articulated above to transfer logistics, engineering plant and personnel to the shoreline and a considerable distance inland to provide medical humanitarian assistance as medical diplomacy and in military parlance create an 'effect'. What is more, for political expediency and to create minimal permanent 'footprint' they can redeploy this 'effect' back aboard ship relatively easily; even nightly, if required. This can allow the host nation government to demonstrate to its people that it still maintains its sovereignty and responsibility for the delivery of health care to its people.

## Health Status

What are the health problems facing the developing littoral nations of the Asia-Pacific region and how do at least some of these lend themselves to sea-based health interventions? The region has few developed countries with first world health delivery systems. The majority of the countries of the region, in varying degrees, suffer from lack of health infrastructure, trained health personnel and resources. Associated with this is a lack of general infrastructure in a number of regions, such as roads and ports to connect outlying and disparate centres. Additionally, these local centres may not have adequate power, sanitation or potable water. This lack of infrastructure and services has a direct influence on the health status of these populations. From a purely medical perspective, despite large sums of aid money and long term eradication programs, communicable diseases such as tuberculosis, malaria, dengue and even occasionally cholera remain endemic in the region.

Over the last 10 years it has been realised that the 8 Millennium Development Goals, particularly health related Goals 4, 5 and 6, of reducing child mortality rates, improving maternal health, and combating HIV/AIDS, malaria, and other diseases, devised and agreed upon by the United Nations in 2000 will not be met within the established timeframe of 2015.<sup>12</sup>

In some countries, such as Nauru, there has inexplicably been no improvement in mortality rates over the past 50 years and in other countries there has been a stagnation of life expectancy. Table 1 illustrates the stark disparity in six health indices across four developed and five developing nations in the Asia-Pacific region.<sup>13</sup>

	<b>Life Expectancy</b>	<b>Infant Mortality</b> (per 1000 births)	<b>Doctors</b> (per 1000 people)	<b>Hospital Beds</b> (per 1000 people)	<b>Water supply</b> (%)	<b>Sanitation</b> (%)
Singapore	83.75	2.65	1.83	3.1	100	100
Australia	81.9	4.55	2.99	3.8	100	100
New Zealand	80.71	4.72	2.38	6.2	100	100
United States	78.49	5.98	2.68	3.1	99	100
Solomon Island	74.42	17.25	0.19	1.4	70	31
Indonesia	71.62	26.99	0.29	0.6	80	52
East Timor	68.27	36.78	0.10	u/k	69	50
Papua New Guinea	66.46	42.05	0.05	u/k	40	45
Cambodia	63.04	54.8	0.23	0.1	61	29

*Table 1: Health indices by country*

This stagnation is because just when the scourge of communicable diseases appears to be in decline, there is now a massive increase in the 'lifestyle diseases' of obesity, heart disease, hypertension, diabetes and stroke.<sup>14</sup> The statistics for obesity in Table 2, comparing developing versus developed countries in our region illustrate this.<sup>15</sup>

<b>Country</b>	<b>% population &gt; 30 BMI</b>
Tonga	56.0
Kiribati	50.6
United States	33.9
Australia	16.4
New Zealand	26.5

*Table 2: Percentage obesity levels*

Another example of the challenges to increasing health that many Asia-Pacific states encounter is a recent study which highlighted the problems in providing vaccines to children in the 22 states and territories in the Pacific, most of which are small and separated by vast distances.<sup>16</sup> As they are small there are no economies of scale, so greater resources have to be expended to transport medical personnel and pharmaceuticals to these remote and decentralised locations.

Regarding the Pacific Island nations; the World Health Organisation has defined a 'health island' as one that is committed to and involved in a process of achieving a better health and quality of life for its people. For those states adopting the 'healthy islands' concept some initiatives focus on control of specific disease or health problems, such as malaria control in Solomon Islands or sanitation in Tonga.<sup>17</sup> It is those states and continental states with littoral regions which have already commenced these initiatives where sea-based health interventions can have the most effect, because host state governments have already determined what needs to occur and where resources may be lacking. Those resources, particularly transport, logistics, health and engineering personnel and importantly the ability to coordinate with host state authorities are the instruments of maritime medical diplomacy can provide.<sup>18</sup>

With the oversight and coordination of the host government the intervention of maritime medical diplomacy can have immediate effects on the populations of developing Asia-Pacific states. Clinical interventions for an individual patient are one immediate outcome. Capacity building and skill sharing are others. Linked with the good will and person to person contact that humanitarian aid missions such as these provide, soft power is generated.

Many of the countries have young, growing populations with low living standards and high unemployment rates and their health status is perpetually at risk of deterioration.<sup>19</sup> This impressionable demographic are exactly those that are the target of medical diplomacy. They immediately see the tangible effects that maritime medical diplomatic aid can have on their lives and communities.

## Conducting Maritime Medical Diplomacy

It has been shown above why naval platforms can be used for maritime medical diplomacy, but are states in the Asia-Pacific region conducting such operations? How are they doing this and are they successful in generating soft power? A number of examples follow.

### United States

Terror Free Tomorrow, a US-based, non-partisan, non-profit polling organisation that seeks to understand supporters of global terrorism through public opinion polls in various parts of the world, began to observe interesting trends. Their data indicated that following the US Navy tsunami disaster relief efforts, Indonesian public opinion of those who opposed the United States efforts in combating terrorism decreased a dramatic 50 per cent (from 72 per cent in 2003 to 36 per cent in 2005).<sup>20</sup>

The hospital ship USNS *Mercy* and a number of large-deck amphibious ships, part of the US Navy forces under US Pacific Command (PACOM), are actively used to support the *National Defense Strategy* through the combatant commanders theater security cooperation program. The *Cooperative Strategy for 21st Century Seapower*,

released in October 2007, also supports the objectives of the *National Defense Strategy*. The theater security cooperation program is designed to strengthen ties to regional nations and improve interoperability. The relatively new core competencies of humanitarian assistance and disaster response capabilities comprise the core of US soft maritime power and reflect an increase in emphasis on those activities that prevent war and build partnerships. The theatre security cooperation program encompasses short-range programs aimed at ending or alleviating human suffering.<sup>21</sup>

The major program for PACOM in this regard is operation PACIFIC PARTNERSHIP, an annual maritime medical aid deployment that alternates between being commanded from an amphibious ship or auxiliary or the San Diego based USNS *Mercy*. PACIFIC PARTNERSHIP was devised to continue the generation of soft power started as a result of the US Navy tsunami disaster relief response. PACIFIC PARTNERSHIP commenced in 2006 and has always included a mix of US and international military and some US and host nation non-governmental organisations.<sup>22</sup> There is significant involvement by the US Department of State in both the planning and execution of the PACIFIC PARTNERSHIP missions.

During PACIFIC PARTNERSHIP 2010 (PP10), *Mercy* was staffed with more than 1000 personnel from all 4 US military services and 10 partner nations, including Australia, Canada, Cambodia, France, Japan, New Zealand, Portugal, Republic of Korea, Singapore and the United Kingdom. Non-governmental organisations included East Meets West, International Relief Teams, Latter-Day Saint Charities, Operation Smile, Project Hope, Hope Worldwide, the University of California San Diego Pre-Dental Society, Vets Without Borders, and World Vets were also embarked at various stages of the deployment. JDS *Kunisaki* and HMA Ships *Labuan*, *Tarakan*, and *Tobruk* also participated in various phases.<sup>23</sup> It is noteworthy that from September, *Tobruk* took over from *Mercy* as the command ship for the remainder of PP10. This was the first occasion a non-US vessel had embarked the command team for the operation.<sup>24</sup> Although *Tobruk* had far less capability as medical facility, its capabilities as an amphibious ship, capable of delivering personnel and stores easily from ship to shore, and its ability to operate as a command and control platform, meant it remained a very valuable humanitarian aid asset during the mission.<sup>25</sup>

The following year, PACIFIC PARTNERSHIP 2011 (PP11) saw ships from the United States, Australia, Japan and New Zealand, and a helicopter and aircrew from France take part, along with health specialists and engineers from the US military, Australian Defence Force (ADF), Canadian Forces, Singaporean Armed Force and Spanish Defence Force over a four month period. The focus countries of PP11 were Tonga, Vanuatu, Papua New Guinea, East Timor and the Federated States of Micronesia. The health personnel were based in the amphibious ship USS *Cleveland*.<sup>26</sup> As had occurred in PP10, in the latter stages of PP11 the command ship role was transferred from the US Navy to HMNZS *Canterbury*.<sup>27</sup>

## Indonesia

Operation SURYA BHASKARA JAYA is longstanding domestic maritime humanitarian aid mission led by the Indonesian navy (TNI-AL) to provide primary healthcare, basic surgery and dental care to the dispersed Indonesia populace throughout its archipelago. Both TNI-AL medical personnel and Indonesian non-governmental organisation personnel take part. Medical personnel from the Republic of Singapore Navy (RSN) have participated in the operation since 1997. In 2002 the RSN deployed their containerised surgical system for the first time. In 2010 the Singaporean surgical system was deployed again in Ambon.<sup>28</sup> In 2011 it was conducted in Bangka Belitung. Since 2009, Operation SURYA BHASKARA JAYA has been held concurrently with the ‘Sail Indonesia’ events. In 2009, it was ‘Sail Bunaken’; in 2010 ‘Sail Banda’ and in 2011 ‘Sail Wakitobi’. The TNI-AL hospital ship KRI *Dr Soeharso* has participated since 2008. In 2010 Operation SURYA BHASKARA JAYA coincided with PACIFIC PARTNERSHIP, with *Mercy*, RSS *Endeavour* and JDS *Kunisaki* participating in Sail Banda in company with KRI *Dr Soeharso*.

For a brief period between 1994 and 1996 the RAN contributed individual medical and dental augmentees to Operation SURYA BHASKARA JAYA. They were embarked in TNI-AL landing ships for the duration of specific sectors of the operation and either worked from the ship or deployed short distances inland to conduct clinics. Unfortunately, due to the deterioration of relations between Australia and Indonesian over East Timor, RAN participation in the operation was cancelled after 1996.

## Japan

In 2009, Japanese Prime Minister Hatoyama, espoused a policy he called ‘*yu-ai*’ or fraternity boats. These boats, actually warships of the Japan Maritime Self-Defense Force (JMSDF), would be deployed on dedicated socio-civic and medical humanitarian deployments to Southeast Asia and Pacific Island nations. During his tenure as prime minister only one fraternity boat deployment occurred; that of *Kunisaki*, in company with *Mercy* as a part of PP10. The deployment did accomplish medical, public health and also Japanese cultural objectives in Indonesia, East Timor, Cambodia and Vietnam. In PP11 the JMSDF deployed a minor war vessel and did not deploy an amphibious vessel from which it could ‘force project’. That is not to say that the JMSDF does not have the capability to mount missions of the scale of PP10. They possess five vessels that by their design are very capable humanitarian assistance platforms. They are the two *Hyuga* class helicopter destroyers and the three *Osumi* class tank landing ships. Despite the nomenclature, both are through-deck vessels capable of multi-spot helicopter operations while the *Osumi* are especially suited to humanitarian assistance missions, due to the presence of a well-deck in each vessel enabling swift unloading of stores and personnel via landing craft. Notwithstanding the absence of their own warships, the JMSDF continues to provide medical personnel to PACIFIC PARTNERSHIP missions.

## China

Since the late 1980s China has progressively accelerated its efforts to generate soft power. In 2003 President Hu Jintao stated that 'Chinese culture belongs not only to the Chinese, but also to the whole world.'<sup>29</sup> In 2005, at the sixtieth anniversary summit of the United Nations, President Hu advocated a new Chinese idea known as 'Harmonious World'. Harmonious World is a mantra that calls for multilateralism, mutually beneficial cooperation (mostly economic cooperation) and inclusiveness.<sup>30</sup> Coinciding with this, China adopted its 'good neighbour policy'; a platform that supports widely recognised norms in the conduct of international relations.<sup>31</sup> It espouses the concepts of 'do good to our neighbours' and 'treat our neighbours as partners'.<sup>32</sup>

Amongst many other initiatives in the Harmonious World philosophy, it was announced in 2010 that the Chinese navy (PLAN) hospital ship '*Peace Ark*' (officially the *Daishandao*) would embark on a humanitarian aid mission to Bangladesh, the Horn of Africa and the African east coast. This mission was termed 'Harmonious Mission 2010'.<sup>33</sup> The first purpose built hospital ship for the PLAN, launched in August 2007 and commissioned in 2008, this *Anwei* class vessel, displaces 23,000 tons and is 180m in length. The ship is equipped with eight operating theatres and is fitted with a flight deck and hangar capable of operating a medium size helicopter. It is a part of the PLAN East Sea Fleet.<sup>34</sup> The ship, known colloquially as the *Peace Ark* during humanitarian missions, deployed to the African east coast and Horn of Africa in 2010, ostensibly to support PLAN counter-piracy operations, but undertook humanitarian missions in ports in Africa and South Asia. This latter phase of the deployment was termed 'Harmonious Mission 2010'. The ship deployed again in 2011 for 105 days to Central America and the Caribbean, again providing medical humanitarian assistance, with port visits in Jamaica, Cuba, Costa Rica and Guatemala. There is speculation that a second vessel in the class is planned.<sup>35</sup> These humanitarian missions are doctrinally being referred to by the Chinese as the 'diversification of naval missions' which is the application of soft power to achieve strategic objectives. The most common strategic objective with regard to the humanitarian assistance mission to Africa and the Americas is the establishment of favourable relations aimed at securing important economic agreements.<sup>36</sup>

## Discussion

In each of these examples, although the vessel or vessels that delivered the medical humanitarian aid were either grey or white hulled naval vessels, their medical complements were a mix of uniformed military personnel, civilian non-governmental organisations or government employees. Possibly only the United States and China may be able to mount such missions solely from their uniformed military services. The mix of primary healthcare, dental, surgical, tropical medicine, and public health specialisations can usually only be drawn from both military and civilian medical spheres.



In developing medical diplomacy from sea-based platforms, does it matter whether the vessel being utilised is a grey or white hull? US Navy experience has shown that there are operational pros and cons for the deployment of either amphibious/auxiliary ships or hospital ships. The former allows for greater access to difficult to reach or remote localities, but the latter allows for a platform providing greater medical specialty intervention and training of local host state medical personnel in a clinically controlled environment. Foreign nationals have very limited access to the interior spaces of warships, but unless accompanied by smaller amphibious craft and helicopters from other warships, hospital ships cannot reach their patient clientele unless berthed in a dedicated port. In the long run, regarding the generation of soft power, the type of ship may matter little. A study conducted by Alison Vernon in April 2008 for the US Center for Naval Analyses on host nation impact based on the 2006 and 2007 T-AH and LHA/LHD PACIFIC PARTNERSHIP humanitarian assistance deployments reveals that it did not matter whether it was a hospital ship or an amphibious ship as both ships functioned equally well in terms of positive impact to the host states.<sup>37</sup>

There are instances of non-governmental organisations providing maritime medical humanitarian assistance; however, these have been conducted from retired commercial cruise liners. Whilst providing some of the same benefits as naval sea-based medical humanitarian assistance, they are limited in their deployments by the cost of maintaining these vessels and basing their staffing solely on volunteerism. Nor do they have the reach of naval or marine platforms as they do not possess amphibious watercraft or helicopters to deploy inland or along the coast from established ports.

The examples provided above confirm that planned naval deployments for the purpose of providing medical humanitarian aid to developing nations of the Asia-Pacific region have risen significantly in the aftermath of the 2004 tsunami. Both the US Navy and the PLAN have demonstrated their ability to conduct these operations unilaterally, or as the lead partner in a coalition. Middle powers such as Australia, New Zealand, Japan and Singapore have demonstrated their ability to not only provide medical personnel, but also warships in medical diplomacy coalitions. Indonesia, in conducting Operation SURYA BASKARA JAYA for a number of years, had in its own way been generating soft power, domestically, to the ethnically diverse peoples of their archipelago. The scope is there for the continuation of this trend. Few navies in the Asia-Pacific region employ dedicated hospital ships; however, a great number are now commissioning amphibious ships and helicopter carriers that are very capable of providing medical and surgical capabilities that can be utilised in medical diplomacy missions both afloat and ashore.

It should be realised that maritime medical diplomacy in this form of medical humanitarian aid is not a total panacea to alleviate the health crises of the region. This can only be one element in multi-focal health campaigns, hopefully coordinated by host governments and international agencies, such as the World Health Organisation. It is also only be one element in comprehensive diplomatic and cultural campaigns

to generate soft power for the donor state. Ways of achieving this last point are for communication and cooperation between the military and aid coordination agencies of the government conducting the maritime medical diplomatic mission. In the case of coalitions, coordination between aid coordination agencies of the governments of coalition partners would achieve greater synergy. A recent example of this is that in December 2011 the Australian Agency for International Development (AusAID) and Japan International Cooperation Agency (JICA) signed a new partnership agreement on international development. It commits the two agencies to work more closely together to increase aid effectiveness and help developing countries lift their people out of poverty and share the benefits of economic growth. The AusAID Deputy Director General, Asia Pacific and Program Enabling Group, Mr James Batley, stated that Australia and Japan were already collaborating across a broad range of sectors and countries, particularly in the Asia-Pacific region. Through the new partnership, the two agencies have agreed to increase the exchange of information between them, and to enhance cooperation in sectors such as education, disaster risk management, transport and infrastructure. By working more closely together the two aid agencies envisage that they will be able to extend their global reach and influence, and assist developing countries in meeting the Millennium Development Goals.<sup>38</sup>

So what are the pros and cons of forming coalitions or acting unilaterally in maritime medical diplomacy? As has been shown above, with few exceptions in the Asia-Pacific region, maritime medical diplomacy has been carried out by a coalition of nations. Coalitions demonstrate international unity of purpose and are the best method of aggregating resources and expertise; however, even in coalitions there is usually a lead country. It is usually the country with the largest contribution of personnel and flagged vessels. With that can come the false impression that it is 'their deployment'. Until non-US vessels were involved in PACIFIC PARTNERSHIP any host nation citizen looking at the white or grey hulled vessels in the harbour, seeing the 'stars and stripes' could assume that this was a solely American mission. Of note in recent PACIFIC PARTNERSHIPS, the mission task group has contained not only multinational personnel, but also ships from Indonesia, Singapore, Japan, Australia and New Zealand and in what may seem a magnanimous gesture; 'command' has transferred from the US Navy to the RAN and RNZN. This illustrates the importance of the symbolism of 'show the flag' missions through countries that are in the immediate sphere of influence of specific coalition partners.

Finally, there are opponents who question the ethics of the use of naval forces in humanitarian missions at all. Many non-governmental organisations have the perception that military aid or government assistance delivered by the military is often seen as trying to influence an outcome favorable to their cause. This cannot be refuted. *Medicins Sans Frontieres* is renowned for being the most forthright and independent in this regard, continually chastising governments for what they see as encroachment into their domain. This situation can cause tension between international non-governmental organisations and the military and can in certain

circumstances put the non-governmental organisation members at risk. This issue is more prevalent in areas where there is a presence of anti-Western sentiment. Conversely, in the absence of such feeling, non-governmental organisations can, in most cases, be keen to benefit from the logistical capacity of the military to assist in the delivery of aid. This is particularly true of domestic non-governmental organisations who cooperate under umbrella agreements orchestrated by national aid coordination agencies, such as USAID, AusAID and JICA. Whilst antagonistic relations can never be excluded in humanitarian assistance missions, good prior planning and sound coordination amongst interagency organisations, international and non-governmental aid organisations, and partner nations can alleviate a great amount of friction during mission execution.<sup>39</sup>

## Conclusion

There has been a significant increase in the use of maritime medical diplomacy in the Asia-Pacific region since the disaster relief missions following the 2004 tsunami. Predominantly, this has been in the form of coalitions such as PACIFIC PARTNERSHIP. The recent inclusion of ships from Singapore, Japan, Australia and New Zealand in these missions may indicate that some participants may want to assert their own independent diplomacy under a coalition umbrella. Alternately, when engaged in coalitions such as PACIFIC PARTNERSHIP there may not necessarily be a conscious decision on the part of a contributing state to seek to generate soft power. In some instances the principle aim of participation is to increase naval interoperability with coalition partners. If this is the objective, national governments must be cognisant that soft power may still be unconsciously generated by these missions.

Successful attainment of humanitarian mission objectives, and by that generation of soft power, requires significant coordination of donor governments and military with host governments, aid coordination agencies, non-governmental organisations and the host state military. Therefore, this form of medical humanitarian aid differs in some respects from the acute nature of medical disaster relief deployments.

International non-governmental organisations complain that humanitarian development medical aid is being prostituted on the grounds of diplomacy. There are indeed some ethical concerns over the use of medical aid as a diplomatic tool, but there is a counter argument. Smaller tailored non-governmental organisations that do align themselves with either the host or donor governments would not have the wherewithal to perform the health services they do without the transport, coordination and logistic capabilities of naval and marine forces.

As a number of nations in the region have the naval and civil resources to mount medical diplomacy missions there is a strong likelihood that the frequency and scale of these maritime medical diplomacy missions are likely to be maintained and potentially increase. The relationship between coalition missions sponsored by

the United States and unilateral missions by an increasingly asserting China will be interesting to observe. The PLAN has not mounted such missions in the Asia-Pacific as yet. They have recently deployed to the Caribbean and Latin America, a region already covered by the US Navy Operation CONTINUING PROMISE medical diplomacy missions. Therefore, there is every possibility that China will exercise maritime humanitarian medical development missions in the future, at least out to the second string of pearls. Maritime medical diplomacy missions may become a growth industry!

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# Naval Engineering: A Lead Indicator of National Security and Prosperity

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*Mark Purcell*

It is the capacity for maintenance that is the best test for the vigour and stamina of a society. Any society can galvanise for a while to build something, but the will and the skill to keep things in good repair, day in day out, are fairly rare.<sup>1</sup>

Eric Hoffer

Naval capability, as a measure of national security and prosperity, needs an industry that can design, construct and maintain complex platforms which can undertake and sustain sea control, sea denial and maritime power projection when required. Naval engineering spans the entire lifecycle of these capabilities and is a measure of both national security and prosperity as it seeks to assist in the development of the need, derivation of clear requirements and providing appropriate management and governance throughout the acquisition, sustainment and disposal phases. Naval engineering is therefore a lead indicator of national security and prosperity.

What is naval engineering? It is about focusing on the design, construction and maintenance of naval materiel, so that the technical decisions that carry risk, and made across the RAN, Defence Material Organisation (DMO) and defence industry are managed through the Naval Technical Regulatory System. All of these contribute to the capability manager's ability to formulate a maritime strategy encompassing sea control, sea denial and maritime power projection.

A fundamentally maritime strategy for defending Australia is a logical consequence of Australia's strategic geography, its relatively small population and its comparative advantage in a range of technologies.<sup>2</sup> A credible Australian maritime strategy needs more than sufficient numbers of naval vessels suitably configured and equipped for operations in the Australian environment (force structure). Those vessels must also be ready to undertake operations after a given period of notice and be able to sustain operations for a given period of time (preparedness). To this end those vessels must be maintained on a routine basis, repaired if they are damaged, upgraded so as to remain militarily competitive and adapted to meet the requirements of specific missions.

Fundamental tasks for navies in the 21st century are dealing with disorder and providing maritime power projection.<sup>3</sup> The ability to conduct these strategic military tasks provides the basis for the naval contribution to national security. A navy's ability to conduct these tasks is a measure of its capability and combat effectiveness of which a key component is its materiel readiness. Materiel readiness is not only

the ability of a navy to sustain a capability on operations but is also a measure of its ability to successfully undertake complex engineering acquisition and sustainment, from the initial stages of developing the need, deriving requirements, managing the acquisition and then sustaining the capability throughout its life, including upgrades through to disposal.

## Engineering Self Reliance

A component of national prosperity is the strength of its industrial base. For technologically advanced capabilities such as naval ships, submarines and aircraft, the industrial base is dependant on a strong engineering sector and the capability of industry to undertake complex engineering projects. The ability of industry to support these complex projects is heavily reliant on its ability to undertake design, construction, maintenance and upgrades of complex platforms through their lives. Navy engineering needs to support the development of a clear need, requirements and governance throughout acquisition and sustainment to ensure industry is in a position to successfully deliver and sustain naval capability.

Procurement, sustainment and industry support are critical to defence capability and operational effectiveness. The RAN requires a deep, diverse and secure supply chain to acquire and maintain the capabilities it needs, and Defence procurement and sustainment systems must continue to be as flexible and responsive as possible.<sup>4</sup> Our ships and aircraft are valuable capital assets that operate in unforgiving environments. Keeping these assets in acceptable operating conditions is vital to their ability to accomplish assigned missions and reach their expected service lives. Timely external maintenance, based on an engineered assessment of expected material durability and scoped by actual physical condition, will preserve our existing force capabilities. Continued investment in external maintenance is essential in achieving and sustaining the force structure required to implement our maritime strategy.

The RAN is required to sustain an engineering professionalism to maintain its ships and systems to be effective, safe and efficient. Since the late 1970s, successive Australian governments have directed the RAN to develop self-reliant solutions to its unique strategic circumstance. The most visible outcome of this policy has been the rebirth of an Australian warship building industry beginning with the two *Adelaide* class frigates built at Williamstown followed by the *Collins* class submarines (Adelaide), the *Anzac* class frigates (Williamstown) and finally the *Armidale* class patrol boats in Henderson, Western Australia.<sup>5</sup> Even today the government is showing considerable commitment to self reliance with the building of the *Hobart* class destroyers in Adelaide.

One of the objectives in promoting Australian industry involvement in military projects is to transfer development and design work to Australia as well as manufacturing activity. Only through an 'in-country' design capability will Australian companies

effectively compete in the international market. The problem here for Australia remains one of volume and recovery of costs. A possible answer for industry is concentration on niche markets.<sup>6</sup> It is clearly desirable that the RAN acquires ships and equipment which best suits our unique requirements. Additionally, the pace of technological change demands that ships and weapon systems be improved over their life, and the ability to do so rests largely on having been involved in the complete cycle of research, development, design and progressive adaptation.

For the RAN to be an informed customer, it has a need to be involved in the design process. However, the skills and experience required for development and design are costly to produce and dissipate quickly unless these skills are considered essential. The RAN must consider the development and maintenance of a skilled workforce design base and whether particular areas of excellence need to be established within local industry or whether it would be appropriate to form a single national design agency upon which all sections could draw.<sup>7</sup> Irrespective of the decision, a technically competent navy engineering workforce, able to provide guidance to commercial designers and convey confidence to naval commanders in respect to ship design standards and practices, is an essential ingredient for a competitive Australian naval shipbuilding capability.

Along with the concepts of self reliance, economic rational analysis has pointed towards the desirability of a defence organisation to be more tightly integrated with and related to the private sector infrastructure of the nation.<sup>8</sup> However, devolving engineering expertise to industry over the past two decades has created a number of compounding effects within the RAN. Any form of contracting demands increased skills of technical articulation and contract management on the part of the naval engineer. Unfortunately these skills are not currently taught to naval and DMO engineers. The RAN has discovered that the increased contract management activity devoted to commercialisation has led to significant failures in acquisition and sustainment of navy capabilities.

Despite the navy being essentially a technical service, *Australian Maritime Doctrine* is quite clear about the source of naval capability 'It is not simply technology ... but rather the way that this technology is employed. It is therefore Navy people who generate the real capabilities'. This is as fundamentally true for the technical and engineering categories of the RAN as it is for all others. The inherent dangers of life at sea, the requirement for a disciplined force, the need for ethical leadership at all levels of naval service are common requirements. In particular, a high level of collective and individual training to prepare all members of the RAN for maritime combat allows technical and engineering sailors and officers to fully contribute to the fighting effectiveness of both individual units and joint maritime forces.<sup>9</sup>

The RAN continues to need maintenance and engineering capability to manage complex technology in operational circumstances at some distance from home bases in Australia. Thus we need to raise, train and sustain a skilled workforce at



levels from field technician to design engineer. However, the growing dependence on commercial support agencies threatens to remove much of the opportunity to develop and sustain such skills.<sup>10</sup>

Professional mastery for the RAN includes technical mastery for all personnel. This means a new level of technical mastery in the warfighting skills of its personnel as smart operators and users of systems but also as smart advisers to others on the use of their systems so that their individual mastery can flow on to those around them, those above them and those who they lead. In the RAN, over the past ten years, we came to view engineering as an overhead and not the key enabler that it is in a high technology organisation.

Engineering is not only a key enabler for the RAN to fight at sea, but also a key participant in the fight at sea. When a ship goes into combat it is self-sufficient in engineering personnel, knowledge and stores which allow it to absorb considerable damage and still float, fight and move. The resilience of warships in battle is very much the province of the engineers as they are integral to the maritime force's combat power and therefore should be viewed 'not as an overhead but as value adding'. The engineers are also subject to the same threats as the rest of the ship, and the values we require of all our sailors - honour, honesty, courage, integrity and loyalty - are just as necessary in the technical department.

In order to improve engineering self reliance, significant effort is being expended in the area of engineering function as part of the Rizzo Reform Program. This incorporates a number of recommendations, including, but not limited to 'rebuild navy engineering capability' (R17), 'monitor and audit for technical compliance' (R14), 'foster engineering talent' (R19) and 'rebuild fleet support units' (R20). All of these when fulfilled will contribute towards an organisation which is reorganised, less fragmented and has clear authority and accountability. Additionally, the organisation (especially fleet support units) will be staffed by competent personnel with the necessary deep technical skills who can provide the pool of expertise that can be used to supplement organic and external maintenance activities in the fleet.<sup>11</sup>

Professor Geoffrey Till has noted '...to be operationally significant, high grade technology needs to be maintained and operated effectively ... simply having it is not enough'.<sup>12</sup> Within a naval platform - a ship, a submarine or an aircraft - the role of the engineering department is therefore well defined. It is responsible for having all the platform's systems maintained in a state of efficient working order and in readiness for immediate use.

Australia has all of the essential ingredients to have a strategic and cost-effective capability in the maritime defence sector, moving into the long-term, and particularly at a time when changing global strategic realities demand that Australia should achieve self-sufficiency in this area. However, it is equally clear that lack of long-term thinking has consistently squandered this capability, and consistently - at great expense to the taxpayer - reverses the momentum toward this essential asset development.

## Australian Industry Capability

‘Sustainability’ is the ability of a military force to continue operations for a specified period and depends on the level of maintenance and the availability of consumables like ammunition and spare parts. Australian industry supports Australian Defence Force (ADF) sustainability by repairing and maintaining its equipment and by supplying consumables like ammunition.<sup>13</sup>

Australia has consistently underplayed its skills in the strategic industrial base by willingly embracing the role of junior partner in its own defence projects. This has added cost to the projects and allowed the priorities and parameters implicit in imported major systems being imposed on Australian requirements. Given that Australia faces strategic realities which demand increasingly self-sustaining leadership in national security affairs, it is vital that Australia should recognise its skills in the national security industrial base, catalogue them, and begin to develop an over-arching strategic industrial strategy for the future.<sup>14</sup>

Australia has all the essential ingredients to have a strategic and cost effective capability in the maritime defence sector. However, a lack of long term thinking has squandered this capability. The Rizzo review highlights many causal factors for our inadequate maintenance and sustainment practices such as:

- poor whole of life asset management
- organisational complexity
- complex and blurred accountabilities
- poor compliance and assurance
- a hollowed out engineering function
- resource shortages in DMO systems program offices
- a culture that places the short term operational mission above the need for technical integrity.

The design and construction opportunities for Australian industry are the major focus of the *Defence Capability Plan* and reflect the potential opportunities for Australian industry to participate in acquisition activities. Through-life support (maintenance and sustainment) opportunities should also be given the level of visibility that our major capital projects receive through the *Defence Capability Plan*. The government expects Defence to ensure best value for money in spending, based on open and effective competition and that, consistent with the principles of value for money and the need to consider off-the-shelf solutions, its policy is to ensure that as much of the Defence budget is spent in Australia as is practical.

Additionally, the government also seeks to improve Defence self-reliance through maintaining a focus on the local provision of a broad set of strategic industry capabilities. Through the application of the Australian Industry Capability (AIC) program, Defence seeks to ensure that Australian defence industry is given the opportunity to be part of all contracts over \$50 million, or where the contract involves a designated strategic industry capability. In such contracts, the request for tender will include industry requirements, and tender responses will be expected to include an AIC plan. Through this system, Defence seeks to maximise Australian industry participation in the acquisition and sustainment of ADF capability and to achieve the required strategic industry capability outcomes where this represents value for money.<sup>15</sup>

The government has made a commitment to build a networked-ADF through progressively delivering networked maritime, land, air and intelligence, surveillance and reconnaissance domains. Government initiatives to build in Australia provide opportunities for long-term benefits. Some level of organic design capability must be nurtured such as is evident in the collaborative approach being undertaken by the AWD Alliance. As we look forward to 2030 and the capabilities highlighted in the 2009 Defence White Paper, there are many smaller projects and phases that together deliver many of the essential support capabilities for the ADF. These projects provide capabilities that enable other major systems to realise their full effectiveness and provide extensive opportunities for Australian small to medium enterprises.

Industry partnerships are a key component in the life cycle management of naval platforms. Ship maintenance is a long-term need and warrants long-term partnerships with industry, ideally for the life of the ship. It should be acknowledged here that some platforms have transferred, or are currently in the process of transferring from transactional to longer-term support arrangements, such as the group maintenance contract in place for the *Anzac* fleet<sup>16</sup> and the in-service support contract for the *Collins* submarine fleet.

A variety of equipment sources and changing technology leads to improving engineering and logistic processes. The focus on acquiring weapons systems and platforms appropriate to the unusual (and not unique) Australian requirements has led to procurement of equipment from a range of foreign sources. This has added significantly to the challenge for naval engineering management. The greater the variety, the more adaptable our engineering skills and maintenance practices need to be.

## Conclusion

Australia, as an island nation, is highly dependent upon the sea for security and economic prosperity. A strong and vibrant maritime sector, both naval and civil, is critical to our nation. Australian government policy requires both a coherent defence strategy and an enhanced defence capacity meaning the RAN will continue to be an

indispensable tool for our government, to ensure that it is capable of political action. The government must ensure unrestricted, secure, inexpensive maritime trade to help ensure the security and prosperity of our country and our people. To facilitate this, Australian industry will be called upon to involve itself more intensively in the support, maintenance and development of the ADF.<sup>17</sup>

Engineering is the fundamental core of the capability lifecycle process. From capability requirement through construction to acceptance into naval service, naval engineering must maintain an input and manage the technical risk across design, construction and maintenance activities if the RAN is to understand what it is getting in the end product. Since the demise of a ship design capability in the Department of Defence, and later the sale of naval dockyards, the RAN has much less input into, and understanding of, engineering design and construction.

The RAN and DMO have developed and evolved inadequate processes for the sustainment and maintenance of the fleet as highlighted by the Rizzo report. The Rizzo Reform Program has now been established and is addressing a range of issues covering the systemic breakdowns across the RAN, DMO and industry. The challenge for naval engineering is to keep pace with technology, and what industry can deliver, whilst not forgetting the lessons of the past. RAN engineers, whether they located in a project office, conducting maintenance or at sea, must be the leaders of RAN technical mastery and communicate this with industry in order to provide a navy that can confidently go to sea.

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# Australia's Future Submarine

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Rowan Moffitt

I was interested to see the flurry of media interest in submarines over the Christmas and New Year period here at home. There was quite a deal of discussion of a range of issues but as seems usual, not much of the discussion about the Future Submarine talked about the core question - what does Australia want submarines for? What do we want them to do, where and for how long? And, of course, the *Collins* class submarines got the usual going over.

Those two topics - submarines present (that is *Collins*) and future - are both dimensions of the future that are not easily separable from one another. To get to the future, whatever that might be, we must start from the present.

I am reminded of the Australian tourist in Cornwall asking a farmer for directions to London. 'Best you don't start from here...' came the answer. We might say that too but start from here we must.

At this stage we are charting for government the options for getting from here to their Defence policy objective of 12 Future Submarines.

I will talk a little bit later about where we are now but as a navigator I feel most comfortable starting with the destination. I know where we are but where we are going needs to be clearly and comprehensively identified before I can do a decent job of scoping the options for getting there.

Now we all know about the plan for 12 submarines more capable than the existing *Collins* class but in the detailed statements about the future submarine capability they seek, in the strategic hedging section of the 2009 Defence White Paper, paragraph 3.21 identifies circumstances that might justify acquiring more than 12. Also, paragraph 9.9 of that document says:

The construction program for the Future Submarines will be designed to provide the government with the option to continue building additional submarines in the 2030s and beyond.

This is a really important instruction, one with significant implications for the destination and therefore the nature of the journey. Let me explain.

Broadly speaking, the process for getting to the first of a new class of submarines - no matter what they are is a process that will have four fundamental blocks of activity - although the boundaries between them will not be as sharply defined as my graphics will suggest.

The first is defining the objective - what the key capabilities and performance characteristics are that we want, and why, and getting government agreement on all that. The White Paper is the vision but that needs much more detail before it can be turned into a submarine. Government agreement will be sought on the specifics as we identify them.

This definition phase can take some years to do properly and in that time we have to develop a pretty good feel not just for what we want but also for what options, pathways and trade offs might exist and what the broad implications of each option would be.

Interestingly, project management academics tell us that skimping on this part - the bit where we define clear objectives and properly complete the capability definition work - is a key reason why big programs fail.

In this phase, there is some focused cost-benefit analysis done, both by my team but before that too. During the Force Structure Review and development of the 2009 Defence White Paper much work was done examining the alternatives to submarines, the capability those alternatives might deliver and their cost, risk and schedule profile. During that process options other than submarines were considered although the detail of that work was not published, being highly classified.

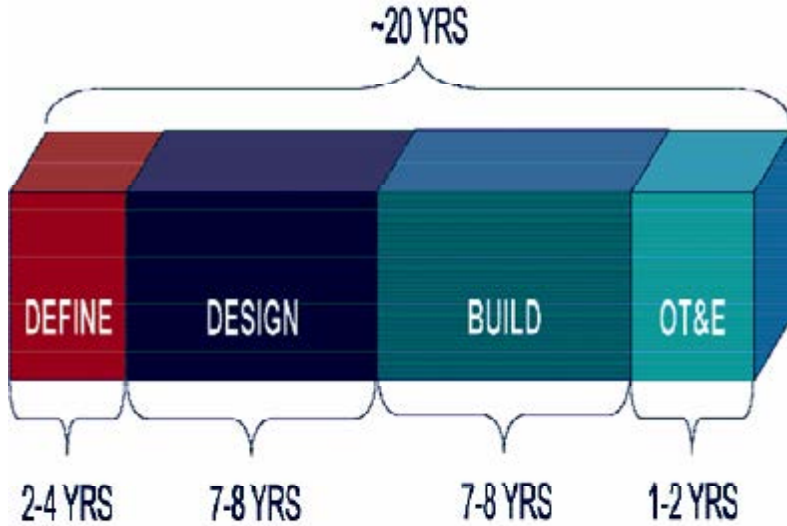
Once government agrees what capability it wants and broadly how we will go about getting it, there will be some design work to be done - not all that much if we buy something off the shelf, quite a lot, over a longer period if a new design is decided upon.

A new submarine design might take 7-8 years of effort or, as the RAND Corporation has told us, between 8 and 12 million man hours of design work. Once the design has reached a sufficient level of maturity and completion, construction can begin.

Submarines typically take between about 4-8 years to build. The next submarine Australia builds will be the first in over a decade so it is reasonable to expect that it will probably take us closer to eight than it will to four years to build it - regardless of the submarine we build I would suggest.

Operational testing and evaluation will be done once the submarine is handed over to the RAN, to make sure the users know exactly what capability has been delivered and have the time to work out how best to use it. We cannot consider that we have an operational capability before this work is done.

So, for a submarine of a completely new design, the longest to execute of all the options, it would take around 20 years from starting the definition process to having the first one of the new class ready for operational use (see Figure 1). This advice is consistent from experienced people we talk to overseas and also assumes starting with a ready work force.



*Figure 1: Submarine Development Process*

Follow on submarines should take somewhat less time to build than the first, as the builders climb the learning curve. However, that does not necessarily translate to a quicker or increasing delivery rate. In Australia's case, the delivery rate for follow on submarines must take into account how quickly the government wants the force size to grow to 12 and a couple of other important factors as well.

First, we are required eventually to double the size of the submarine force so the RAN has to grow more crews for this larger fleet, starting from today's lower than optimum start point. There is no point in delivering submarines if the crews for them do not exist and growing those people takes time. For example, to grow just 1 new commanding officer you need to start with 8 people off the street and work on them for about 15 years. This suggests that we might need to deliver the new submarines more slowly than we have seen in past naval programs.

Second, if we deliver the new submarines at, say - 2 year intervals - the build program would take 24 years (see Figure 2). New technology will emerge in that time that we will want to incorporate into the submarines as we build them. For example, we are on the threshold now of a major advance in submarine battery technology - from lead acid batteries to more exotic materials like lithium. When it is mature, this new technology promises considerable operational performance improvements but will also demand potentially significant design changes. There will be other advances in technology over the course of a long build program such as we face. Even now, we can see quite a few promising technologies emerging. So, if we do not refresh the design periodically to incorporate new technology as we go, the risk is that the later of the 12 submarines be obsolete when we deliver them.



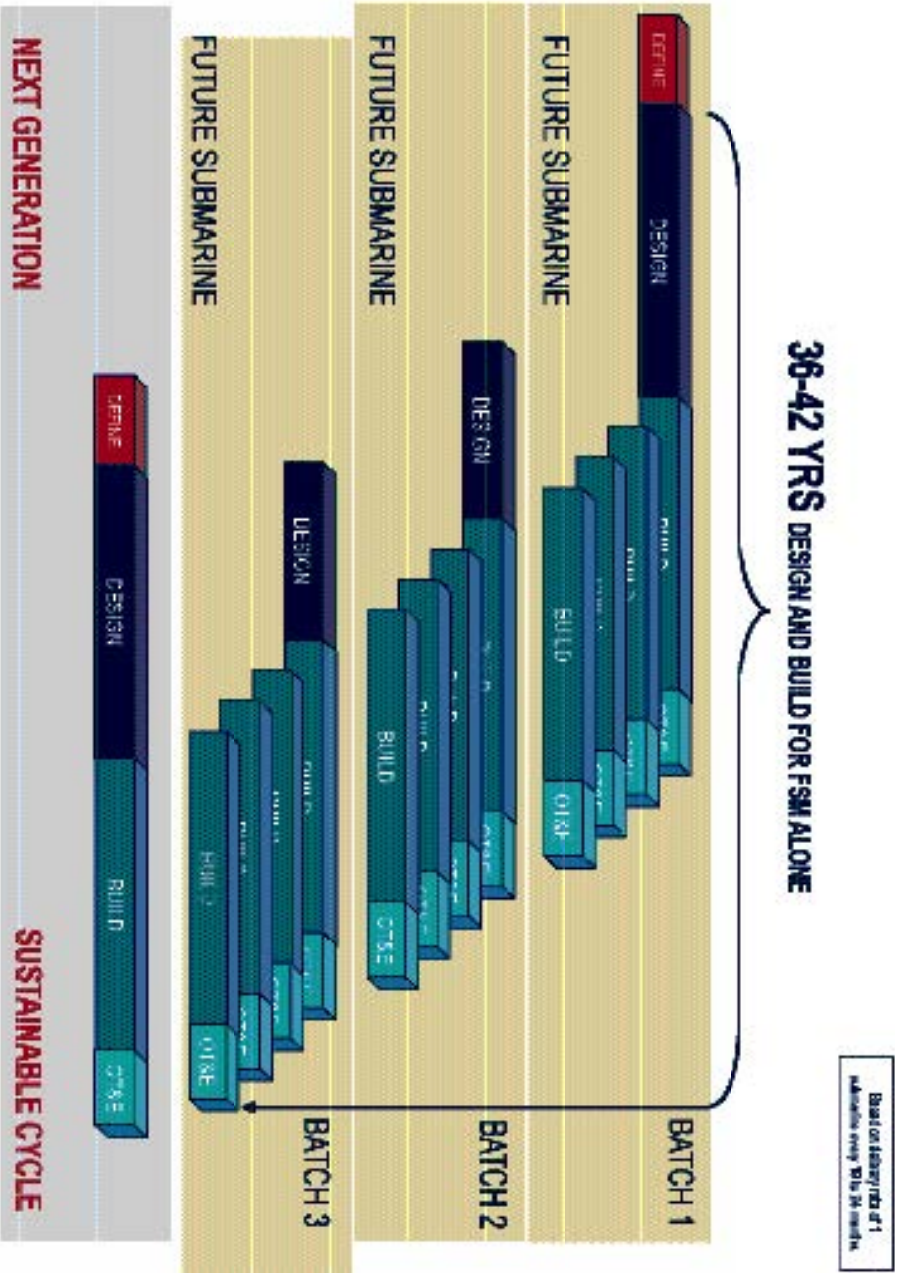


Figure 2: Submarine Force/Industry Cycle

This factor suggests a need to build in batches with some design activity being devoted to each batch. Based on our current model of a 30 year life of type, as we deliver submarine number 12, submarine number 1 will be approaching retirement age so we will have to start building a replacement - and so *ad infinitum*.

So, we also need to plan for continuous design development; in a program that will run for close to half a century. We will move into the major maintenance and upkeep phase well before the build phase is finished. So we will need not only to be evolving and building new submarines, but maintaining the older ones and the newer ones concurrently.

Experienced advice tells us that building and sustainment are activities that demand some skills sets that differ significantly, especially in planning, schedule optimisation and management. We must therefore make sure that we structure the program in a way that acknowledges that fact.

So then, once it starts, the Future Submarine Program will run for a very long time and perhaps not finish. Regardless of that, it will demand the successful establishment and management of three quite different functional activities concurrently, each one very challenging in its own right - design, building of new submarines and upkeep of the submarines in service.

So what we face with the Future Submarine Program is not just about building 12 submarines - it requires that Australia assemble the elements of capability needed to sustain a complex and demanding, high technology enterprise. That enterprise must exist regardless of which submarines we acquire and regardless of which elements we decide should be in Commonwealth ownership, available commercially in Australia or done on our behalf overseas.

So for these reasons, and others, the Future Submarine Program is one unlike any other major Defence equipment capital acquisition program we have seen. If you look at all of the other modern Australian Defence Force (ADF) acquisitions, we start the program, deliver the equipment, close the program and move into the sustainment phase. We buy things, they are delivered and we move on to something else.

The Future Submarine Program cannot be like that - which suggests to me that we have to think differently about it - again, regardless of the submarine we choose. For a start, while it will certainly cost a lot of money, that funding will be spread over decades - a relatively small amount on an annual basis compared with the total program cost. It will be much more of a cash flow management matter that requires new thinking about budgeting, than it is a question of total cost and the whole notion of total cost has less practical meaning. How many people have a clue how much we have spent to have a destroyer and frigate force of about 11 or 12 ships over the last 40 or 50 years?

The Future Submarine Program is also one that gives us the opportunity to consider new paradigms. For example, I mentioned 30 year life of type a minute ago. That is what we have done historically with ships. With the pace of technology these days that is a very long time; so historically at some stage during that life, sometimes several times, we have given them a major upgrade to insert new technology and capability. These upgrades have been more or less successful but they have always been expensive and always taken ships out of service for long periods. Major upgrades in submarines are necessarily harder to do because it is harder to get at things so the whole activity is inherently more difficult, costly, risky and long.

An alternative might be to design the submarines for a shorter life of type in the first place and not do major mid-life upgrades at all. Initial rough estimates by my team around a submarine service life of 20 years suggest this approach might cost in the order of 5-8 per cent less through life, which is not to be ignored I would think.

Other benefits might accrue from such a model. The lower average age of the fleet could reduce upkeep costs and as we know only too well, old ships are proportionately much more unreliable and expensive to maintain than young ones. Submarines are no different.

There would no longer be a need to have submarines out of service for long periods in upgrade - upgrades would be delivered in successive batches of new submarines, with the number of submarines in each batch varied to suit the pace of technology development.

Regardless of whether we take this approach or some other though, the very different nature of the Future Submarine Program compared with other Defence acquisitions, and the opportunity if not necessity for doing things differently, should prompt us to think carefully about the approach we take to what the government clearly sees as a vital strategic military capability for Australia's future security.

There seems little doubt that one challenge we will face stems from the fact that in a fully mature state the future submarine capability enterprise will require the RAN and Australia's naval shipbuilding industry sector, and the other elements of the national machinery we decide to own ourselves to support them, to be bigger than they are today. However, the workforce analyses I have seen show they need not be dramatically bigger. We are talking thousands of people in total, not tens of thousands.

In this context I was very heartened late in 2011 when talking with the Chairman of Skills Australia, a man who knows a great deal about Australia's industry skills base, to find him confident in Australia's ability and capacity to build the Future Submarine Program.

Another key difference will be that the size of the submarine force will be such that for the first time in any part of the navy's capability, we have the chance to provide the steady, reliable and predictable work flow needed to sustain the industry over the long term - and to do that without the need for exporting, which would be very problematic.

Undoubtedly though, all these attractions aside, we will face challenges and it will not be easy. We must decide carefully what makes the most sense for us to own and control and what we can safely, reliably and cost-effectively have done by others - and the risks associated with such decisions.

It goes without saying of course that no matter where those elements are, one way or another Australia will pay for them.

When we had the *Oberon* class submarines, we became acknowledged as competent submarine operators and maintainers. It generally worked well for us back then, in part because we could draw on the expertise of not only the *Oberon* designers, builders, original equipment manufacturers and those organisations performing maintenance work on them overseas, but the parent operating navy as well.

All those elements are critical to having a successful capability outcome. When the Royal Navy stopped using the *Oberon* it quickly became much harder for us because we had to rely on ourselves much more.

With the *Collins* class there was no other navy using our submarine, no one else performing maintenance work, no one researching solutions to problems that arose in service and no one who understood how we used the submarines and why.

Until *Collins*, the RAN had no real experience of just how significant and extensive these parental obligations are for a navy, or how critical to keeping the capability effective it was to ensure the parental obligations were met. There are few complex ADF capabilities, if any, that put us in this situation.

Australia built the *Collins* class submarines to world class standards of quality and according to Skills Australia's chairman, we can do that again. Though, if we are going to have a real submarine capability that we can rely on in the future, then we must make sure that the various parental responsibilities are properly met.

Be they design, build, maintenance or operation related, be they met by us or someone else, we must structure the enterprise knowing how all the responsibilities will be met, by whom at what cost.

In short, we must mature from being a navy operating a fleet, to a nation owning a navy.

Some of the work we have done so far helps us understand exactly where we currently stand on the pathway to that maturity. The RAND report entitled *Designing Australia's Future Submarine* paints us a fairly clear picture in respect of designing a submarine in Australia. I want to stress here that RAND assessed our capacity and capability to design the future submarine, not to build it.

The RAND report makes it clear that we will have a heavy reliance on skills and technology transfer from overseas to close the gap between Australia's capacity and capability today and what is needed to execute successfully the Future Submarine

Program. We will need to do more than just develop acquisition options. We must also select the best partners to help deliver the total capacity and capability we need to do the whole job.

We have learned a lot from the *Collins* experience in combat systems, weapons, signature management, logistics, maintenance, engineering and so on - and by 2020 we will have learned still more. What we will need are partners able and willing to help us go to the next level - to the level of being the parent navy, so that we can produce the outcome the government wants - a sufficiently capable submarine force that is available, reliable, cost effective and affordable.

Expressed another way, industry players need to understand that to win the right to profit by being a part of the Future Submarine Program they must not just supply designs or products or expertise, they need to be willing to transfer their skills, technology, intellectual property and perhaps even workforce for a time, to Australia.

Companies with the most relevant capabilities and sufficient capacity who are also willing to share with others, some of whom might conceivably be natural competitors, in a tightly controlled intellectual property environment will be the ones most likely to profit.

These are some of the lessons from our experience of the *Collins* submarine program and they influence the advice I give to government.

I will close with *Collins* because that is where we are today and from where we must begin our journey to the Future Submarine. I think it is worth remembering two things.

First, Australian tradesmen and women built the *Collins* class submarines and they did so very well - just as we have built complex naval ships well in Australia for almost a century. There is no problem with *Collins* that was caused by poor Australian workmanship. The problems were all either a product of our inexperienced decisions early in the program or they were imported from overseas. The thousands of Australians who built the *Collins* submarines richly deserve great credit for what they did so well. We can do that again.

Second, Australian submariners are acknowledged as having achieved remarkable things over almost a century and are still doing so today, in the *Collins* class. Australia's submariners also do not get the credit they deserve for what they achieve with what they have.

# Australian Navy Shipbuilding

*Henry Ergas, Mark Thomson and Andrew Davies*

On current plans, the RAN will acquire 12 conventional submarines, 8 frigates and 20 multi-role offshore patrol vessels over the next 20 years.<sup>1</sup> In each case, the vessels will be substantially larger and more sophisticated than those they replace, and in the case of the submarines more numerous by a factor of two. Apart from the submarines - which the government has promised to assemble in South Australia - it is yet to be decided where these new vessels will be built.

There is a lot at stake: not only is every class of combatant in the RAN being replaced, but we estimate that the total program will cost at least \$40 billion.<sup>2</sup> One would hope that great care will be taken when comparing the costs, risks and capabilities of competing options - including those between local and overseas construction. Regrettably, despite a succession of reports recommending rigorous cost-benefit appraisal of major defence acquisitions, this cannot be taken for granted. The decisions for local construction of both the new submarines<sup>3</sup> and the under-construction *Hobart* class destroyers (DDG)<sup>4</sup> occurred very early in their development as projects - arguably long before sufficient information was available for an informed decision. In contrast, the government retained domestic and foreign options for the *Canberra* class amphibious ships (LHD) acquisition up to the point of contract award.

Pre-emptive decisions about domestic versus foreign sourcing are hard to reconcile with the government's stated policy of properly comparing the options for major defence acquisitions under the two-pass process. We can only conclude that in the case of the submarines and destroyers, the government of the day had great confidence in the relative merits of domestic construction. No doubt, that confidence was encouraged by the lobbying efforts of those with a vested interest, including local defence industry, state governments and unions. The purpose of this paper is to test that confidence by comparing the costs and benefits to Australia of domestic naval construction *vis-à-vis* imports. Our focus will be on the acquisition of major platforms, as that is where the greatest costs are incurred and where domestic supply options are most limited. Oceanographic survey vessels are also not covered because of their essentially civil function.

## Sourcing Australia's Defence Assets: Historical Perspectives

In considering the role and future of Australian naval shipbuilding, it is useful to start by examining the broad trends in the sourcing of Australia's principal defence systems.

For much of the 20th century, Australia manufactured, or at least assembled, a significant share of its defence equipment needs - on occasion even going so far as to develop and design its own weapons systems. Over time, however, the trend has been to rely more on foreign sources for major platforms and their component sensors and weapons. The last tank to be built in Australia was the locally designed Sentinel in World War II. The last artillery pieces built here were the British-designed 105mm Hamel guns in the late 1980s, and the last mortar tube was the British-designed 81mm F2 in the 1960s. The tanks and artillery have since been replaced by imported equipment, and it is likely the same will occur for the mortars. The situation is similar for fixed wing aircraft. The last Australian designed and built combat aircraft was the Avon Sabre which ended production in 1961, and the last Australian designed military transport aircraft built was the Nomad in 1985. While the F/A-18 fleet was assembled in Australia from imported components in the late 1980s, its replacements (the F/A-18E Super Hornet and F-35 Joint Strike Fighter) have been or are being built overseas. Only helicopters continue to be assembled in Australia today, albeit almost entirely from imported components.<sup>5</sup>

Australia's shift to foreign sources for its defence materiel is consistent with international trends. As the unit cost of weapons systems has grown over time - significantly outpacing inflation - countries have purchased fewer assets and have then retained them longer. The number of weapons produced has therefore fallen steadily, eroding economies of scale and boosting the share of costs due to first costs, that is the costs of design, development and initial production. One consequence is to increase cost risk: first costs are notoriously difficult to predict for highly complex systems; as these costs come to dominate total costs, total costs themselves become more uncertain; and even small changes in the length of production runs (as numbers commissioned are adjusted in the light of budget constraints, macroeconomic circumstances and program out-turns) can lead to large shifts in unit costs per commissioned item.

Combined, the decline in the number of assets purchased, the rising share of fixed costs in total costs and growing cost uncertainty have led to widespread industry consolidation and an increasing number of multinational programs. In light of these trends, it simply has not made sense for Australia to go it alone and manufacture, let alone develop, its own systems. Where it has tried, as with the *Collins* submarines, ALR-2001 radar warning receiver, Super Seasprite helicopter, high frequency modernisation project and airborne early warning and control (AEW&C) aircraft, the efforts have been plagued by delays, substantial cost overruns and cancellations.

However, naval shipbuilding has not followed the general trend of increasing overseas sourcing. As Figure 1 shows, following a surge in domestic construction during and immediately after WWII, domestic construction abated to the point where key combatants - destroyers, frigates and submarines - were imported from overseas between the mid-1960s and 1985. Then, following the sale of the government's long-

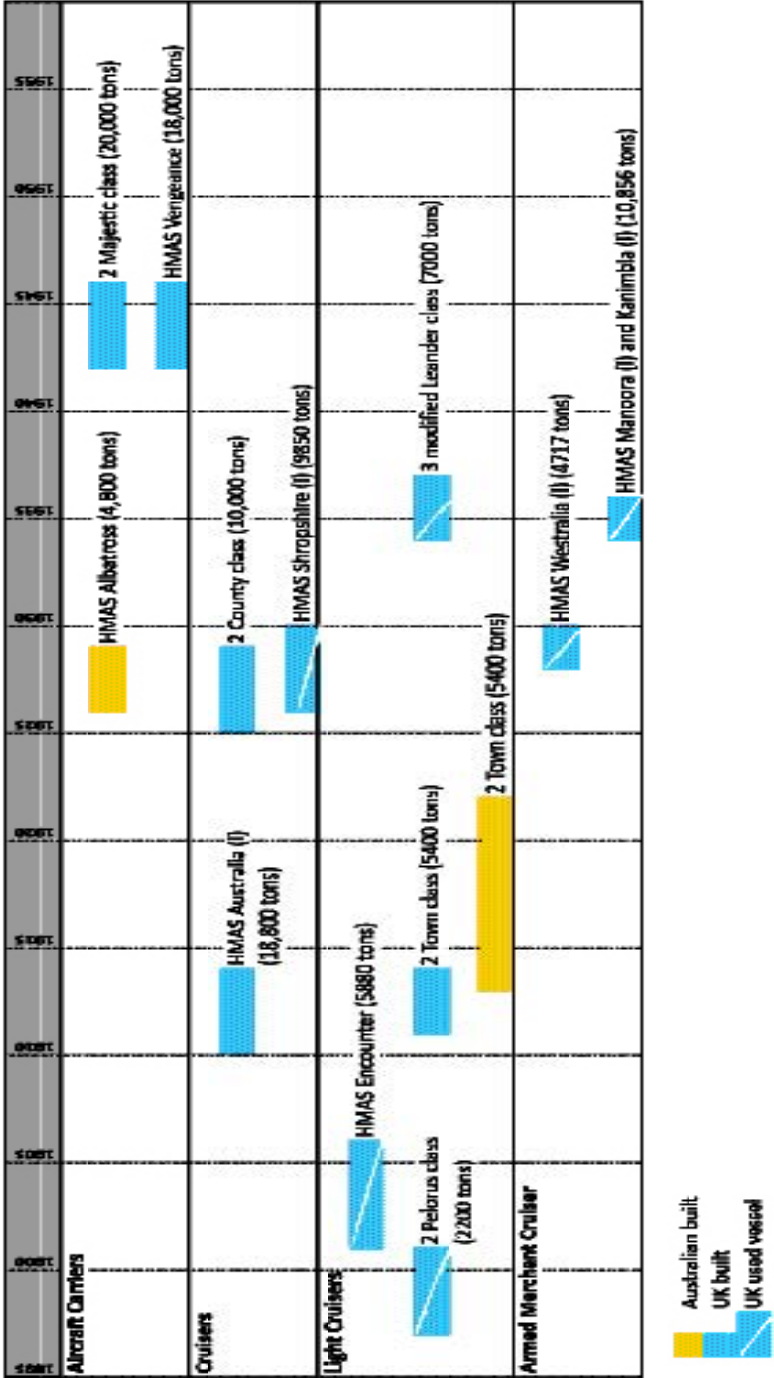


Figure 1: Construction of RAN Capital Ships 1885 to 1995



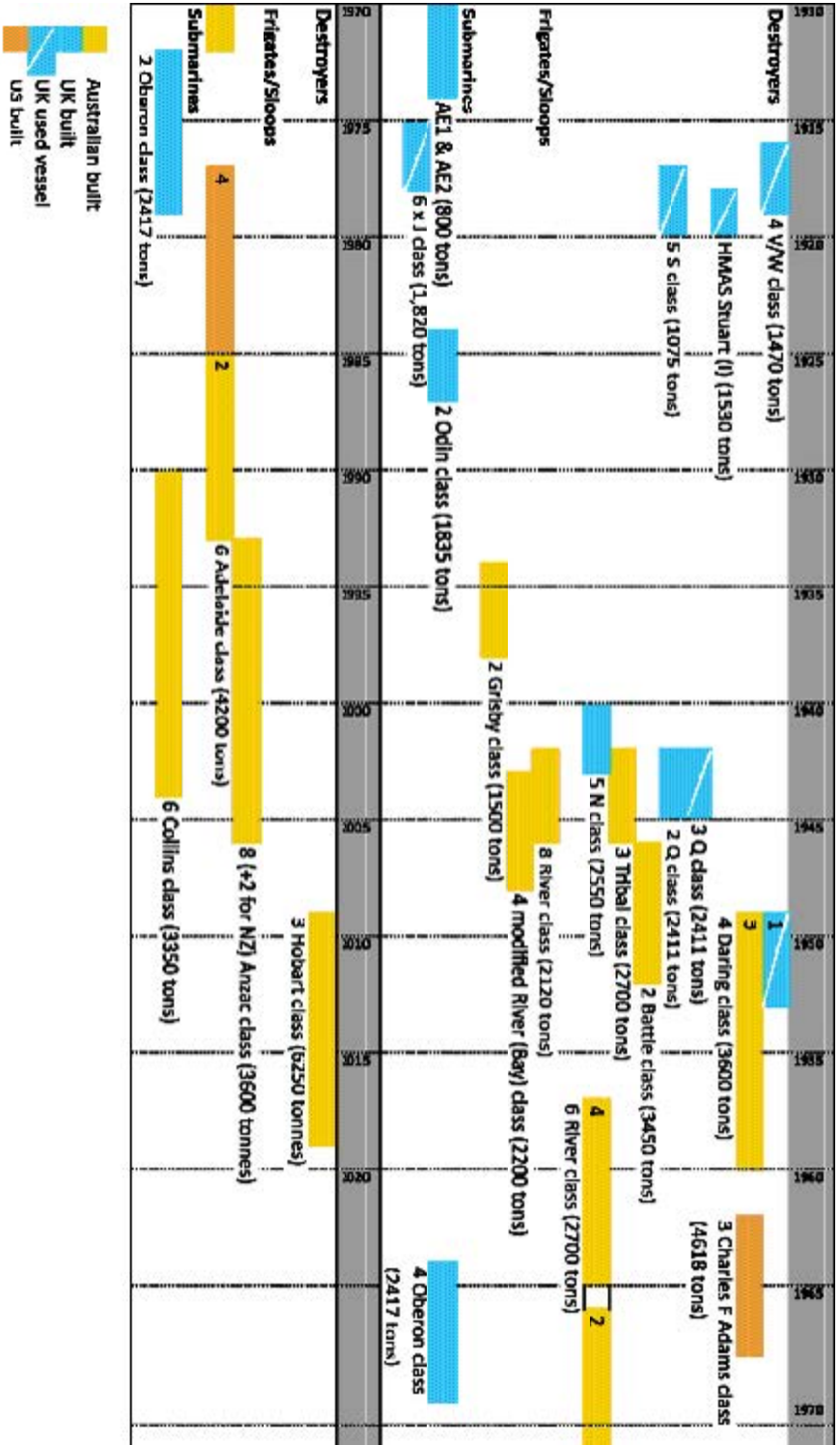


Figure 2: Construction of RAN major combatants 1910 to 2020

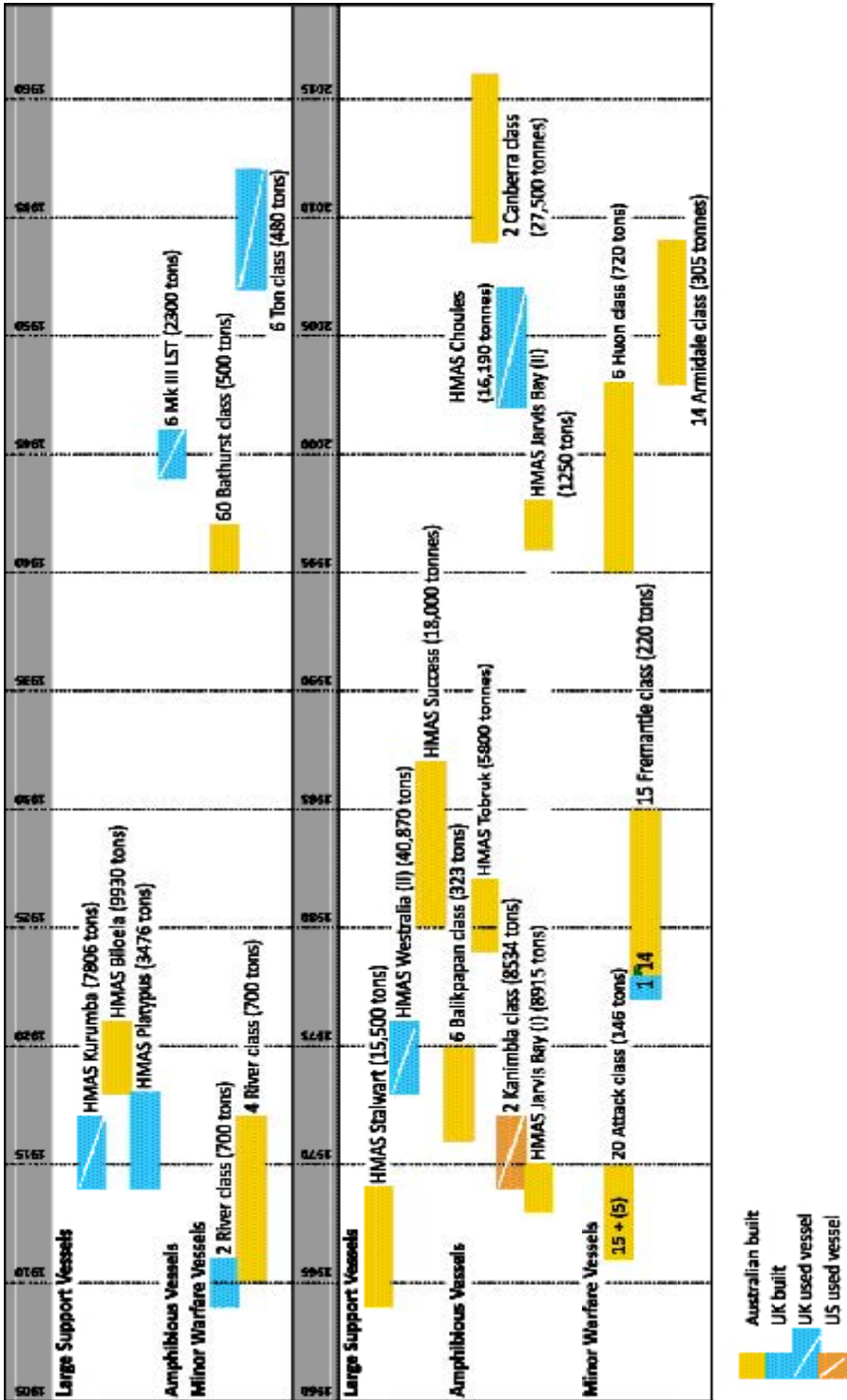


Figure 3: Construction of other RAN vessels 1905 to 2020

troubled shipyards to the private sector, a series of major naval combatant projects commenced in-country. As a result, Australia now relies less on overseas shipyards than at any time since Federation. However, the shift to domestic construction has delivered very mixed results, as shown in Table 1. With the exception of the LHD, which is still at its early stages, every project apart from the *Anzac* frigates has suffered adverse variances from initial commitments, notably in the form of material schedule slippages and in some instances, of serious increases in costs. Whatever the shortcomings of the old government-owned yards might have been, the shift to private ownership has therefore not been a complete remedy.

It is against this background that the question must be considered of where the further, very substantial, planned acquisitions should be sourced.

### Some Economics of Local Sourcing

To properly discuss that question, it is first necessary to understand what local naval construction does, and does not, entail in practice. At a minimum, local construction involves the fabrication of the hull and superstructure of vessels.<sup>6</sup> At the same time, however, almost every significant weapon, sensor and combat system put into vessels is imported from either Europe or the United States. The same is true for most of the major mechanical components such as diesel engines, transformers and generators. A few notable exceptions, such as the Australian-manufactured CEAFAR radar presently being integrated onto the *Anzac* frigates and the locally manufactured batteries on the *Collins* submarines, do nothing to alter the fact that every major platform in the RAN is very highly reliant on overseas suppliers - especially for the high-technology components that define modern combat capability. Locally built vessels from the 1990s nevertheless contain a significant number of Australian-manufactured secondary components. However, following the government's adoption of a less protectionist defence industry policy in 2007, it is likely that secondary local content will decline from the levels achieved in the 1980s and 1990s when Australian-content targets were imposed.

Of course, a naval vessel is more than the sum of its component parts; there are also the critical aspects of design and integration. Here the picture is mixed. The last major Australian-designed vessel built for the RAN was HMAS *Stalwart* in 1965.<sup>7</sup> Since then, only minor assets such as patrol boats, oceanographic vessels and landing craft have been designed locally, with all new major vessels built to either foreign designs or adaptations of foreign designs. With only the possible exception of the *Collins* replacement, this is likely to remain the case. But while Australia now eschews the challenge of *ab initio* design, a great deal of effort has been put into the integration of mechanical and electronic sub-systems - both during construction and in subsequent platform upgrades. Yet, even here, there is still a significant reliance on overseas expertise. All of the large Australian-based 'systems integrators' are subsidiaries of either US (Raytheon, Lockheed Martin, Boeing) or European (BAE, Thales, Saab) firms that can and do use their parent company's intellectual property

Project	Prime Contractor	Scope	Outcome
<i>Anzac</i> class frigates	Tenix [now BAE Systems]	Eight (+two NZ) frigates based on the MEKO 200 PN design.	All vessels delivered to specification, within budget and largely on schedule. Ships now in service.
<i>Collins</i> class Submarines	ASC Limited	Six submarines designed by Swedish firm Kockums.	Project delayed by 62 months. Vessels required around \$1b of remedial work. Fleet remains plagued by mechanical problems and poor availability and costs are likely to rise further.
<i>Huon</i> class mine hunters	ADI [now Thales Australia]	Six minehunters based on the Italian <i>Lerici</i> class.	Delivered within budget but with a 40 month delay. Ships now in service.
<i>Adelaide</i> class FFG upgrade	ADI [now Thales Australia]	Comprehensive replacement of sensors, weapons and combat system.	The project suffered a 60 month delay and scope was reduced from 6 to 4 ships (= 50 per cent unit cost increase). Ships now in service.
<i>Anzac</i> class upgrades	Anzac Ship Alliance [SAAB, BAE Systems and Defence] and CEA technologies	Surface and subsurface warfare enhancements including anti-missile defence.	Initial plans were much delayed and suffered cost increases, but the latest revision is largely proceeding on track
<i>Hobart</i> class destroyer	AWD Alliance [ASC, Raytheon and Defence]	Three Aegis equipped DDG based on the Spanish F-100 design.	Costs doubled during planning. 12 month delay so far due to problems with module fabrication.
<i>Canberra</i> class amphibious ships	BAE Systems	Two vessels being built in Spain by Navantia, fit-out will occur in Australia.	On schedule and within budget.

Table 1: Key major post-privatisation Australian naval shipbuilding projects

and expertise. In fact, the only large Australia-owned defence equipment company in operation today is the government-owned ASC Limited. Table 2 summarises the reliance of Australia-built vessels on overseas suppliers.

In short, what is really at issue is mainly local fabrication of vessels, the production of a range of Australian-manufactured secondary components, and some systems integration that while it can occur within Australia, has a substantial reliance on the intellectual property and expertise of non-Australian corporations. It is not controversial that under Australia's current approach to naval shipbuilding, taxpayers pay a significant premium for local construction relative to the alternative of buying from existing foreign production runs. As a recent report from the South Australian government's defence lobbying agency, DefenceSA, put it 'Australia's demand for warships is low in number and this quite fairly attracts a premium in cost to build them in Australia'.<sup>8</sup> The same conclusion was reached by the 2002 joint industry-Defence *Naval Shipbuilding and Repair Sector Plan*.<sup>9</sup>

<b>Component</b>	<b>Source in Australia-build major vessels</b>
Vessel Design	Foreign and adapted from foreign
Precision Munitions and Launchers	Foreign
Naval Guns	Foreign
Combat Systems	Foreign and adapted from foreign
Communications	Foreign and local
Radar and IR Sensors	Foreign*
Sonar	Foreign and local
Hull and Superstructure	Local

\*Apart from CEAFAAR targeting radar

*Table 2: Australian reliance on foreign naval systems*

## A case study of the local build cost penalty - Hobart class destroyers

Australia's current *Hobart* class destroyer project provides an illustrative example of the cost penalty associated with local sourcing. While there are no precise public figures of the progressive cost per hull across the three ship build, there is enough information in the public domain to make a rough estimate. From various public sources we know the total cost of the project (\$8.1 billion), the marginal cost of a fourth ship (\$1.5 billion) and the cost of the Aegis combat system (\$400 million each), which is the most costly of the imported components. The only other piece of information needed is the 'learning rate' - for the purpose of this discussion, we assume 85 per cent, a median value of the estimates cited above. Taking a higher or lower figure would change the precise figures but not the general conclusion.

Table 3 below shows the resulting costs by vessel. The fixed component represents non-production/non-recurring engineering costs, or what might loosely be called fixed overheads. Given that a fourth ship produced on the same learning curve would cost an estimated \$1.47 billion, the estimated project overheads are commensurate with the cost of another ship. This does not include substantial additional spending by the Commonwealth and South Australian governments on infrastructure and training in support of naval shipbuilding in South Australia. State government spending on maritime infrastructure has exceeded \$300 million.

	Fixed	Ship 1	Ship 2	Ship 3	Aegis	Total
Cost	\$1.43 b	\$2.04 b	\$1.74 b	\$1.57 b	\$1.2 b	\$8.1 b

*Table 3: The cost of the SEA 4000 program (Hobart class DDG)*

Of course, these figures are at best only indicative. We cannot be sure of how much of the production costs are subject to learning curve effects and how much are due to imported components which are not. An independent analysis by DefenceSA estimated that the fixed component of costs was even higher at \$2.5 billion. Of course, not all of this could be avoided by purchasing from overseas; significant fixed costs are unavoidable even in a foreign purchase - though not on the same scale as arises for domestic construction.

Whatever the precise figures might be, it is clear that a substantial premium has been paid for building the vessels in Australia. If we had purchased three vessels from an established foreign production line at the marginal cost of the fourth vessel in our local program (\$1.5 billion), the premium would amount to \$3.6 billion. While this might appear implausible, the current unit production cost of the 50 per cent larger US DDG 51 destroyer (equipped with the same combat system and similar weapons suite as our vessels) is only US\$2.2 billion. On this basis, we have paid a premium of \$1.5 billion for a substantially smaller vessel. Moreover, it is worth stressing that these are estimated costs for the DDG, with a substantial risk that out-turn costs will prove to be significantly higher.

### Why is there a cost penalty?

That Australian naval shipbuilding would incur a cost penalty is unsurprising, for reasons that are well known from the economic theory of international trade. According to that theory, patterns of international trade are, to a large extent, dependant on the opportunity costs of production. All else being equal, an economy that has a lower opportunity cost of production (compared to other countries) for a particular tradeable commodity will export that commodity, or at least should do so to make efficient use of resources. Similarly, countries will (or at least should) import commodities for which they have relatively high domestic opportunity costs. A country is said to have a comparative advantage in the production of a

particular commodity, relative to some other country, if it has a lower opportunity costs of production, such as if supplying it entails a relatively smaller sacrifice of other production.

Now, those opportunity costs are, in the first instance, shaped by factor endowments, that is, by international differences in the availability of labour, capital and natural resources. Compared to other high-income economies, Australia has a very significant endowment of natural resources, including minerals and abundant agricultural land, relative to its endowments of other factors of production. As a result, our opportunity cost of supply of primary commodities is low: compared to other countries, we can expand their supply with relatively little sacrifice of factor inputs. Conversely, the opportunity cost of using scarce capital and labour to produce goods such as naval vessels is the reduction this causes in the availability of those inputs for the production of primary commodities and of non-tradeable goods such as housing. With that opportunity cost being high, the exchange rate and domestic input and output prices will, if left to their own devices, adjust so as to make it unattractive to produce goods such as vessels locally, while making it attractive to produce goods more closely related to our natural resource endowments and use the resulting export proceeds to import vessels and other manufactured goods.<sup>10</sup>

It is important to understand that this outcome would emerge even if naval construction, considered in isolation, had higher levels of productivity in Australia than overseas, so long as we were relatively even more efficient in producing goods based on natural resources. To that extent, and given just how pronounced our comparative advantage in resource-based activities is, for Australian naval shipbuilding to be competitive it would need to have productivity levels that were very high by international standards.

In practice, however, our productivity levels in naval shipbuilding are unlikely to meet that test. After all, Australian shipbuilding has been a stop-start affair, with production of small numbers of disparate types being the rule rather than the exception. But naval shipbuilding is an activity in which there are substantial economies of scale, so small production runs incur significant cost penalties.

The sources of those scale economies are readily explained. Economists distinguish between 'internal' and 'external' scale economies: internal economies are those that arise within the firm, say at the individual shipyard, as its output expands; external economies are those that arise within the industry, which can be broadly defined to include the various producers and their suppliers and distributors.

As far as the internal economies are concerned, it is conceptually useful to divide the cost of manufacturing items - be they ships, submarines or saucepans - into two parts: the fixed cost of developing the wherewithal to manufacture the items, and the marginal cost of producing each successive item. In the case of warships, the former includes the cost of production infrastructure, research and development,

design, workforce training and project planning; while the latter includes the cost of materials, labour and capital necessary to produce each item.

As noted above, the fixed cost of developing modern weapons systems is often substantial compared to the marginal unit cost of production. Some recent examples from the United States are illustrative. Table 4 lists expenditure to date on research and development (a subset of fixed costs) and the average unit production cost for a range of US naval projects. For small production runs, fixed costs can add substantially to or even dominate total cost.

<b>Program</b>	<b>R&amp;D expenditure</b>	<b>Average unit production cost</b>
<b>DDG 1000 Destroyer</b>	US\$7.0 billion	US\$3.3 billion
<b>CVN 21 Aircraft Carrier</b>	US\$4.6 billion	US\$10 billion
<b>Virginia Submarine</b>	US\$7.0 billion	US\$2.5 billion
<b>Littoral Combat Ship</b>	US\$2.1 billion	US\$648 million

*Table 4: Cost of recent and planned US naval construction projects<sup>11</sup>*

Additionally and separately, in the manufacture of complex items such as warships, the marginal cost of production of each unit tends to decline as experience is gained and the production methodology matures. In other words, even quite independently of the ability to spread fixed costs, average costs will fall as cumulative production rises, a phenomenon commonly described as an experience or learning curve.

The learning rate is a function of many variables, and will depend on how well efficiencies are harvested as the project proceeds. In that respect, it is an empirical measure that can only be reliably calculated in retrospect. However, global experience across a large number of vessel classes allows the range of plausible values to be identified. This is often described by a percentage figure and for shipbuilding programs estimates of the learning parameter range between 80 per cent and 90 per cent.

Figure 4 shows some illustrative learning curves for that range of values. Note that the steepest learning curve actually gives the best outcome - contrary to popular use of the term.

The overall learning curve is the sum of curves for each component of the total cost - for example, for materials, labour and management overheads. Over the long run, the total learning effect will be limited by whichever of those components decreases most slowly. Eventually there are no additional productivity gains to be had and a plateau results. However, for many complex weapons systems, production runs are too short to entirely exhaust learning effects, so cost reductions persist over the entire range of output.



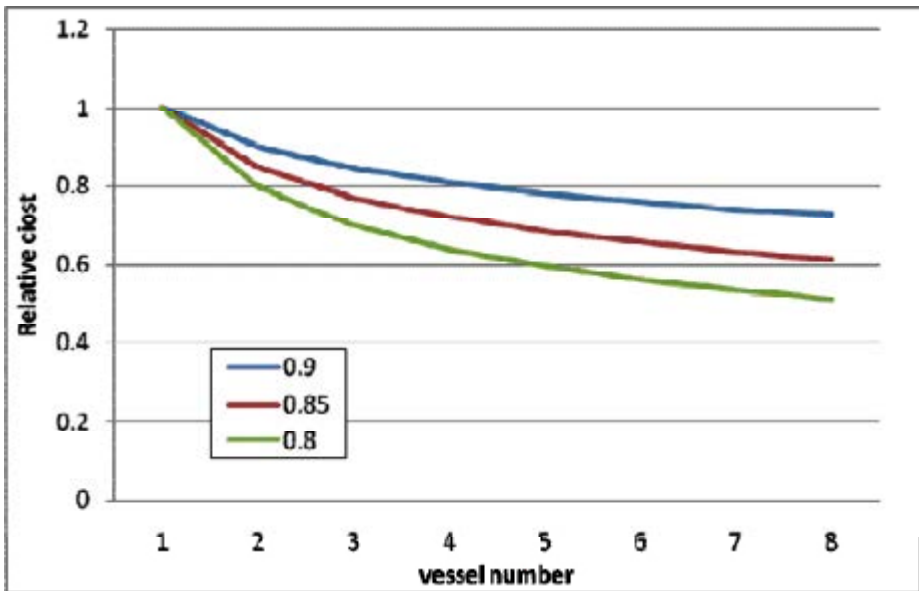


Figure 4: Indicative learning curves for shipbuilding programs

In summary, there are two main forms of internal scale economies: the static economies that arise from the ability to spread fixed costs over an increased number of units; and the dynamic economies that occur as experience reduces marginal costs. Both of these are significant in naval shipbuilding.

However, there are also external scale economies in shipbuilding. These occur as an increase in the scale of the activity allows reductions in production costs by encouraging the development of a trained labour force, by increasing the scale and cumulative experience of component producers and other specialised input suppliers, and by facilitating the growth of expert sources of technical, commercial and financial oversight and support. These economies can be thought of as shifting down the activity's entire cost curve, and are a spillover (or in the jargon of economics, an externality) the industry as a whole reaps from each individual firm's expansion.<sup>12</sup>

Combined, these internal and external economies create an additional source of international specialisation, above and beyond that arising from differential factor endowments. Specifically, if the production of a good is subject to material scale economies, international trade can economise on both fixed and variable costs, so long as transport costs are not too great.<sup>13</sup> Moreover, production will tend to gravitate to those places where demand is greatest, as that can minimise transport costs (again, assuming those are not so high as to make trade unattractive) while allowing the internal and external scale economies to be reaped. There will, in other words, be what economists refer to as a 'home market effect', in which the size of domestic demand shapes international relative prices and the pattern of international trade.<sup>14</sup>

Of course, the transport costs will be immaterial in the case of naval vessels, leaving the home market effect to manifest in full. This home market effect is likely to be even more pronounced if close interaction with (and hence proximity to) large and technically sophisticated customers is an important source of learning and competitiveness - as exists between the large United States and European suppliers and their parent navy customers.

## The extent and impact of assistance

Given these factor endowment, scale and home market effects, Australian production of naval vessels will generally only be commercially viable if it is protected. The extent of the protection that has been afforded to production is difficult to estimate, as cost and price data is rarely public. However, an indication of just how great that protection is can be gained from information that was released with the publication of the Pappas review of defence efficiency.<sup>15</sup> That information relates to the DDG and LHD projects.

The first relevant indicator, and the one on which attention usually focuses, is the price premium, which can be defined as the percentage difference between the present values of the expected costs of domestic acquisition on the one hand and the similarly defined expected cost of a comparable military-off-the-shelf (MOTS) option on the other. Broadly, the price premium corresponds to the nominal rate of assistance to a good, which is the percentage difference between its domestic and international price arising from the policies in question.<sup>16</sup> That price premium exceeds 10 per cent for both projects.

However, the price premium is a significant underestimate of the level of protection local shipbuilding has received in these projects. Rather, that protection needs to be measured by comparing the assistance provided to the activity to its unassisted value added in Australia. This measure is termed the effective rate of assistance (ERA) and is the standard indicator used by the Productivity Commission to quantify and compare assistance across Australian industries.

The effective rate of assistance afforded any activity is simply the percentage increase in value-added, or manufacturing cost margins, for domestic producers resulting from the structure of nominal protection on its outputs and inputs. This takes account of assistance to an industry as well as imposts the industry faces due, for example, to tariffs on the inputs it uses. Unlike the price premium, the ERA identifies the impact of the assistance in distorting the allocation of resources, as it measures the maximum increase in the activity's domestic resource cost per dollar of net import substitution. For the DDG, the estimated ERA is 33 per cent; for the LHD, it is over 70 per cent.

It is worth emphasising just how high these rates of assistance are. The Productivity Commission estimates ERAs for each Australian industry. The estimates reflect the combined level of tariff and budgetary assistance to an industry, less the additional costs imposed on that industry as a result of tariff assistance to the industries supplying it with inputs. For 2009-10, the average ERA for manufacturing industry was estimated at 4.4 per cent, for mining 0.2 per cent and for primary production 4.7 per cent.<sup>17</sup> That said, there is considerable dispersion in ERAs within these broadly defined sectors; but a closer disaggregation shows that the rates of assistance provided to the DDG and LHD projects are nearly 3-6 times greater than those for the most heavily protected manufacturing industry (textiles, clothing and footwear), whose ERA is just below 13 per cent. In other words, no other activity is as heavily assisted as these projects have been.

These comparisons are significant not merely in highlighting the magnitude of the assistance provided to these projects but also because the distorting effect of protection increases with its dispersion - that is, with the difference between industries in rates of assistance. The industries that have received high rates of effective assistance are induced to supply goods domestically even when their domestic costs are higher than their opportunity costs through trade. At the same time, the producers of goods with relatively low levels of effective assistance are induced to refrain from producing goods domestically even when this could be done at a lower cost than in international markets. The result is economic waste.

Unfortunately, these estimates understate the actual degree of assistance. This is because they are based on expected costs for the DDG and LHD at the time of contract close, compared to estimated MOTS costs. Domestic production, however, is associated not merely with higher expected costs (where 'expected' is used in the sense of mathematical expectation), but also with costs that are more uncertain than those of MOTS comparators. This greater uncertainty arises from the inherent difficulty of estimating the cost of Australianised variants of foreign designs. The result is forecast error that imposes a degree of risk on taxpayers, for which they should be compensated. Domestic acquisition is, in other words, a relatively high risk option; however, the estimates above take no account of that greater risk (as they merely reflect dollar outlays as expected at the time of decision), and so understate the effective cost to taxpayers of domestic sourcing.

Now, it is true that in recent years, most of the variance between program expectations and outcomes has not involved increases in 'headline' project costs to the Commonwealth (though those have occurred, for instance, for *Collins*) but delays in delivery schedules. In itself, this raises a number of interesting questions that cannot be explored in this paper,<sup>18</sup> but what is germane here is that even if the nominal bill paid by taxpayers remains constant, these delays are costly, though those costs are not quantified by the Australian National Audit Office when it reviews major defence projects. The costs take two forms.

First, a system delayed is a system whose benefits, in present value terms, are reduced compared to initial expectations, with the quantum of the fall in benefits reflecting the extent of the delay, the resulting detriments to capability and the discount rate. Second, when new platforms are delayed, existing platforms need to be operated for longer. As the Rizzo review emphasises, sustainment costs increase, often rapidly, with the age of platforms. As a result, the costs of schedule slippage should be, but are not, calculated on a basis that includes the added outlays on existing platforms.

As local production materially increases the risk of these added costs being incurred, estimates of assistance that take no account of that risk understate the price premium being paid and the effective protection being provided. It follows that although the estimated levels of assistance are very high, they will also understate the assistance's economic costs.

Those economic costs take several major forms. The first and most obvious is that as the price at which we acquire vessels rises, consumers - in this case, the community as a whole, as it finances and consumes defence services - face increased outlays and reduce their consumption to a degree that depends on the elasticity of demand (the proportionate change in quantity consumed consequent on a proportionate change in price). To illustrate this process, Figure 6 plots a ship affordability index (based on real unit cost escalation) for US Navy acquisitions of DDGs against the number of surface combatants in the US Navy for the period 1960-2010; broadly, these trends imply a price elasticity of demand of approximately -1, in which each 1 per cent increase in unit acquisition costs gives rise to a long term fall of 1 per cent in the number of vessels purchased.

This implies that as domestic sourcing increases price above opportunity cost (which is the price at which a comparable vessel could be procured from overseas), consumers - again, the community generally - will forgo some consumption that they would have valued at more than that opportunity cost.<sup>19</sup> The supply of defence services will, in other words, fall below the levels the community would have chosen had acquisition prices reflected world costs, with the result that the total benefit the community derives from defence will be below efficient levels.

Second, if the price increase is not fully offset by a reduction in demand, spending on defence will rise, and as that spending is financed by taxes, taxes must be higher than they would otherwise need to be. Since taxes distort economic behaviour, and the extent of the distortion increases more than proportionately with the tax rate, the result is to reduce Australia's wellbeing.

Third and last, as resources are diverted to naval shipbuilding from activities that are less protected, the efficiency with which we use our factor endowments is reduced, and national income with it.

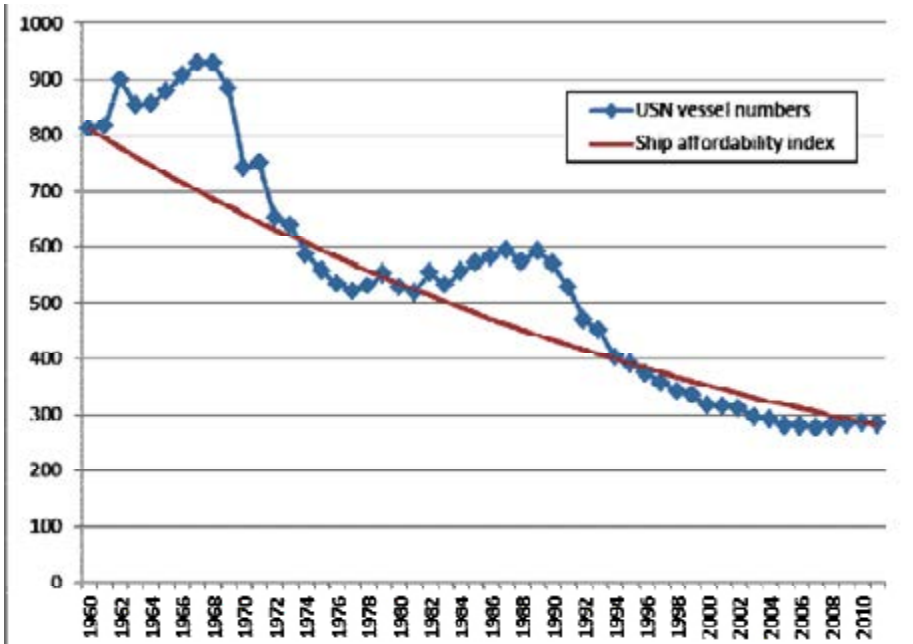


Figure 6: Affordability and fleet size

### Could the cost handicap be overcome?

It is sometimes argued that adopting a long-term program of continuous naval construction in Australia could overcome any productivity and cost gap between Australian and foreign shipbuilding. Were that so, future domestic construction could be secured with less need for assistance, so that the costs and distortions that assistance brings could be materially reduced or even avoided.

Given how large the cost gap is, and its roots in factor endowment, scale and home market effects, the proposition must be doubtful. But at least in principle, the benefits from such a long-term program of naval construction could include:

- reduced overheads and elimination of the periodic fixed start-up costs inherent in the current boom and bust approach
- learning curves commencing from a lower point (and perhaps being steeper than otherwise) by having an established workforce transition smoothly from program to program
- better handling of technical and production risk through the long-term accumulation of experience in a single corporate entity
- increased opportunities for commonality in spares and support leading to reduced operating costs.

Given these potential benefits, a continuous build program obviously warrants consideration. The first question is whether Australia's demand for vessels is adequate to support a continuous program.

Looking back at Figure 1, and forward to the future program, there is more than enough work to keep a single shipyard busy - but through a program of rather disparate vessel types. At this point, it is useful to separate the option of continuous local production into two components: first, aggregating the production of disparate vessel classes together under a single shipbuilder; and second, adopting a rolling-production program either for a single class of vessel or between similar classes of vessel. In practice, either or both of these options could be pursued. The 2002 *Naval Shipbuilding and Repair Sector Plan* considered both options focusing on the former. The 2010 DefenceSA report focused on the latter.

### Aggregating Disparate Vessel Classes Under a Single Shipbuilder

All other things being equal, overheads can be reduced and equipment commonality can be improved by having a single shipyard undertake continuous or overlapping programs involving disparate vessel types. Further benefits from learning curve transfer between programs and workforce continuity can also be expected - although these will diminish as the difference between the classes of vessel widens. Moreover, the incorporation of common equipment types across disparate vessel classes presupposes a level of redesign that will bring additional cost and risk (or worse still if it presupposes even more costly and risky *ab initio* design). It is sometimes also argued that a larger and more certain workload will increase the willingness of the shipyard to invest in technology, training and infrastructure. Of course, since these costs are going to ultimately be borne by the Commonwealth, the benefit is limited to the productivity gain which they deliver.

Whatever the net advantage of these factors might be, there is a critical problem intrinsic to aggregating work under a single shipbuilder: it amounts to awarding a monopoly to a single public or private entity.

Monopoly shipbuilders have historically been less than hotbeds of productivity and timely output. Indeed, past experience with the old government-owned shipyards, and current experience with submarine maintenance under ASC, demonstrates the corrosive consequences of guaranteed workflow.<sup>20</sup> While the inherent risks of monopoly supply can be mitigated somewhat through the competitive subcontracting of module construction, this comes at the cost of reducing economies of scale and duplicating fixed production overheads - the very things the approach is intended to reduce.

Could innovative contracting and incentives be used to mitigate such risks? We would want to be very sure of this before committing to a monopoly build program. After all, once the monopoly was established, it would be difficult to subject the single supplier to continuing contestability from foreign yards. Having committed

to a single supplier, the option of simply transferring production overseas, should the single yard prove costlier than foreign options, would not be there: or if it was there, the risk of that happening would undermine the predictability of load (and associated confidence to invest) that is assumed to generate the savings the single sourcing promises. In other words, there is an inherent and unavoidable tension between on the one hand, wanting the gains that might come from delivering to a yard an assured load, and on the other, threatening to remove that load should foreign bids prove more competitive: both these commitments cannot be credible at the same time.

To make matters worse, once such a commitment to single sourcing had been made, it would create a political economy that tended to lock it in, not least as specialised investments, with low scrap value outside of that engagement, both by suppliers and the work force. Management, unions and local politicians would have every incentive to invest in making it politically costly for the single sourcing decision to be reversed or for exceptions to be. As any reversal of the policy would impose large, concentrated, losses for the sake of small gains dispersed across the entire taxpayer base, inefficient supply could persist for many years before the political system was willing to bear the costs of removing it. Indeed, that pattern of persistence of inefficiency characterises many areas of Australian defence production, including uniforms and munitions.

It is therefore hardly surprising that the government rejected the recommendation of the 2002 *Naval Shipbuilding and Repair Sector Plan* to establish a monopoly shipbuilding entity.

## Rolling production

Some of the benefits available through foreign construction might be captured through the rolling production of a single class of vessel or similar classes of vessel in Australia, as this would reduce duplication of fixed costs and allow the accumulation of learning effects. The archetype for this approach is the ongoing Japanese submarine rolling program which involves the continuous construction and evolutionary development of submarines.

Looking to the government's current plans, two obvious candidates come to mind: the 20 vessel offshore patrol vessels and the 12 vessel new submarine programs. The DefenceSA report observes that ongoing build programs would be possible with a patrol vessel life-of-type of 20 years and a submarine life-of-type of 25 years, corresponding to a 1 year and 2 year production interval respectively. However, there is little point in adopting a rolling production program if it requires slowing construction below an efficient rate of labour utilisation, nor (given the high cost of individual vessels) could it make much sense to retire vessels early to create work for the shipyard.

In the case of the offshore patrol combatants, such an approach is difficult to reconcile with recent experience. Although the *Anzac* class frigates were produced at an average rate of one per year, they are much larger and more sophisticated than the proposed patrol combatants - so an efficient production run for the patrol combatants would surely involve shorter time intervals. As a comparison, the *Armidale* class patrol vessels, which are admittedly much smaller than the proposed patrol combatants, were produced at a rate of around five per year. The proposed scheme for the submarines is even less plausible. The original delivery schedule for the *Collins* envisaged vessels being delivered at a rate of about one per year - though delays saw the schedule grow substantially. The Japanese program (which involves 19 operational submarines including training vessels) also produces submarines at twice the rate proposed for an Australian rolling program.

Any proposal for a rolling build program for submarines or offshore combatants would need to take account of this much slower than usual utilisation of labour. Because of fixed management and engineering overheads, it is simply not possible to contain costs by halving the workforce and doubling the production interval. Further, because of the small numbers involved, a rolling production of large surface combatants (frigates and destroyers) is even more problematic for the same reason. Moreover, given the life-of-type left in the *Anzac* class, a move into a rolling program as a continuation of the DDG construction is hard to envisage unless vessels are retired well before their useful economic life. This would entail bearing the very high costs of premature scrapping merely so as to bring the cost of new vessels down to levels that - through overseas sourcing - could be secured in any event. The industry tail would be wagging the acquisition dog, at high cost to taxpayers.

Additionally and importantly, establishing a rolling production program to capture the benefits of continuous production presumes that future demand is assured for decades hence. However, the obvious risk is that economic, strategic or technological developments will lead to changes to the type, number and timing of acquisitions in a manner that invalidates the initial business case. Given that it is already questionable whether present demand is high enough to justify a rolling program, it would not take much to tip the balance. An easy way to appreciate the uncertainty in today's projections is to observe that the current demand for vessels by the RAN was not anticipated in 2000 or 1990, let alone 1980. Or to put it another way, would we really have persisted with a rolling production program of surface combatants based around variants of the *Anzac* frigate, and would we have wanted to continue building *Collins* submarines once we appreciated their myriad problems?

Put in more economic terms, a truly firm commitment to rolling production involves abandoning the option of value of flexibility: of being able to alter the acquisition program as new information comes to hand. Yet there are few areas where the value of flexibility is greater than in defence procurement: because strategic circumstances change, and because the costs and capabilities of platforms are



constantly evolving. A program of acquiring capabilities that is genuinely locked in is one that gives adversaries an important advantage, as it constrains the scope one has to respond to their actions through the procurement variable.

Arguably, it is unlikely that an Australian government would ever commit to a rolling production program for the simple reason that it would not need to and that the costs of doing so would be high. At best, governments will retain the option of extending a production run but defer any decision, pending clarification of future demand and dependent upon the performance of the initial program. This is the approach consistently taken by the United States despite much higher levels of demand.

Finally, a rolling production program would also invite the emergence of a political economy much like that already discussed for a monopoly shipbuilder, the only difference being that the monopoly only extends over one class of vessel. There would be a narrow base of interests ready to lobby in favour of continued work irrespective of the cost to the taxpayer or the benefit to the community. This is far from a distant threat: for example, the new head of ASC Limited recently expressed a 'strong belief that we in Australia should choose an indigenous design to replace *Collins*, despite admitting that a cost benefit analysis of the options remains to be done.<sup>21</sup>

## Conclusions on Continuous Construction

As a result, we do not believe continuous construction is a desirable or even plausible option for eliminating the cost and productivity gaps between domestic and overseas sourcing. While some elements of a long-term construction program may be adopted, the need to retain procurement flexibility, and the risks inherent in creating monopoly positions, will tell against any policy of this kind. Moreover, even were such a policy adopted, it is less likely to eliminate cost gaps than to create new ones, as the monopoly power it creates is exploited and as the loss of flexibility reduces the benefit the community obtains from the naval construction program. The high relative costs of local sourcing are therefore likely to persist.

## Strategic benefits of local sourcing

Given those high costs, the issue is whether they are offset by cognisable and commensurate benefits.

The first step in examining potential benefits is to understand Australia's avowed policy of 'defence self-reliance'. This uniquely Australian term-of-art refers to the ability to defend ourselves against attack without the assistance of the combat forces of other countries (though with their economic and logistic support if necessary).<sup>22</sup> This has traditionally been taken to imply that Australia needs the in-country ability to replenish, repair, maintain and upgrade its major weapons systems.<sup>23</sup>

The government's 2010 *Defence Industry Policy Statement* went further by identifying explicit priority industry capabilities and strategic industry capabilities. The former are industry capabilities which 'confer an essential strategic advantage by being

resident within Australia, and which, if not available would significantly undermine self-reliance and ADF operational capability', while the latter 'provide Australia with enhanced defence self-reliance, ADF operational capability, or longer term procurement certainty'.

When the concept of priority industry capabilities was first floated, the intention was to bring a degree of discipline to the process of determining the assistance provided to defence industry. To achieve that objective, identifying priority industry capabilities and strategic industry capabilities should have involved some form of cost-benefit appraisal: in particular, an assessment of the consequences of being denied the capability in whole or in part, the resulting willingness to pay for maintaining Australia's access to that capability and on that basis, structured consideration of the options for doing so. In other words, the scheme should have provided a means for translating 'self-reliance', which is inevitably a matter of degree, into a workable guide that properly weighs costs and consequences in the light of budgetary and resource constraints.

However, what has emerged from the application of the concept does not bear close examination. Although many of the listed capabilities are of some relevance to self-reliance, there is a sense that defence industry segments have been accommodated simply because they currently exist. Indeed, the inclusion of combat clothing, infantry weapons and ballistic munitions as 'priority capabilities' is most plausibly explained as reflecting incumbent interests. So, although the government has designated naval shipbuilding as a 'strategic capability', its strategic importance needs to be examined from first principles.

A strategic rationale for domestic naval shipbuilding could be built upon one or more propositions, including that it is:

- the only way to acquire the particular naval capabilities we need
- necessary for sustaining and upgrading vessels in peacetime
- necessary for sustaining and adapting vessels in wartime
- a basis for an emergency naval construction program in case of war
- necessary to preserve sovereign independence of action.

Each of these propositions is examined below.

### **Unique requirements demand local construction**

From an engineering perspective, if it is feasible to build a vessel in Australia it will be feasible to do so overseas. Australia has no unique production infrastructure or expertise which puts it ahead of foreign alternatives. If anything, the opposite is the case. Moreover, foreign suppliers are willing and able to build vessels to the specifications of their customers - such is the nature of naval construction. The fact that future vessel designs will almost certainly be based on foreign designs further

bolsters the argument that foreign yards are capable of meeting our demands. Finally, with defence spending falling across most of the developed world, there is unlikely to be a problem with finding capacity at foreign shipyards.

Where problems can arise is in the handing of intellectual property from different suppliers. There are, in particular, clear sensitivities between US and European arms manufacturers in some areas. It has at times been argued that only an Australia shipbuilder can provide sufficient confidence to suppliers that their intellectual property will be protected, for example, in the process of integrating US weapons and sensors onto a European platform. In the case of surface vessels, this concern is clearly misplaced. European countries routinely integrate US weapons and sensors onto their surface combatants. We need look no further than our own DDG project for confirmation. Based on the Spanish F100 design, the new DDG will carry essentially the same US manufactured combat system, sensors and weapons as its Spanish predecessors.

This leaves submarines, traditionally one of the more sensitive areas of military technology. In terms of the actual weapons there is no obvious difficulty. US Mk 48 torpedoes and Harpoon anti-shiping missiles have both been integrated onto European platforms in the past, and the Tomahawk cruise missile has been cleared for export to the United Kingdom, Spain and the Netherlands. However, the United States is especially sensitive about its submarine combat systems (even though a Lockheed Martin combat system is being incorporated onto Spanish submarines). Were Australia to have its submarines built in Europe, we might have to accept a European combat system or retrofit a US system post-construction in Australia. The former should be tested on cost-benefit grounds, as it may be desirable and the latter is entirely possible as demonstrated by the replacement of the *Collins* combat system.<sup>24</sup>

### **If you do not build it, you cannot sustain it in peacetime**

The tyranny of distance makes it impractical for Australia to rely on foreign yards to repair and maintain its vessels in peacetime. Fortunately, it is not necessary to build a vessel in order to be able to sustain and operate it. Over its history, the RAN has successfully operated 70 major foreign-built vessels with a cumulative displacement in excess of 360,000 tons.<sup>25</sup> In comparison, only 50 major naval vessels have been built in Australia amounting to only 183,000 tons. Relatively recent examples of Australia operating platforms built in foreign yards are the *Oberon* class submarines and *Charles F Adams* class destroyers (DDG). Many other countries successfully operate naval vessels built far from their shores. Taiwan operates Dutch submarines and US destroyers. Singapore operates Swedish submarines and French frigates. Malaysia operates French submarines and is acquiring British frigates. Brazil operates a French aircraft carrier and two classes of British frigate. Chile operates British and Dutch frigates along with French and German submarines. Argentina operates German destroyers and submarines. Israel operates German submarines.

It is sometimes asserted that Australia needs to be able to not just repair and maintain its vessels but also to upgrade them in-country. Although the strategic imperative for doing so is debatable, in practice upgrades can be performed in-country using existing maintenance capabilities, provided that the necessary intellectual property and systems integration expertise are available. Past examples include the successful upgrades of the *Oberon* submarines and *Charles F Adams* destroyers. In the aerospace sector, the upgrades to the foreign-manufactured F-111 and P-3C aircraft further corroborate this conclusion. Often, a critical factor in naval upgrades is access to the source code for combat systems, weapons and sensors. Since these components are almost completely of foreign origin irrespective of where vessels are built, domestic shipbuilding confers no advantage in this regard.

More generally, Australia (along with most other countries) routinely operates imported commercial and military aircraft. Aircraft engineering is at least as complex and surely less forgiving as anything to be found in the marine sector with the possible exception of submarines: if we can safely and effectively sustain advanced foreign aircraft, the same should be true of naval vessels.

However, even though it is not necessary to build vessels to be able to sustain them in-country, the ability to do so cannot be taken for granted. Indeed, as the *Collins* submarines have shown, even with the experience accrued during construction it can be difficult to sustain advanced naval vessels. Doing so requires a conscious decision to develop and maintain the infrastructure and human capital needed. In terms of infrastructure, Australia already has a series of well-positioned dry docks and ship lifts. Further, as matters stand, Australia has a wide range of corporate and individual capabilities that can be drawn upon to sustain and upgrade naval platforms, including systems integration. Planned work on the DDG and LHD projects will further enhance these capabilities (though as the *Collins* experience highlights it may not be sufficient). Were future platforms to be acquired offshore, Australia would have to mirror other countries reliant on foreign suppliers and require the builder to assist in the development of a domestic support capability - just as was done with earlier foreign naval acquisitions and as we do today with combat aircraft.

That said, it is sometimes argued that even if local construction is not necessary for sustainment to occur, it helps reduce the costs of sustainment. There would, in other words, be economies of scope between construction and sustainment, reducing the life-cycle costs of acquiring and operating major systems.<sup>26</sup>

Thus, 10-15 years ago, it was commonly held that building vessels in Australia with high local content would result in substantial reductions in sustainment costs through the life of the vessels. For example, a report produced in 2000 on the *Anzac* ship project held that once all eight ships were in service the annual cost of repairs, maintenance and spares 'could be higher by a factor of two if the original source of supply had been overseas': that is, local production was claimed to halve annual sustainment costs.<sup>27</sup>

Such optimism was endemic. The three big programs of the 1990s - *Collins*, *Anzac* and *Huon* - were all predicated on either reduced or static operating costs. However, as the vessels entered service, the true cost of ownership slowly became apparent. The explanation at the time was that the original estimates of operating costs had failed to take into account of what were termed 'parent navy costs': that is, the non-recurrent fixed cost of ongoing ownership that had previously been covered by either the US Navy or the Royal Navy. There is no doubt that these costs were substantial, but there was probably more to it than that. By demanding high local content, the cost of spares had to cover both the fixed cost of duplicating foreign production lines and the higher marginal cost due to small cumulative production runs.

This should have been obvious at the time; be that as it may, the extent of the error involved in those optimistic assessments, which were often funded by the firms that were proposing to undertake the projects, is certainly clear in retrospect.

For example, the aforementioned report into the *Anzac* class estimated that annual cost of repairs, maintenance and spares would be \$45 million for the eight vessel fleet. The most recent figure from the Defence Materiel Organisation for the *Anzac* class reported annual sustainment costs of \$211 million. Even adjusting for inflation, the original estimate was too low by more than a factor of three. The continuing rapid growth in the sustainment cost of the *Collins* class further confirms that past expectations of reduced through-life costs as a result of Australian construction were poorly founded.

With targets for local content no longer applied in defence projects, it is likely that current projects use more imported components than was previously the case. This will probably result in a reduction in sustainment costs relative to what would have occurred under the high local content policies of the 1990s. In any case, there is no reason or evidence to support the assertion that local construction, and certainly not local parts, permits a reduction in sustainment costs. To the contrary: the more Australia-unique our naval platforms are, the higher the parent navy burden we will have to carry through the life of the vessels.

### **If you do not build it, you cannot sustain it in wartime**

Sustaining naval vessels during a conflict potentially introduces two additional tasks: rapid modifications to counter enemy capabilities, and battle damage repairs. In the first case, the ability to rapidly modify a vessel will arguably be independent of where the vessel was built. Rather, the critical factor will be the depth and sophistication of the peacetime sustainment regime that has been put in place, including the extent of access to the underlying (almost invariably) foreign intellectual property and software.

In the case of battle damage repairs, the question is clouded by the scarcity of data on the damage likely to arise in a modern conflict. Nonetheless, an adequate peacetime support capability will no doubt result in a robust capacity for repairing

minor battle damage. If moderate to major battle damage occurs, the time taken for repairs at even a manufacturers' yard is likely to exceed the duration of modern conflict. For example, it took 11 months to repair the USS *Cole* after a suicide attack, and 15 months for the USS *Stark* after it was struck by two Exocet missiles. Though, even this might be overly optimistic given the lethality of modern weapons against invariably unarmoured modern warships; of the four Royal Navy vessels damaged during the Falklands conflict, only one was able to return to service.

In short, the critical element determining our capacity for minor repairs is likely to be the adequacy of arrangements for peacetime sustainment; where the vessels were initially built will only be a secondary factor. That said, the nature of modern conflict, and the likely damage vessels would sustain, means the capacity for major repairs will play only a limited role in determining warfighting capability.

### Naval shipbuilding as a basis for industrial mobilisation

Twice in the 20th century, the developed nations of the world converted their peacetime economies for total war. Although Australia built few vessels in World War I (1 collier and 3 torpedo boats), an emergency construction program during WWII delivered 60 minesweepers, 3 destroyers and 12 frigates of which 6 were complete by war's end. With this precedent in mind, it must be conceded that an extant shipbuilding program would greatly accelerate any future emergency construction program. The question, however, is how likely the need for such a response is in the 21st century. We believe that likelihood is low enough to be responsibly ignored in our planning.

The wartime industrial mobilisations of the last century involved great powers striking at the heart of each other's vital interests in a clash of military-economic attrition. No such conflict has occurred (much less persisted) since the advent of nuclear weapons. If there were to be a great power conflict in the 21st century - a possibility that cannot be dismissed - it would be short, sharp and potentially catastrophic, leaving no time for crash naval construction programs. Of course not all wars involve great powers, but it would be even more fanciful to envisage the world looking on as Australia and one of its Southeast Asian neighbours fought a conventional war of attrition extending over the two to three years it takes to initiate a program and build a warship. To put things in perspective, in WWII, the first Australian-built Tribal class destroyer took until March 1942 to be commissioned, and the first River class frigate did not see service until November 1943.

### Logistic dependence and sovereign independence

Dependence on foreign technology and support leaves open the possibility that our sovereign independence might be compromised if our strategic interests diverge from those of our supplier. Such a situation emerged during the Vietnam conflict when Sweden ceased the export of anti-tank missiles to Australia and the United

States. While this possibility cannot be denied, in most circumstances there is no realistic option but to accept and manage that risk. Australia simply does not have the capability to develop and manufacture weapons systems from scratch without a very substantial level of investment - well beyond what the current Defence budget would support and what the community would tolerate. More importantly, the notion is largely a red herring in the context of naval shipbuilding. Our dependence on foreign suppliers is manifest in the advanced sub-systems aboard our vessels, not on the location in which the hull is fabricated and the inevitably foreign-sourced sub-systems are installed. Irrespective of whether our destroyers are built in Adelaide, Maine or Cadiz-San Fernando, the United States can withdraw its software support for the critical Aegis combat system if and when it chooses. The same is true for the US combat system being integrated aboard the *Collins* submarines and the mission computer aboard the F-35 Joint Strike Fighter.

## Other Economic Benefits

Overall, the claimed strategic benefits of local construction are at best unproven, at worst highly implausible. Taken as they stand, they are unlikely to offset cost penalties of the magnitude set out above. Are there nonetheless wider economic benefits that could do so?

### Creating jobs

The most common wider benefit claimed for defence projects is the stimulation of economic activity. For example, in a recent article defending local construction of the future submarine, the chief executive officer of the ASC writes that 'for every direct employee involved in the Collins Class Submarine construction program, it was estimated that there was a multiplier effect of two or three in Australian industry'.<sup>28</sup>

The obvious difficulty with claims of this kind is that they confuse costs and benefits. In effect, they amount to saying that the greater the local inputs consumed by a project, the more worthwhile the project must be. The underlying error is to assume that in the absence of the project, the inputs it uses would lie idle: that the workers it requires, to take but one example, would otherwise live in trees eating nuts until the project comes along, so that employing those workers constitutes a benefit from the project. This assumption is obviously entirely fanciful, especially for the very skilled workforce required for major defence programs. Rather, those employees have a high opportunity cost, best measured by the wages required to attract them, so that the labour income generated by the project is a cost, not a benefit.

The need to take account of these opportunity costs - and the failure of multiplier studies to do so - has been repeatedly stressed by relevant Australian government authorities. As the Industry (now Productivity) Commission has put it:

Multipliers, as simply measures of linkages, can measure a net gain to the economy only to the extent that their demand on resources for associated activities can be met from resources which otherwise would not be used. They do not consider possible alternative uses of such resources. If an expansion of one industry can occur only by bidding resources away from another industry, then there is no net multiplier effect. Indeed, the initial expenditure itself will increase activity only if it involves a more efficient use of resources. In particular, the alternative uses of government funds used to assist the investment are usually ignored. These funds may have greater value (or even higher multipliers) used in other ways or if left in the hands of taxpayers.<sup>29</sup>

Equally, the Department of Finance, in providing guidance on public sector project appraisal, has stated that:

Inclusion of a multiplier effect from income and spending generated by a project is only justified when (a) the affected resources would have otherwise been unemployed and (b) the activities displaced by the project would not have also made use of the idle resources. As a general rule, it is recommended that analysts assume that labour, as with other resources, is fully employed.<sup>30</sup>

Conversely, it is worth noting that it is sometimes argued that using skilled labour in defence production will 'crowd out' more valuable uses of those resources, for instance in mining. This argument is incorrect, at least if the implication is that there is a cost to using those resources - in the form of contraction of other uses - above and beyond the amount paid for them. Rather, in a well-functioning labour market, the amount that must be paid to attract skilled labour will measure its cost, in terms of forgone output, in other activities. To the extent those wage costs have been taken into account in the analysis, any such 'crowding out' will already have been reflected in input prices. Indeed, it is for this reason that a domestic cost penalty (in the form of the 30 per cent ERA) signals that the resources at issue are being withdrawn from more productive uses.

Overall, as well as being analytically flawed, a focus on the indirect benefits of projects, such as alleged job creation effects, is an invitation to inefficiency as it distracts attention from maximising the difference between the direct costs and benefits of the project. If the objective is to generate economic activity and create jobs, the usefulness of the project, the desires of consumers, cost control and value for money are of lesser concern.



## Paying taxes

An error similar to that made in respect of multipliers is often made about tax revenues. Thus, it is frequently argued that local defence production is preferable to overseas sourcing because of the tax revenues local production generates. However, this is only correct if the resources being used (say, the skilled labour) would otherwise be unemployed (thus generating no tax revenues), or employed in uses which generated lower tax revenues. This is highly unlikely. Rather, the more likely case is that the same tax revenue would be secured from alternative uses of the resources. In that event, any taxes paid in the domestic shipbuilding activity are part of the opportunity cost of that activity (in the sense that if domestic shipbuilding were not undertaken, the alternative use of those resources would pay the taxes).

As a result, domestic shipbuilding should only be undertaken if it is capable of paying those taxes, from which it follows that the taxes should be included in the comparison of domestic and overseas costs. Matters are somewhat more complicated for indirect taxes (such as duties on imported components). However, most of the materials used in naval shipbuilding are probably exempt from tariffs under the Tariff Concession System, either because they are not produced locally or because they are being imported under a government contract. As a result, there will, in the usual case, be no (or only minimal) tax revenue advantage from local production, and certainly not one sufficient to offset cost penalties of the magnitude set out above.

What is correct and important, however, is that defence procurement is tax funded. Simply put, each dollar spent on defence equipment is a dollar that must be raised in tax. Raising a dollar in tax transfers a dollar from the taxpayer to the government but also distorts the taxpayer's decisions, for instance by inducing a reduction in hours worked or in the incentives to save. That distortion imposes an economic cost (the so-called deadweight loss or excess burden of taxation), estimated at anywhere from 3 to 71 cents for an extra dollar of revenue, with the most widely accepted estimate being in the order of 30 cents. What this means is that when \$2 is spent producing in Australia defence equipment that could be purchased for a dollar overseas, the loss is not merely the waste of \$1 worth of resources (that could be put to some other use) but also of 30 cents of distortion created by raising that wasted dollar in tax. In other words, each \$1 of excess cost may cost \$1.30 in economic loss.

## Spill-overs

Finally, it is sometimes claimed that there are 'spill-overs' to local construction, in the sense that undertaking production locally reduces costs (or increases quality) in other activities, without the activities that benefit making any explicit payment to government for this gain. (The spill-over is, in other words, an externality, that is, a benefit given or cost imposed without a market transaction.)

While this is not impossible, there is little evidence of such spill-overs and even less that they are policy-relevant, in the sense that they would not be secured without policy intervention. Account must also be taken of the possibility that serving military markets may inculcate a corporate culture and workforce attitudes poorly suited to competing in the commercial world - a negative spill-over. Additionally, even if there were positive, policy-relevant, spill-overs, the question would be whether they were most cost-effectively obtained through local production, as compared to (say) relying on targeted subsidies for skill development. Given the substantial cost penalties local production seems to involve, targeted subsidies, even if less effective, may be more efficient. Lastly, even if overseas sourcing were to lead to any positive spill-overs being entirely lost (rather than secured by other means), the gain to Australia from the resulting cost saving may still be far greater than the value of any forgone spill-over benefits.

## Conclusions

Australia plans to acquire a wide range of naval vessels in the decades ahead at a total cost in the tens of billions of dollars. Taxpayers can rightly demand that those acquisitions are undertaken in a way that ensures value for money. Meeting that demand requires careful attention to the balance between domestic production and the import of naval vessels.

Since the late 1980s, the trend has been to rely on domestic production for a historically high share of the naval program. This has entailed substantial cost penalties that are reflected in the very high rates of assistance provided to Australian naval shipbuilding. Additionally, there have been substantial schedule slippages, imposing costs both in the form of the delayed introduction of capabilities and of increased sustainment outlays on existing platforms. The overall result has been to distort the allocation of resources, not only in the economy as a whole but also in Defence itself, as the high cost of the program reduces the ability to fund the capabilities needed for the defence of Australia. Moreover, analysis suggests the cost penalties associated with Australian production are unlikely to diminish in future.

The goal of defence self-reliance does not provide a sensible justification for bearing these excess costs. Complete self-reliance is not possible in any case. Policy setting is therefore a matter of degree in which the appropriate extent of self-reliance needs to be determined by balancing costs and benefits. As a result, the penalties associated with domestic shipbuilding should only be accepted if they are offset by commensurate benefits.

While such benefits have often been claimed, closer examination reveals them to be slight or non-existent. Specifically, domestic production of naval vessels: does not ensure, or reduce the cost of ensuring, the supply of vessels that meet Australia's strategic requirements; is not necessary to ensure, or to reduce the cost of ensuring, the sustainment of the fleet in peace or in war; and, does not materially enhance

Australia's sovereignty. Nor is it the case that domestic production should be considered an inherently advantageous way of providing jobs, boosting incomes and hence tax revenues; in fact, the effect is the opposite. Nor is it an efficient way to secure technological and workforce training benefits more broadly.

It is therefore crucial that future decisions about sourcing Australia's naval assets are based on rigorous and transparent cost-benefit appraisal, with special scrutiny applied to decisions that involve customised or Australian-unique platforms. Moreover, that appraisal must be based on realistic evaluations of life-cycle costs, rather than the underestimates of future costs that have been a recurring feature of Australian defence planning.

Given that the excess costs, calculated over the entirety of the future fleet program, could amount to many billions of dollars, the loss to Australian society from protecting domestic military shipbuilding could be extremely high. There is also the loss, more difficult to quantify but no less real, should the high cost of building ships in this country force us to settle for a smaller fleet or impose unwarranted opportunity costs on other parts of the Defence portfolio, thus reducing Australia's net defence capability. Unless credible offsetting benefits can be identified, and they have not been to date, the case for continuing the current preference for domestic production is very weak indeed.

*This paper reflects the views of its authors, and should not be imputed to the organisations with which they are affiliated.*

## Notes

- 1 Department of Defence, *Defending Australia in the Asia-Pacific Century: Force 2030*, Canberra, 2009; see also Department of Defence, *Defence Capability Plan 2011*, Canberra, 2011.
- 2 Specifically, based on the characteristics given in *Defending Australia in the Asia-Pacific Century: Force 2030*, we estimate that the submarines (~4200 tonne) will cost at least \$25 billion, the frigates (~4000 tonne) at least \$10 billion and the (~2000 tonne) multi-role patrol vessels at least \$6 billion. Note that the government refuses to disclose the estimates it is using for planning purposes.
- 3 The decision to build the new submarines in Australia was announced in *Defending Australia in the Asia-Pacific Century: Force 2030*.
- 4 The government expressed a 'strong preference' to build the destroyers in Australia in 2000 Defence White Paper, which by 2004 this had hardened into a commitment.

- 5 The last two AEW&C aircraft are being modified from commercial Boeing 737 airframes in Australia.
- 6 Exceptions arise; a small number of hull modules for the new DDG are being built in Spain, and parts of the first *Collins* submarine were fabricated in Sweden.
- 7 Note, however, the Western Australian based firm Austal designs and builds innovative naval vessels in the United States.
- 8 DefenceSA, *Naval Shipbuilding: Australia's \$250 billion Nation Building Opportunity*, Adelaide, 2010.
- 9 Department of Defence, *The Naval Shipbuilding and repair Sector Strategic Plan*, Canberra, 2002.
- 10 This includes the mining technology services and equipment sector, in which Australia now leads the world: see L Tedesco and C Haseltine, 'An economic survey of companies in the Australian mining technology services and equipment sector, 2006-07 to 2008-09', ABARE-BRS research report 10.07, Canberra, July 2010.
- 11 Various US GAO, CRS and CBO reports
- 12 The externalities may be wider than naval shipbuilding. Thus naval shipbuilding may involve externalities to and from commercial shipbuilding and to and from the production of other weapons systems. Note that, technically, these externalities may involve some combination of complementarities (which are situations in which an increase in the supply of one good reduces the marginal cost of producing another) and spillovers (where the increase in supply of one good reduces the average, but not necessarily the marginal, cost of another). For simplicity, both of these are referred to here as spillovers.
- 13 If transport costs are high, the savings (such as avoiding the duplication of fixed costs) achieved through trade can be more than offset by the additional costs of transport.
- 14 Specifically, all else equal, prices will be lower in the home market, while being raised elsewhere by transport costs. The lower (higher) prices will be reflected in higher (lower) real wages for non-mobile labour.
- 15 George Papas, *2008 Audit of the Defence Budget*, McKinsey & Company, 2009. The results on the ERA for Australian naval shipbuilding come from a study undertaken by CRA International for the Department of Defence. The CRA study team included one of the authors of this paper (Henry Ergas).
- 16 In other words, the NRA is a measure of the total price-raising (or reducing) effects on a tradable good of the policies being examined.
- 17 Productivity Commission, *Trade And Assistance Review 2009-10*, Canberra, 2011, p. 19, Table 2.6.
- 18 Weapons systems have three major dimensions. First, the military value of a system depends on its quality which may be described in terms of features such as its speed, destructive force or accuracy. Second, the value of a system also depends on the time at which and for which the system is available. Third, the cost of a system, both at initial deployment and in terms of recurrent resource requirements, needs to be balanced against quality and timeliness. Now, when project difficulties occur, headline cost and quality seem to be kept reasonably constant, while the schedule is delayed. From an economic perspective, this is in and of itself suggestive of *ex ante* inefficiency. In effect, were *ex ante* choice optimal, and assuming the scope for continuous variation in each dimension, at the optimal point the marginal value of the last development time increment saved should be equal to the marginal value of the last quality increasing activity, which should each be equalised to its marginal cost. A change in the constraints relative to that initial optimum should then lead to adjustments in all the dimensions of performance, rather than only or mainly to one. What the observed pattern (in which it is schedule that bears the brunt of the adjustment to the change in constraint) implies is that when difficulties arise, either the marginal valuation of quality rises (so that the willingness to wait for quality increases) or the marginal cost of quality falls, neither of which seem sensible.

- 19 In some cases, the cost of acquisition from overseas would be very close to the marginal cost of production, thereby avoiding the burden of contributing to fixed costs altogether. Under the US Foreign Military sales program, for example, customers pay the marginal cost of supply plus 3.8 per cent (though this is sometimes waived).
- 20 See, for example, John Cole, *Collins Class Sustainment Review - Phase 1 Review*, Department of Defence, Canberra, November 2011.
- 21 Steve Ludlam, 'We should build on our 30-year submarine expertise', *The Australian*, 26 January 2012.
- 22 Adopted in the 1970s, the policy of self-reliance is almost a word-for-word restatement of the Guam doctrine announced by Nixon in 1969 to rhetorically facilitate the US withdrawal from Vietnam.
- 23 See for example: Department of Defence, *Defence and Industry Policy Statement*, Canberra, 2007.
- 24 The original tender evaluation for the replacement *Collins* combat system chose a European solution but this was overturned on 'strategic grounds' by the then government.
- 25 Here, major vessels are defined here as displacing 1000 tons or more.
- 26 While economies of scale are the cost reductions that come from producing more of a product, economies of scope are the efficiencies that can be secured by producing two or more products jointly.
- 27 Tasman Asia Pacific, *Impact of Major Defence Projects: A Case Study of the ANZAC Ship Project*, 2000.
- 28 Ludlam, 'We should build on our 30-year submarine expertise'.
- 29 Industry Commission, *State, Territory and Local Government Assistance to Industry*. Report No: 55, Canberra, 29 October 1966, <[www.pc.gov.au/ic/inquiry/55stateassistance/finalreport/](http://www.pc.gov.au/ic/inquiry/55stateassistance/finalreport/)>.
- 30 Department of Finance, *Handbook of Cost-benefit Analysis*, Canberra, 1991, pp 103, 34-35.