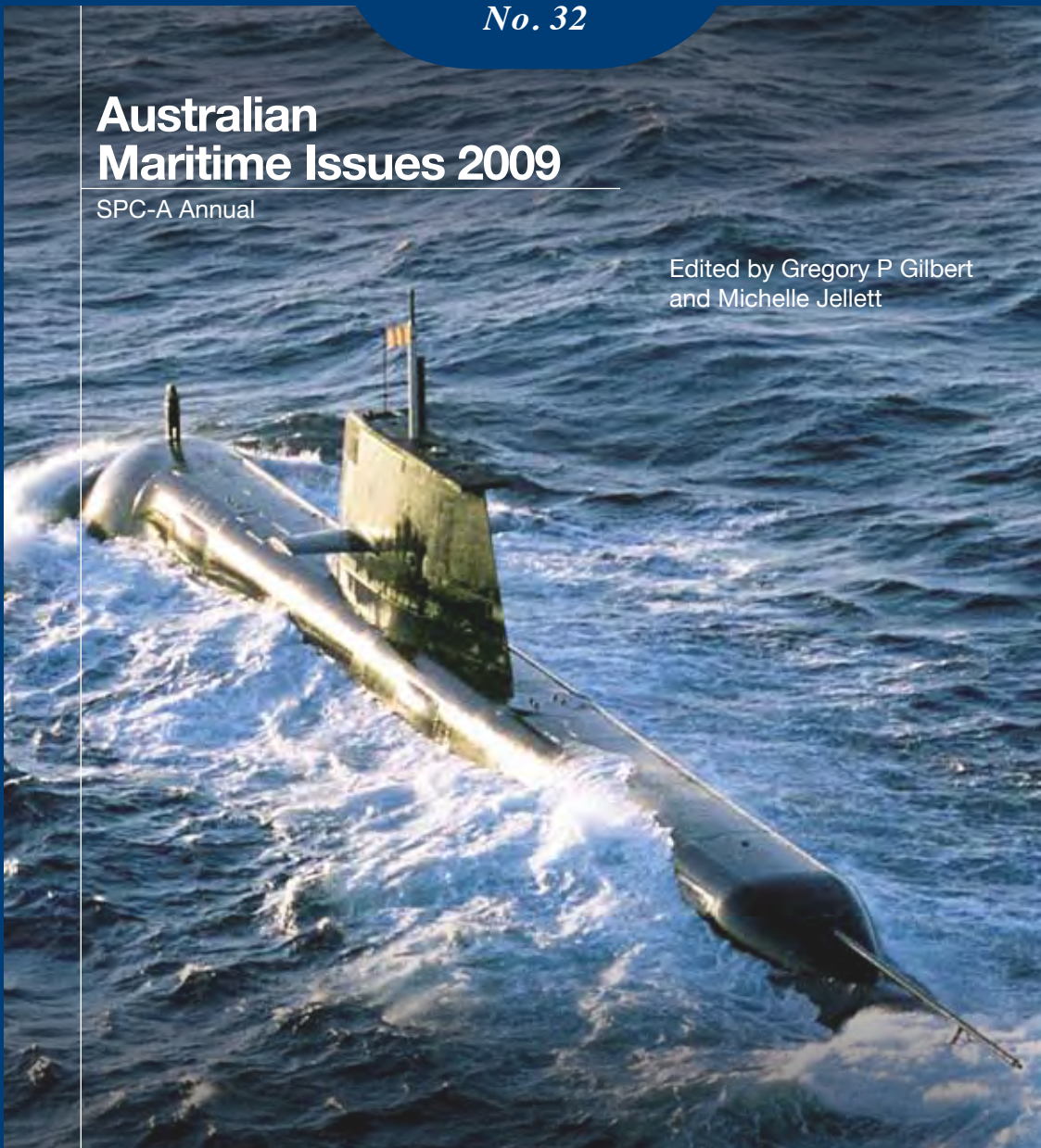*Papers in Australian Maritime Affairs*

No. 32

Australian Maritime Issues 2009

SPC-A Annual

Edited by Gregory P Gilbert
and Michelle Jellett

SEA POWER CENTRE - AUSTRALIA

NAVY

AUSTRALIAN MARITIME ISSUES 2009
SPC-A ANNUAL

AUSTRALIAN MARITIME ISSUES 2009

ISSUES 2009

SPC-A ANNUAL

Edited by Gregory P Gilbert and Michelle Jellett
Sea Power Centre – Australia

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 the 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.

A listing of Centre publications may be found at the back of this volume.

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

Director

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Foreword

The dissemination of maritime and naval issues - both current and historical - are crucial to cultivating debate and discussion on affairs of relevance to the Royal Australian Navy (RAN), the Australian Defence Organisation and the community and the region more broadly. The Sea Power Centre - Australia seeks to promote and preserve such research through publications including the *Papers in Australia Maritime Affairs* series.

The volume begins with the Chief of Navy's address at the International Fleet Review held in Indonesia 17-19 August 2009. This speech highlights the regional view while the global strategic context is described in the recent speeches by our United States (US) Navy colleagues, Admiral Mike Mullen and Admiral John Harvey. These papers may influence the RAN's future operations. A section on Navy values is included to help provide our serving men and women with examples which can provide guidance in our daily actions. This is followed by a selection of papers offering historical and contemporary perspectives on maritime issues, including a discussion of trade routes, the importance of naval logistics and the effect of sonar on marine mammals. There is also a new study analysing the political and strategic importance of the Strait of Hormuz. Expeditionary operations are considered in a number of papers that investigate emerging ideas on operations in the littoral and how the three services can operate as a joint expeditionary Australian Defence Force (ADF). These papers should influence the current debate over the implementation of expeditionary capacities for the ADF. Our 2009 *Semaphore* newsletters covered a wide range of issues including capability, international engagement and history. The volume concludes with the winning entries of the annual Peter Mitchell Essay Competition.

Once again, this collection of papers is a valuable contribution to the current maritime debate. I trust you will enjoy reading *Australian Maritime Issues 2009: SPC-A Annual* and I hope they inspire further informed discussion. In addition, I would welcome your feedback.

Captain Gordon A Andrew, RAN
Director
Sea Power Centre - Australia
1 August 2010

Editor's Note

Semaphore Issue 1 of 2009 has been omitted from this volume. The first issue of *Semaphore* published each year is used to promote the Sea Power Centre - Australia's publications, conferences and other activities coordinated by the centre. *Semaphore* which do not identify a specific author were developed collaboratively with the participation of a number of subject matter experts within Navy.

All information contained in this volume was correct at the time of publication or, in the case of papers being reprinted, was correct at the time of initial publication. Some information, particularly related to operations in progress, may not be current. Minor editorial amendments have been made to papers to correct errors and to apply a standardised format.

The editors gratefully acknowledge the following people for permission to reprint their work: Admiral Mike Mullen, USN; Admiral John Harvey, USN; Ms Angela D'Amico and Rear Admiral Richard Pittenger, USN. We would also like to thank the remaining contributors, named and unnamed for their efforts. This publication is the direct result of the extensive research and writing efforts of this group of people.

In addition we wish to acknowledge the following people and organisations for permission to use the images that have been included within this publication: Australian War Memorial, Phil Belbin, Blue Water Recoveries, Emarat Maritime Dubai, Historic Naval Ships Association (US), David Hobbs, MR Izady (Columbia University), John C Jeremy, John McCutcheon (HMS *Hood* Association), Military Sealift Command (US), National Aeronautics and Space Agency, National Library of Australia, Raytheon, Manar Sehgal, sinodefence, State Library of Victoria, Geoffrey Till, United States Marine Corps and the US National Archives. Each image is acknowledged within its accompanying caption. Several images were specifically prepared for this volume by DesignEmergency. All other images are sourced from the Australian Department of Defence or the Royal Australian Navy.

Contributors

Lieutenant Commander Richard Adams, RAN

Richard Adams is Staff Officer Ethics and Doctrine within the Directorate of Navy Transformation and Innovation. He served formerly as the Staff Officer Maritime Doctrine Development at the SPC-A. He is interested in military education, the ethical foundation of military leadership, the philosophy of military discipline, obedience, rules and duty; notions of honour and shame, metaphor in military service and in education, critical thinking and the Victorian and Edwardian public school. He completed his doctorate at the University of Western Australia. His current research is in the stoic philosophy of Epictetus.

Ms Shannon Alexander

Shannon Alexander is currently an undergraduate student at the Australian National University, completing a Bachelor of Arts/Bachelor of Asian Studies majoring in international relations, security studies and Arabic. Her research interests are broad and include Middle Eastern politics and religion, development studies and foreign language. She recently completed a research internship at the SPC-A through the Australian National Internships Program.

Vice Admiral Russ Crane, AO, CSM, RAN

Russ Crane was appointed Chief of Navy in July 2008. A junior recruit, turned Navy diver, he is committed to fundamental reform of Navy leadership, training and culture through the New Generation Navy initiative. He was promoted to star rank in March 2000 and posted to the Director General Intelligence Surveillance Reconnaissance and Electronic Warfare before being appointed as the Commander Australian Naval Systems Command in October 2001. He was promoted to rear admiral in May 2004 and assumed duties as Director General Coastwatch and subsequently was appointed as Deputy Chief of Navy in June 2006.

Ms Angela D'Amico

Angela D'Amico has over 30 years experience in the fields of active and passive sonar system performance evaluation, beaked whale distribution and habitat research and the development and implementation of geospatial tools to support environmental compliance and marine mammal at-sea data collection and analysis. She has been principal investigator on numerous at-sea data collection and analysis efforts in the fields of bistatic/multistatic active sonar and marine mammal research. As program manager for the NATO SACLANT Undersea Research Centre (currently known as NATO Undersea Research Centre) she initiated a multinational, multidisciplinary research project with the objective of developing tools and technologies to determine the

presence of marine mammals using both visual and passive acoustic methods. She was an invited panel member for the US Marine Mammal Commission Workshop on Beaked Whales (2004) and was a recipient of the US Department of the Navy Meritorious Civilian Service Award in the field of multistatic sonar (1996). She received a Masters of Arts degree in Physical Oceanography from the Virginia Institute of Marine Science, College of William and Mary, Williamsburg, Virginia. She currently works at SPAWAR Systems Center Pacific, San Diego, California. She has co-authored numerous papers on multistatic active sonar research and cetacean distribution and habitat.

Mr Petar Djokovic

Petar Djokovic joined the Department of Defence in 2007 having spent a number of years in ministerial, cabinet and community liaison positions in the Australian Capital Territory Government. He spent some time working in the Air Power Development Centre where he wrote historical articles on subjects such as the Royal Australian Air Force's (RAAF) role in the Indonesian Confrontation, the World War II era Northern Territory Special Reconnaissance Unit and RAAF peacekeepers. He joined the SPC-A as a Historical Officer in 2007 with a particular interest in naval aviation. He holds a Bachelor of Commerce (banking and finance) degree from the University of Canberra and has a lifelong interest in history and international relations.

Mr Andrew Forbes

Andrew Forbes is the Deputy Director (Research) at the SPC-A. He is a visiting senior fellow at the Australian National Centre for Ocean Resources and Security, University of Wollongong; a research fellow at the Centre for Foreign Policy Studies at Dalhousie University; an associate of the Corbett Centre for Maritime Policy, Defence Academy of the United Kingdom; and a member of the International Institute for Strategic Studies, London.

Squadron Leader Lewis Frederickson

Lewis Frederickson is a serving officer in the RAAF. He holds undergraduate and post graduate degrees from Central Queensland University, and is a graduate of the Australian Command and Staff Course. He has a keen interest in the study of Australian history and commenced research into a PhD in this discipline through the University of New South Wales in 2010.

Dr Gregory P Gilbert

Gregory Gilbert previously worked as a naval design engineer with the Department of Defence (Navy) between 1985 and 1996 and was a Defence contractor until 2002. He has broad research interests including military strategy and history, the archaeology and anthropology of warfare, Egyptology, and international relations in the Middle East.

Admiral John Harvey, Jr, USN

John Harvey was commissioned from the US Naval Academy in 1973 and immediately commenced training in the Navy's nuclear propulsion program. He has served at sea in US Ships *Enterprise*, *Bainbridge*, *McInerney*, *Nimitz* and *Long Beach* and commanded US Ships *David R Ray*, *Cape St George* and Cruiser-Destroyer Group Eight/*Theodore Roosevelt* Strike Group. Ashore he has served three tours including serving as the senior military assistant to the Under Secretary of Defence (Policy) and on the Navy Staff as Deputy for Warfare Integration. Most recently, he served as the 54th Chief of Naval Personnel/OPNAV N1 and as the Director, Navy Staff. Admiral Harvey assumed command of the US Fleet Forces Command in July 2009.

Lieutenant Commander Catherine Hayes, RAN

Catherine Hayes joined the RAN in 1992. She is a qualified Principle Warfare Officer specialising in air warfare. Her sea postings include HMA Ships *Darwin*, *Geelong* (II), *Melbourne* (III), *Sydney* (IV) and *Kanimbla* (II), and command of *Armidale* class patrol boat crew Attack Five on HMA Ships *Armidale* (II), *Bathurst* (II), *Albany* (II) and *Ararat* (II). She has deployed on Operations SLIPPER, FALCONER, SUMATRA ASSIST I and II, ANODE, CRANBERRY, RELEX and RESOLUTE. Her shore postings include working in the team coordinating the introduction into service of the ADF's new amphibious capability and studying at the Australian Command and Staff College in 2009. She is currently the Staff Officer to the Vice Chief of the Defence Force.

Commander David Hobbs, MBE, RN (Rtd)

David Hobbs joined the Royal Navy in 1964. As a naval pilot he flew Gannet, Hunter and Canberra aircraft and Wessex commando helicopters. After retiring from the active list in 1997, he was curator and deputy director of the Fleet Air Arm Museum at Royal Naval Air Station Yeovilton, UK, until 2006. He has since been a full time author and historian. Published in 1982, his first book has been followed by many more, including *Aircraft Carriers of the Royal and Commonwealth Navies* (1996) and *A Century of Carrier Aviation* (2009). He has read papers at major historical conferences worldwide and established a reputation as a media broadcaster on naval aviation matters.

Chief Petty Officer, 2nd Class, E Gordon Howe

Gordon Howe enlisted in the Canadian Forces in 1976 as an Electronic Warfare Operator and was employed as such on ships of the Canadian Atlantic Fleet. After completing his technical training in 1982, he sailed on HMCS *Athabaskan* before being posted to Canadian Forces Fleet School in 1985. Here he developed and taught Shipborne Digital Equipment Maintenance courses to technicians from both Pacific and Atlantic Fleets. In 1993 he went west to the Canadian Pacific Fleet, sailing on HMC Ships *Vancouver*, *Ottawa* and *Winnipeg*, as well as two stints in the West Coast Fleet School were he was

employed as a Standards Petty Officer. He is currently employed in MARPAC HQ - J37 as a Staff Officer responsible for Combat System Readiness for the Canadian Pacific Fleet.

Miss Michelle Jellett

Michelle Jellett commenced her career with the Department of Defence in early 2009. She graduated from Monash University with a Bachelor of Arts degree majoring in politics and Spanish. She has a strong interest in international affairs and languages. Since the end of 2009 she has been a research officer at the SPC-A.

Captain Peter Leavy, RAN

Peter Leavy is the Commanding Officer of HMAS *Sydney* (IV). He joined the RAN in 1984 and after initial seaman officer postings, completed the RAN Principal Warfare Officer's course in 1993. He has served in a variety of different ships, culminating as Commanding Officer in both HMAS *Stuart* (II) in 2005-6 and *Sydney* from April 2009. He served in the North Arabian Gulf as Chief of Staff to Commander Task Group 633.1 during early 2003 and as Commander Task Group 158.1 during 2008. Ashore he has served in electronic warfare and strategic policy postings as well as Director of the SPC-A. He holds Bachelor of Science (Hons), Master of Arts (Maritime Policy) and Master of Management (Defence Studies) degrees.

Mr Matt Linfoot

Matt Linfoot is an analyst within the Department of Defence. He was awarded a Bachelor of Arts (Hons) degree from the University of Tasmania, majoring in history and psychology, in 2007. He has a strong interest in military strategy and international affairs. He conducted researched on maritime China while attached to the SPC-A.

Commander David E Mazur, CF

A native of Kitchener Ontario, David Mazur enrolled in the Canadian Forces in 1988. Following training ashore and in HMC Ships *Cowichan* and *Mackenzie,* he moved to Halifax and joined his first operational ship, HMCS *Fraser*, where he was awarded his Bridge Watch Keeping ticket. He then specialised in anti-submarine warfare, participating in several operational deployments. After postings to shipboard and instructional positions, he attended a year-long ORO course, shifting to the west coast for a deployment to the Middle East in HMCS *Regina*. He then filled multiple staff positions within the Canadian Fleet Pacific Headquarters. In 2006, he was appointed as Executive Officer of HMCS *Vancouver.* After a significant amount of sailing around the Pacific North West over 18 months, he was promoted to his current rank and posted to the Maritime Pacific Headquarters as the Deputy Chief of Staff of Operational Readiness. In 2009 he attended the year-long Australian Command and Staff College, and much to his dismay, has since returned to Canada. He is currently working as

the Director of Special Requirements - Senior Staff Officer Maritime in the Canadian Special Operations Force Command HQ in Ottawa, Canada.

Major Damien McLachlan

Damien McLachlan joined the Australian Army in 1992 before being appointed as an Officer Cadet and attending the Officer Cadet School of New Zealand in 1996. He has had a variety of Regimental appointments including to the 1st Combat Service Support Battalion as part of the Army's 1st Brigade and 3rd Combat Signal Regiment in the 3rd Brigade. His staff appointments include Staff Officer to Director General Corporate Management and Planning - Army. He is a graduate of the Australian Command and Staff College and holds bachelor degrees in science and engineering. Operationally, he deployed to East Timor in 2006 with the 3rd Brigade.

Admiral Mike Mullen, USN

Mike Mullen was sworn in as the 17th Chairman of the Joint Chiefs of Staff on 1 October 2007, serving as the principal military advisor to the President, the Secretary of Defense, the National Security Council and the Homeland Security Council. He graduated from the US Naval Academy in 1968 and has commanded three ships: US Ships *Noxubee*, *Goldsborough* and *Yorktown*. As a flag officer, he commanded Cruiser-Destroyer Group 2, the *George Washington* Battle Group and the US 2nd Fleet/NATO Striking Fleet Atlantic. Ashore he has served in leadership positions at the Naval Academy, in the Navy's Bureau of Personnel, in the Office of the Secretary of Defense and on the Navy Staff and he was the 32nd Vice Chief of Naval Operations. His last operational assignment was as Commander, NATO Joint Force Command Naples/ Commander, US Naval Forces Europe. Prior to becoming chairman, he served as the 28th Chief of Naval Operations.

Dr Peter V Nash

Peter Nash studied naval history for his master's degree at King's College London, where in 2006 he received his PhD. He has spent several years researching archives on naval logistics, including a period as the Edward S Miller Research Fellow in Naval History at the US Naval War College. He has written 'The Royal Navy in Korea: Replenishment and Sustainability' in *British Naval Strategy East of Suez, 1900-2000: Influences and Actions*. His new book *The Development of Mobile Logistic Support in Anglo-American Naval Policy 1900-1953* was published in November 2009 as part of 'New Perspectives on Maritime History and Nautical Archaeology' series. He is Honorary Treasurer of the Society for Nautical Research, a councillor of the Navy Records Society, a vice president of the Marine Society and Sea Cadets, and a fellow of the Royal Society for the encouragement of Arts, Manufactures and Commerce.

Mr John Perryman, CSM

John Perryman joined the RAN in January 1980 as a 16 year old junior recruit. During a career spanning 25 years he attained the rank of Warrant Officer Signals Yeoman and later commissioned as a Lieutenant. Throughout his service he saw much of the world and participated in numerous exercises and operations that included operational deployments to Somalia, Bougainville and East Timor. He transferred to the Naval Reserve in November 2004 when he took up the position of Senior Naval Historical Officer at the SPC-A. He is the co-author of *Australia's Navy in Vietnam* and has made numerous written contributions to a wide range of historical publications. In February 2008 he was appointed as the official Commonwealth observer and historian on the successful search for the wrecks of HSK *Kormoran* and HMAS *Sydney* (II) for which he was awarded a Conspicuous Service Medal in 2009.

Rear Admiral Richard F Pittenger, USN (Rtd)

After graduating from the US Naval Academy, Richard Pittenger served mostly in destroyers in positions related to anti-submarine warfare (ASW). He served as ASW Officer in two ships and as Weapons Officer and Executive Officer in two others. He commanded an ocean mine sweeper off Vietnam and, later, a fast frigate equipped with a prototype tactical towed array, an advanced active sonar, as well as an ASW helicopter. Command of a destroyer squadron with two deployments to the Mediterranean, Black and Baltic seas, as well as substituting for RN FOF2 in a major Strike Fleet Atlantic Exercise during the Falklands conflict, rounded out his sea-going experiences. Ashore his duties included tours of duty as Force ASW Officer on the surface type commander's staff, positions relative to surface ASW systems development and sponsorship on the Chief of Naval Operations' staff and Chief of Staff, of US Naval Forces, Europe. His final two tours of duty were as the CNO's ASW Officer and finally as The Oceanographer of the Navy. In addition to his US Naval Academy degree (BS Engineering), he earned a Masters of Science (Physics, Underwater Acoustics) degree and attended the Naval War College. Since retiring from the Navy, he has been at the Woods Hole Oceanographic Institution where he served as the Vice President for Marine Operations.

Lieutenant Commander Malcolm A Ralston, RAN

In 1977 Malcolm Ralston joined the RAN a junior recruit at HMAS *Leeuwin*. Specialising as a Safety Equipment sailor he undertook initial training at HMAS *Albatross* before posting to the aircraft carrier HMAS *Melbourne* (II). Other sea postings include HMA Ships *Stalwart* (II) and *Canberra* (II), where he was awarded a Maritime Commander's Commendation. As a Petty Officer he instructed Survival at Sea to recruits at HMAS *Cerberus* and completed a Diploma of Teaching through Melbourne University. Promoted to CPO in 1995 he worked at the Directorate of Naval Warfare as the Staff Officer Survival Equipment before commissioning as an Instructor Officer in 1996. During his initial posting to RAAF Wagga as the Officer in

Charge Quality Control he completed a Bachelor of Vocational Education and Training. Since his 2003 promotion to Lieutenant Commander he has held a variety of training specialist positions including Training Manager in HMAS *Kanimbla* during Operation SUMATRA ASSIST and the Officer in Charge of RAN Training Systems School. In 2006 he was appointed Executive Officer RAN Recruit School. He graduated from the Australia Command and Staff College in 2009.

Commander John T Richardson, CNF

John Richardson was born in 1862 and was commissioned in the Victorian Navy (Australian Colony) as a Sub-Lieutenant in 1888 and ten months later was promoted to Lieutenant. In the 1890s he completed specialist training in gunnery and torpedo with the Royal Navy and served on HMS *Swiftsure*. He was appointed Acting Naval Commandant of the Victorian Navy in 1900 and promoted to Commander in 1901. After a period on the unattached list 1902-6, he was appointed to the position of Acting Naval Commander Queensland, in the Commonwealth Naval Forces (CNF). He was in this position when he wrote the report published in this volume, although his formal promotion to the rank of Captain and posting to Naval Commander Queensland was backdated to July 1909. He served as District Naval Officer Melbourne throughout World War I and retired in 1920.

Commander Manav Sehgal, IN

Manav Sehgal was commissioned in the Executive Branch of the Indian Navy in July 1994. He has performed numerous sea assignments, including the command of two minor war vessels. A specialist in gunnery and missile warfare, his specialist tenures include Gunnery Officer of IN Ships *Talwar* and *Trishul* and instructor at the Gunnery Training Establishment INS *Dronacharya*. He is an alumnus of the National Defence Academy, Khadakvasla and Defence Services Staff College, Wellington and holds a post graduate degree in military studies. Presently, he is posted in the Directorate of Personnel at Integrated Headquarters, Ministry of Defence (Navy), New Delhi.

Dr David Stevens

David Stevens has been the Director of Strategic and Historical Studies, SPC-A, since retiring from full time naval service in 1994. He graduated from the Australian National University with a Master of Arts (Strategic Studies) degree in 1992, and in 2000 received his PhD in history from the University of New South Wales at the Australian Defence Force Academy.

Lieutenant Jenny Zhang, RAN

Jenny Zhang joined the RAN in 2004 in her third year of university through the Undergraduate Scheme. In 2006 she graduated from the University of Melbourne with Bachelor of Science and Bachelor of Electrical Engineering degrees. In 2007 she attended HMAS *Creswell* for her New Entry Officer Course. She has been posted to HMAS *Sydney* (IV) and recently returned from Operation SLIPPER in HMAS *Warramunga* (II). She obtained her Weapons Electrical Certificate of Competence in September 2009 and is currently working at the Anzac System Program Office as the Combat Systems Engineer.

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Abbreviations

AAW	Anti-Air Warfare
AC-FLOC	Adaptive Campaigning - Future Land Operating Concept
ACSC	Australian Command and Staff College
ADAS	Amphibious Deployment and Sustainment
ADF	Australian Defence Force
ADFA	Australian Defence Force Academy
ADFWC	Australian Defence Force Warfare Centre
AEW&C	Airborne Early Warning and Control
AFS	Average Funded Strength
AIF	Australian Imperial Force
ALJ	Assault Life Jacket
ANZUS	*Security Treaty between Australia, New Zealand and the United States of America 1951*
APS	Australian Public Service
ARE	Amphibious Ready Element
ARG	Amphibious Ready Group
ASDIC	Allied Submarine Detection Investigation Committee
ASEAN	Association of Southeast Asian Nations
ASROC	Anti-Submarine Rocket
ASuW	Anti-Surface Warfare
ASW	Anti-Submarine Warfare
AWM	Australian War Memorial
AWS	Aegis Weapon System
BB	Bottom Bounce
BCE	Before the Common Era
b/d	Barrels Per Day
BP	British Petroleum
C2	Command and Control
CDG	Capability Development Group

CDSS	Centre for Defence and Strategic Studies
CE	Common Era
CEC	Cooperation Engagement Capability
cf	Cubic Feet
CF	Canadian Forces
CMF	Coalition Maritime Forces
CNF	Commonwealth Naval Forces
CNO	Chief of Naval Operations (US)
COMFAA	Commander Fleet Air Arm
COTS	Commercial-off-the-Shelf
CS	Combat System
CSS	Combat Service Support
CTF	Combined Task Force
CZ	Convergence Zone
DDG	Guided Missile Destroyer
DDGH	Guided Missile Destroyer (Helicopter Equipped)
DMO	Defence Materiel Organisation
DO	Distributed Operations
EAS	Entry by Air and Sea
ECM	Environmental/Electronic Countermeasures
EMU	Experimental Military Unit
ESG	Expeditionary Strike Group
FAA	Fleet Air Arm
FAC	Fast Attack and Patrol Craft
FJOC	Future Joint Operations Concept
FLYCO	Flying Control Position
FMOC	Future Maritime Operating Concept
FRAM	Fleet Rehabilitation and Modernisation
FTE-A	Full Time Equivalence - Average
GCC	Gulf Cooperation Council
GDP	Gross Domestic Product

HIJMS	His Imperial Japanese Majesty's Ship
HMAS	Her/His Majesty's Australian Ship
HMCS	Her/His Majesty's Canadian Ship
HMS	Her/His Majesty's Ship
HQ	Headquarters
HQJOC	Headquarters Joint Operations Command
IN	Indian Navy
INS	Indian Navy Ship
INEGMA	Institute for Near East and Gulf Military Analysis
IONS	Indian Ocean Naval Symposium
IRGC	Islamic Revolutionary Guard Corps
ISR	Intelligence, Surveillance and Reconnaissance
JHSA	Joint Health Support Agency
JLC	Joint Logistics Command
JOC	Joint Operations Command
JTF	Joint Task Force
JWDTC	Joint Warfare, Doctrine and Training Centre
LCH	Heavy Landing Craft
LCM	Medium Landing Craft
LFAS	Low-Frequency Active Sonar
LHD	*Canberra* Class Amphibious Ship
LNG	Liquefied Natural Gas
LOSC	*United Nations Convention on the Law of the Sea 1982*
LPA	Amphibious Transport
LSH	Heavy Landing Ship
LZ	Landing Zone
MEB	Marine Expeditionary Brigade
MEU(SOC)	Marine Expeditionary Unit (Special Operations Capable)
MFAS	Mid-Frequency Active Sonar
MOLE	Manoeuvre Operations in the Littoral Environment
MP	Member of Parliament

MPS	Maritime Prepositioning Ship
MRH	Multi Role Helicopter
MV	Motor Vessel
NATO	North Atlantic Treaty Organization
NCM	Non-Commissioned Member
NCW	Network Centric Warfare
OMFTS	Operational Manoeuvre from the Sea
OPR	Operational Preparedness Requirement
PLAN	People's Liberation Army Navy
POE	Primary Operational Environment
PRC	People's Republic of China
RAF	Royal Air Force
RAAF	Royal Australian Air Force
RAN	Royal Australian Navy
RANR	Royal Australian Naval Reserve
RANVR	Royal Australian Naval Volunteer Reserve
RN	Royal Navy
Rtd	Retired
RTS	Raise, Train and Sustain
SAD	Ship's Army Detachment
SEAL	Sea, Air and Land teams
SEATO	Southeast Asia Treaty Organisation
SLOC	Sea Line of Communication
SMS	*Seine Majestat Schiff* (His Majesty's Ship) - German WWI designation
SPC-A	Sea Power Centre - Australia
SPO	System Program Office
SS	Steam Ship
SSS	Special Service Squadron
STOM	Ship to Objective Manoeuvre
TNT	Tri-Nitro-Toluene (explosive)

TSS	Traffic Separation Scheme
UAE	United Arab Emirates
UK	United Kingdom
UN	United Nations
US	United States
USMC	United States Marine Corps
USN	United States Navy
USS	United States Ship
VCDF	Vice Chief of the Defence Force
WPNS	Western Pacific Naval Symposium
WWI	World War I
WWII	World War II

PART I:
NAVIES TODAY AND TOMORROW

*Naval leaders from around the world gather to view the
Indonesian Fleet Review in Manado, Indonesia* (Defence)

Address to International Fleet Review, Indonesia, August 2009: Building Comprehensive Maritime Security in the Asia-Pacific Region

Vice Admiral Russ Crane, AO, CSM, RAN

The 2009 International Fleet Review is an opportune occasion to reflect on maritime security in the Southeast Asian region, an issue that is of particular interest and significance to the Royal Australian Navy (RAN) as it seeks to complement the efforts of other regional partners in this important endeavour. There is no doubt that maritime security is of immense importance to all littoral, seagoing and coastal states. There is equally no doubt that we can achieve this security only through cooperation to protect our shared interests. Our good order at sea depends upon it, based on our common maritime geographic circumstance and national requirements. How we are to achieve this security requirement is a question of pressing importance.

Australia's recent Defence White Paper, *Defending Australia in the Asia-Pacific Century: Force 2030*, is based on a fundamental truth that Australia, like many nations, is bound by the sea.[1] The issues stemming from our maritime strategy are not dissimilar to those facing many of our friends. In the 21st century, securing the lifeblood of our economic livelihoods remains a core role for all navies. We, as professional mariners, and noting the ongoing effect of globalisation, must ensure our efforts continue to be coordinated to ensure our maritime security architecture remains robust, thereby providing for the future prosperity of all. For Australia, the most substantial part of our trade is through the maritime environment with approximately 95 per cent of our trading volume, and 75 per cent of our trading value exchanged or derived from the maritime environment. Regionally, over 45 per cent of our trading volume is exchanged through the Indonesian archipelago. I would surmise that the situation is not altogether different across the Asia-Pacific region. It only highlights the need for an ongoing strengthening of ties and understanding between all nations to continue to provide for a stable maritime security architecture and agenda.

At a global level, the *United Nations Convention on the Law of the Sea 1982* recognises both the shared interest of all countries in the security and certainty of a comprehensive ocean regime, and the sovereignty each nation exercises over waters within their separate national jurisdictions. For Australia, our exclusive economic zone reaches from the Heard and McDonald Islands in the Southern Ocean, to the Christmas and Cocos Islands in the Indian Ocean and to Norfolk Island in the Pacific Ocean. We are required to maintain security across a domain that ranges from the long strategic

maritime approaches near Indonesia and East Timor, to the close territorial boundaries we share with Papua New Guinea in the Torres Strait. This presents the RAN with a wide ranging operating environment across which to provide maritime security.

Having a strong strategic maritime security dialogue assists us enormously in achieving this requirement across this broad global expanse. Opportunities to exchange information not only assist in overcoming the tyranny of distance but also ensure that we continue to maintain our traditional good order at sea through these and other confidence building measures. It is of mutual benefit to us and to our friends and partners who share the maritime operating environment. The ongoing global efforts to secure the maritime trade base complement the legal framework established through the various maritime security fora. They aim to help us all develop understanding, transparency and confidence, and they ensure we have well understood and clear, agreed options to work with to pursue the maritime security agenda. This not only provides for a stronger and more stable strategic framework in our immediate neighbourhood, but more importantly in the wider Asia, Pacific, and Indian Ocean regions. It does so through defining and reducing potential threats to our respective national prosperity through regional and global support. Australia is not alone in the quest to develop a network of national partnerships in our region. Our alliance with the United States will remain the bedrock of our strategic partnerships. It is an alliance with a long and steeped history of cooperation in time of need. More broadly, the RAN has, in the last ten years, increased its formal level of international engagement by over 200 per cent. Regional security cooperation continues to be strengthened through important cooperative exercises and agreements. Most recently, Australia has conducted exercises with Japan, the Republic of Korea, Malaysia, Singapore and Indonesia. To further this endeavour, we seek to improve our already warm dialogue and formal security policy cooperation with India, Pakistan and China.

The signing of the Lombok Treaty with Indonesia was an important and integral step in providing mutual security assurance, and improving our level of understanding.[2] The treaty provides a framework for increased security cooperation to combat terrorism, transnational crime and other security threats. The threat of terrorism, transnational crime and other security threats from non-state actors have emerged strongly throughout recent years and affected all levels of society and security. What distinguishes this threat from the traditional maritime security threat is the lack of adherence to established international law protocols. No nation, including Australia, can afford to be isolated in the face of the threat of transnational organised crime. I note that the *ASEAN Plan of Action to Combat Transnational Crime* makes this clear in defining the threat and seeking to constrain and combat its effects.[3] Responding to a threat from a singular origin is a traditional strategic goal for navies as it is a natural projection of sovereign sea power. A successful response to a transnational criminal enterprise is marked by international cooperation to address the many links of the threat wherever they may be found. The criminal nature of the threat conflicts with

this requirement but this conflict should not, in my opinion, be an impediment to our collective and coordinated response. Navies have traditionally operated in constabulary roles in support of national requirements. The response of each of our navies should be to leverage off the collective benefit gained through closer ties and coordination. Increasing the frequency and coherency of our strategic dialogue, especially in the area of maritime domain awareness and data sharing, in combating transnational crime ensures not only the required synchronisation of efforts to be effective, but also assures each of our nations' prosperity and sovereignty.

The deployment of Australia's new *Armidale* class patrol boats and increased patrol routines in Australia's wider strategic approaches illustrate how we are addressing the requirement. It goes hand in hand with an increase in coordination and visibility of this requirement between Australia and our regional neighbours. All of our efforts should seek to ensure the continuance of good order at sea and therefore our ongoing regional security and assured economic prosperity from these non traditional threats.

Discussing our concerns openly continues to give us the opportunity to resolve differences of opinion and build confidence between us all to maintain a strong regional maritime security framework. It also affords us the opportunity to develop combined operating concepts and mutually acceptable procedures, building on the individual successes of the past. There should be no conflict between pursuing a common response to a common, transnational threat, and protecting our national sovereignty through maritime security. It is a natural recognition of the common good to littoral states and user nations of such a maritime system which is a good outcome of globalisation and a key to our post-modern navies in the 21st century.

Development of ideas and capabilities in these fora must be further encouraged. For example, we unite in our response to humanitarian emergencies and natural disasters in our region. Reproducing this in a maritime security framework is both achievable and necessary in ensuring each of our national aims, sovereignty and economic prosperity is maintained. The current seminar, *Building a Comprehensive Security in the South-East Asia Region*, is an important development in our efforts to better coordinate the maritime security response to non traditional, transnational threats. All states are especially interested in these security outcomes in the contemporary globalised world; to achieve the outcome that we seek all states must provide important contributions to the agenda. I therefore appreciate the opportunity to participate in this important dialogue in pursuing the overall agenda of maritime security, not only as the representative of the RAN, but also as a professional mariner, interested in our assured maintenance of security. The opportunity provided by Admiral Purdijatno and the Indonesian navy through this very important effort collectively to further and strengthen our architecture and dialogue addressing maritime security is a welcome one. It is an effort which has great benefit to all nations who are subject to the effects of globalisation, where an attack on one maritime nation affects the security and prosperity of us all.

Notes

1   Department of Defence, *Defending Australia in the Asia Pacific Century: Force 2030*, Canberra, 2009.

2   The *Agreement Between the Republic of Indonesia and Australia on the Framework for Security Cooperation* 2006 is available at <www.dfat.gov.au/geo/indonesia/ind-aus-sec06.html> (7 May 2010).

3   Further detail on the *ASEAN Plan of Action to Combat Transnational Crime* is available at <www.aseansec.org/16133.htm> (7 May 2010).

Address to Kansas State University on Military Strategy, 3 March 2010

Admiral Mike Mullen, USN

You know, in each era of American history, at least in terms of armed conflict, each one can be defined by an overarching strategy – a doctrine, if you will, that captures the proper use of military force suitable to the threats of the day. During the Cold War, it was largely the strategy of containment that dominated our thinking – the notion that military force, or more importantly, the threat of military force was best applied in preventing the spread of communism through nuclear deterrence and/or conventional alliances. So came our nuclear triad, and the theory of mutually assured destruction, and the advent of the North Atlantic Treaty Organization (NATO). During World War II, we followed a doctrine very much akin to that used by General Grant in the Civil War, attrition of the enemy force. To accomplish this, however, we needed also to attack the enemy population's will to fight. And so came the bombings of Dresden and Hiroshima and Nagasaki – on and on. Farther back in our past, we could go, from the trench warfare of World War I to the limited conventional war we fought against Spain in 1898, to the unconventional wars we fought against the Barbary pirates in the early 1800s. Each era has something to teach, for there is no single defining American way of war. It changes over time, and it should change over time, adapting appropriately to the most relevant threats to our national security, and the means by which that security is best preserved. As the godfather of theory himself, Carl von Clausewitz, once observed, war is but an instrument of policy, beholden to it. And because policies change, the conduct of war must also change.

We have, as a nation, been at war continuously over the last nine years. Indeed, you could argue that your military has actually been engaged in combat operations since 1990, when we fought DESERT STORM and then stayed around to enforce sanctions and no-fly zones against Saddam Hussein. The enemies we faced in that time have certainly varied. We quickly deposed the Taliban from power shortly after the attacks of 9/11 and then went on to defeat the Ba'athist forces of Saddam's regime, later struggling to throw back a rampant Sunni insurgency. Today, the wars in Iraq and Afghanistan have generally become a fight against a syndicate of Islamic extremists led by Al Qaeda and supported by a host of both state and non-state actors. The epicentre of this fight remains, in my view, the border area between Afghanistan and Pakistan, where not only does Al Qaeda's leadership plot and plan to attack America, but also where a new collection of like-minded extremist groups partner together to support them and to further destabilise the entire region.

In other words, these wars also have changed in character. I've watched and advised two administrations as they have dealt with this struggle. And I've come to three conclusions – three principles – about the proper use of modern military forces. The first is that military power should not, maybe cannot, be the last resort of the state. Military forces are some of the most flexible and adaptable tools to policy makers. We can, merely by our presence, help alter certain behavior. Before a shot is even fired, we can bolster a diplomatic argument, support a friend or deter an enemy. We can assist rapidly in disaster-relief efforts, as we did in the aftermath of Haiti's earthquake. We can help gather intelligence, support reconnaissance and provide security. And we can do so on little or no notice. That ease of use is critical for deterrence; an expeditionary force provides immediate, tangible effects. It is also vital when innocent lives are at risk. So yes, the military may be the best and sometimes the first tool; it should never be the only tool. The tangible effects of military engagement may give policy makers a level of comfort not necessarily or wholly justified. As we have seen, the international environment is more fluid and more complex than ever before. Not every intended target of one's deterrent will act rationally and not every good intention will be thus received. Longer-lasting, more sustainable effects will most assuredly demand a whole-of-government, if not a whole-of-nation effort. Defence and diplomacy are simply no longer discrete choices, one to be applied when the other one fails, but must, in fact, complement one another throughout the messy process of international relations. As President Obama noted in his West Point speech, when he announced his strategy for Afghanistan, we cannot count on military might alone. We have to invest in our homeland security; we have to improve and better coordinate our intelligence; and we will have to use diplomacy, because no one nation can meet the challenges of an interconnected world acting alone. My fear, quite frankly, is that we aren't moving fast enough in this regard. US foreign policy is still too dominated by the military, too dependent upon the generals and admirals who lead our major overseas commands. It is one thing to be able and willing to serve as emergency responders; quite another to always have to be the fire chief. Secretaries Clinton and Gates have called for more funding and more emphasis on our soft power, and I could not agree with them more. Should we choose to exert American influence solely through our troops, we should expect to see that influence diminish in time. In fact, I would argue that in the future struggles of the asymmetric counterinsurgent variety, we ought to make it a precondition of committing our troops, that we will do so only if and when the other instruments of national power are ready to engage as well.

There's a broader issue involved here. For, in addition to bringing the full weight of the US government to bear, we must also bring our allies and partners with us to the fight. Forty-two other nations fight alongside us in Afghanistan, as did so many others in Iraq. Whether by formal alliance or by informal agreement, these multinational commitments lend not only a higher sense of legitimacy to the effort, they lend to local populations certain skills and knowledge which we alone do not posses. The Australians

are experts at counterinsurgency warfare; the British have a long tradition of service in that part of the world and bring unique insights; the Germans and the French and the Italians have superb national police organisations for Afghans to emulate. In my view, whatever drawbacks of alliance management there may be, they are more than outweighed by the benefits of operations in unison. With the US providing the bulk of forces, it should come as no surprise to anyone that some may avail themselves of lesser contributions. But that doesn't detract from the very real impact many of them make. It also doesn't mean we shouldn't exhort them to do more. For our part, we have become the best counterinsurgency force in the world and we didn't do it alone. We had a lot of help.

That brings me to number two: force should, to the maximum extent possible, be applied in a precise and principled way. War costs the societies that engage in it a great deal; lives and resources diverted from pursuits that a more peaceful time would allow. Even now, as we are poised to reach 1000 troop deaths in Afghanistan, we're reminded of the thousands more Afghans who have been killed and the hundreds of coalition soldiers who have likewise perished; not to mention the property and infrastructure damage that will yet take years from which to recover. Though it can never lessen the pain of such loss, precisely applying force in a principled manner can help reduce those costs and actually improve our chances of success. Consider for a moment ongoing operations in Marja in Afghanistan, General McChrystal chose to move into this part of Southern Afghanistan specifically because it was a hub of Taliban activity. There, they had sway over the people; there, they were able to advance their interests to other places in the country. It wasn't ground we were interested in retaking so much as enemy influence we were interested in degrading. And so this is a much more transparent operation. We did not swoop in under the cover of darkness. We told the people of Marja and the enemy himself when we were coming and where we would be going. We did not prep the battlefield with carpet-bombing or missile strikes. We simply walked in on time. Because frankly the battlefield isn't necessarily a field anymore. It's in the minds of the people. It's what they believe to be true that matters. And when they believe that they are safer with Afghan and coalition troops in their midst and local governance at their service, they will resist the intimidation of the Taliban and refuse to permit their land from ever again becoming a safe haven for terror. That is why the threshold for the use of indirect fire in this operation is so high. That's why General McChrystal issued more restrictive rules for night raids. And it's why he has coalition troops operating in support of Afghan soldiers and not the other way around. In this type of war, when the objective is not the enemy's defeat but the people's success, less really is more. Each time an errant bomb or a bomb accurately aimed but against the wrong target kills or hurts civilians, we risk setting our strategy back months, if not years. Despite the fact that the Taliban kill and maim far more than we do, civilian casualty incidents such as those we've recently seen in Afghanistan will hurt us more in the long run than any tactical success we may achieve against the enemy. People expect more from us. They have every right to expect more from us.

Now, there's been much debate over how to balance traditional and irregular warfare capabilities in our military. As an underpinning, I see this principle applying to both. It chooses quality of people, training and systems over quantity of platforms. It means that we choose to go small in number before we go hollow in capability. And it favors innovation in leaders, in doctrine, in organisation and in technology. Precise and principled force applies whether we are attacking an entrenched enemy or securing the population. In either case, it protects the innocent. We protect the innocent. It's who we are. And in so doing, we better preserve both our freedom of action and our security interests. Preserving our security interests is also better ensured by what I consider my third and final principle. Policy and strategy should constantly struggle with one another. Some in the military no doubt would prefer political leadership that lays out a specific strategy and then gets out of the way, leaving the balance of the implementation to commanders in the field. But the experience of the last nine years tells us two things: a clear strategy for military operations is essential; and that strategy will have to change as those operations evolve. In other words, success in these types of wars is iterative; it is not decisive. There isn't going to be a single day when we stand up and say, that's it, it's over, we've won. We will win but we will do so only over time and only after near constant reassessment and adjustment. Quite frankly, it will feel a lot less like a knock-out punch and a lot more like recovering from a long illness. The worst possible world I can imagine is one in which military commanders are inventing or divining their strategies, their own remedies, in the absence of clear political guidance, sometimes after an initial goal or mission has been taken over by events. That's why we have and need political leadership constantly immersed in the week-to-week flow of the conflict, willing and able to adjust as necessary but always leaving military commanders enough leeway to do what is expected of them. Policy makers, after all, have other concerns beyond those of the military that must be adequately considered when taking a nation to war, including cost, domestic support, international reaction and so forth. At the same time, military leaders at all levels much be completely frank about the limits of what military power can achieve, with what risk and in what timeframe. We owe civilian leaders our candor in the decision making process and our unwavering support once the decision is made. That doesn't mean every bit of military advice will be followed. We shouldn't expect so. But it does mean the military concerns will be properly considered. And we can ask for nothing more.

In this most recent Afghanistan/Pakistan strategy review, the President devoted an extraordinary amount of time to getting it right, to understanding the nature of the fight we are in and the direction in which he wanted to take it. And then he laid it out clearly, simply, for the American people. And we are executing. In December he will review where we are and how we are doing, and I think we should all be prepared to adjust if events on the ground deem it necessary. The notion proffered by some that once set, a war policy cannot be changed, or that to do so implies some sort of weakness, strikes me not only as incompatible with our history but also as quite dangerous. Lincoln did not

emancipate the slaves when Fort Sumter was fired upon. He made that policy change when he deemed it most necessary. Though he favored a Germany-first policy, FDR [Franklin D Roosevelt] still struggled to properly balance the war's efforts against both Japan and Hitler's Germany. And Kennedy did not embark on the war in Vietnam with any sense that his successors would be fighting it at all, much less the way they did.

Contrary to popular imagination, war has never been a set-piece affair. The enemy adapts to your strategy and you adapt to his. And so you keep the interplay going between policy and strategy until you find the right combination at the right time. What worked well in Iraq will not necessarily work in Afghanistan. What worked well today will not necessarily work tomorrow. The day you stop adjusting is the day you lose. To quote one of war's greatest students, Winston Churchill, you can always count on Americans to do the right thing after they've tried everything else. Trying everything else is not weakness. It means we don't give up. It means we never stop learning, and in my view if we've learned nothing else from these two wars of ours, it is that a flexible, balanced approach to using military force is best. We must not look upon the use of military forces only as a last resort, but as potentially the best, first option when combined with other instruments of national and international power. We must not try to use force only in an overwhelming capacity, but in the proper capacity, and in a precise and principled manner. And we must not shrink from the tug of war, no pun intended, that inevitably plays out between policymaking and strategy execution. Such interplay is healthy for the republic and essential for ultimate success. For Churchill also noted that in war, as in life, and I quote, 'It is often necessary, when some cherished scheme has failed, to take up the best alternative, and if so, it is folly not to work with it with all your might'.

Ladies and gentlemen, your military is working for you with all its might. And we've not forgotten who started these wars, and we will not forget those who have perished as a result. We will stay at it for as long as it takes and we will succeed for as long as you support us in the endeavor. Thank you.

This address is reprinted with the kind permission of Admiral Mike Mullen, USN. The text is an abridged version of the full address with question and answer period available online at <www.jcs.mil/speech.aspx?id=1336> (21 March 2010).

Admiral Mike Mullen with Air Chief Marshal Angus Houston inspect Australia's Federation Guard at Blamey Square in Canberra (Defence)

Address to US Surface Navy Association's Annual Symposium, 12 January 2010

Admiral John Harvey, USN

Good afternoon. It's a privilege to be here with you today to address a community very near and dear to my heart. And to give you my thoughts on a subject of significant importance to all of us. When I spoke at the SNA [Surface Navy Association] West Coast symposium back in August of last year, I focused my remarks on our need to be able to rapidly adapt to emerging and constantly changing threats. I spoke of today's environment as one where we are faced with a thousand indirect threats that are always active to some degree, never over, and that, at any time, any one of them can erupt like a volcano in an extraordinarily violent spasm that will challenge us in very unpredictable ways. When I coupled that description of today's threat environment with our nation's economic crisis, I cautioned that we were all destined to spend the next few years in permanent whitewater. This term, permanent whitewater, is a pretty good metaphor for what I believe Mr Frank Hoffman was trying to tell us when he coined the term 'hybrid warfare'. Hoffman's definition was the blending, the convergence in time and space of 'the lethality of state conflict with the fanatical and protracted fervor of irregular warfare'. Given this chaotic, complex, and ever-changing strategic and operational environment that is ours for the foreseeable future – and if we wish to succeed in our endeavors to enhance our nation's security and not merely survive – it is very clear to me that our guiding principle for the future must be rapid adaptation, a finely honed ability to sense, see, understand, decide, and act – as individuals, as units, and as an organisation – at the speed of war. As we look deeper into the implications of hybrid warfare on our need to learn, adapt and act, I'd like to begin with a few examples from our history, and if you will bear with me, I promise these will actually have something to do with the topic I've been asked to address. And I'd like to go to our naval history for these examples for the challenges we face in the Navy today are not altogether new, just a little different from what we've faced before.

A key element of the Union strategy in the Civil War was blockading the Confederacy along their extended coastline while simultaneously advancing down the Mississippi River from the north. The Union's strategic goal was to split the Confederacy in two, gain control of the Mississippi from Memphis to New Orleans and deal a death-blow to the southern economy, while enabling follow-on campaigns into the heart of the deep south. There was one problem with this strategy: at the time the Union Navy was not manned, trained, and equipped to conduct riverine warfare – most of their ships were what we'd call today single-purpose, blue water cruisers – and their crews generally lacked the experience and skills to conduct combat operations in such confined waters. By doctrine at the time, the nation's inland waterways belonged to

the Corps of Engineers of the Army. To develop the necessary capabilities required to support General Grant's Mississippi campaign, Secretary of the Navy Gideon Welles ordered a resourceful navy officer, Commander John Rodgers (son of the 1812 war hero Commodore John Rodgers) to go out west to support the Army and get the Navy ready to fight and win in a very different and challenging environment, the Mississippi River and its tributaries. Secretary Welles also made clear to Commander Rodgers that the Navy had no desire to acquire river boats for naval purposes. Well, seeing the reality of the situation before him, Commander John Rodgers quickly determined an organised river flotilla would give General Grant a decisive strategic edge in the upcoming river campaign and he proceeded accordingly. Within months, he had constructed and organised a credible flotilla – known as the 'Mississippi River Squadron' – comprised of modified steamboats outfitted with guns and purpose-built ironclad ships. Six months later, under the command of Flag Officer Andrew Foote, the squadron scored its first major victory with General US Grant at the battles of Fort Henry and Fort Donelson and was later instrumental in enabling the great Union victory at Vicksburg.

Now, just think about all this for a moment: no institutional support, strict limits imposed by chain of command, and no crews experienced with operating combatant ships in a very different and challenging environment. Rodgers and his sailors had to take all this in, understand what it meant to the mission he'd been given, very rapidly develop what we would call today the DOTMLPF [Doctrine, Organisation, Training, Materiel, Leadership and Education, Personnel and Facilities] solution, and sell it to the Army. He had to act decisively, in real time. President Lincoln, convinced of the strategic importance of this campaign, transferred control of the Mississippi River Squadron to the Navy. The squadron would go on to have a profound impact on the war, with major victories at Memphis and, under Rear Admiral David Porter, at Vicksburg that, along with the conquest of New Orleans, enabled the Union to seize control of the Mississippi and put a stranglehold on the southern economy. President Lincoln would later write in recognition of the Navy's unique and valuable contribution to the Vicksburg campaign:

> Nor must Uncle Sam's web feet be forgotten. At all the watery margins they have been present. Not only on the deep sea, the broad bay, the rapid river, but also up the narrow muddy bayou, and wherever the ground was a little damp, they have been and make their tracks.

Our Navy prevailed in the western river campaign because they figured out how to use what they had in new and novel ways to achieve their objectives. Commander Rodgers rapidly adapted to the new environment and forged a very productive and enduring relationship with the Army, built upon trust and a true understanding of his commander's intent – the essence of joint operations in the littoral environment. In short, he rapidly recognised the changed character of war on the river, and adapted.

Now, let's fast forward to a very different time, World War II, a very different place, Guadalcanal, and a very different navy facing an extraordinarily complex warfighting challenge also in the littorals, this time the Solomon Islands chain in the South-West Pacific. It is D+1 on 8 August 1942, and the American forces have just landed on Guadalcanal and Tulagi. Task Force 62, the amphibious force led by Rear Admiral Richmond Kelly Turner, was responsible for offloading the Marines and their supplies and equipment from the Navy transports. Turner's screening force, commanded by Australian [sic] Rear Admiral Victor AC Crutchley and comprised of eight cruisers and eight destroyers, would secure the area around Savo Island to screen the landing area and protect the transports. Now Savo Island splits 'the slot', the body of water that separates the eastern and western Solomon Islands, into two lanes of approach to Guadalcanal and Tulagi. To cover the north/south lanes, and the eastern approach from Indispensible Strait, Crutchley divided his screening force into three elements: to the north, there were two destroyers and three heavy cruisers; two destroyers and two light cruisers covered an eastern approach; and to the south he positioned two escort destroyers and three heavy cruisers, including his own flagship, the HMAS *Australia* (II). In addition, Crutchley employed two radar pickets to the west as part of an early warning system.

On the Japanese side, Vice Admiral Gunichi Mikawa, commander of the Japanese 8th Fleet, had already assembled a strike force of seven cruisers and one destroyer to respond to the American landings. Mikawa's 8th fleet was based out of Rabaul, New Britain, 1100 miles to the northwest of Guadalcanal. His route would take him out of Rabaul, around Cape St George, through the Buka Strait, down the eastern coast of Bougainville, and into New Georgia Sound, 'the slot'. Mikawa was worried about the presence of American carriers. He knew the carriers had supported the previous landings, and suspected they were still there, but he had no confirmation of their positions. Being spotted by Allied planes would not only disrupt his mission, but would likely put his ships at great risk of being attacked with no Japanese air cover available to him. Fortunately for Mikawa, the actions of the American commanders were poorly coordinated. They were still new at this business and nothing in their training before the war prepared them for the reality of naval combat as practiced by the Japanese.

Vice Admiral Frank Fletcher, commander of the Allied expeditionary force, had lost 21 aircraft from his carriers during the initial landings and feared the consequences of another Japanese air raid. Low on fuel and with the threat of enemy torpedo and dive bombers on his mind, he decided to withdraw his carrier groups from the area and head for less confined waters. By the time Mikawa was en route to Guadalcanal, Fletcher, along with all US air cover, had departed the scene. When Turner learned of Fletcher's departure, he was understandably upset. During the landing, the Japanese aircraft had already struck the Allied landing force three times and Turner felt acutely vulnerable to further air raids. Left with no air support, Turner felt he had no choice

but to cut the offloading operation short. He continued to offload supplies through the night and would withdraw the remaining transports the next day, with fewer than half the supplies and equipment delivered to the Marines ashore.

Mikawa, meanwhile, did not go unnoticed by Turner. Reconnaissance from the previous day had reported the presence of elements of a Japanese force, but each report was either dismissed or never made its way to Turner. One report from a Royal Australian Air Force pilot described three cruisers, two gunboats, and two seaplane tenders. Another report from a B-17 described the force as four cruisers, one destroyer while another B-17 reported it as six unidentified ships. Given the relatively small size and spotty composition of the force, Turner dismissed the ships as a credible threat. Turner focused on the two seaplane tenders and assumed the Japanese were gathering their forces in the north for another air raid. Turner and Crutchley also thought it highly unlikely that the Japanese would risk a night attack with such a small force. Confident the assault area was secure from a surface threat, Turner relaxed his fatigued crews to condition two and would rely on the screening force to protect the transports while they continued to offload throughout the night. By the time of Turner's decision, night had fallen and Mikawa's strong cruiser force was already in the slot. Both radar pickets had failed to detect Mikawa as he coolly steamed past them toward Savo Island. With his ships arranged in column formation, and battle stations manned, at 0131 on 9 August, Mikawa gives the order 'every ship attack'. Mikawa's flagship, the [HIJMS] *Chokai*, launched its first torpedo. Within five minutes [HMAS] *Canberra* [(II)]was struck and the Battle of Savo Island was underway. The *Canberra* could barely react before she would be struck again by another torpedo. In the next five minutes she would be hit over twenty times and eventually sink the next morning.

During the attack on the southern group, Crutchley was away from his flagship. Turner had summoned Crutchley and Marine Major General Alexander Vandegrift to Turner's flagship to deliver the news of the next day's departure and discuss the overall situation. Crutchley, not wanting to risk a night transit back to his position in the southern group, had decided to keep his flagship in company with Turner's forces. He had left Captain Bode of the USS *Chicago* in charge as the task group commander of the screening force. Bode and the *Chicago* were not spared by Mikawa. After striking the *Canberra*, Mikawa's ships zeroed in on the *Chicago* with deadly accuracy. Preoccupied with fighting the damage to his ship, Captain Bode steamed out of the fight and failed to alert the other group commanders of the attack that was now underway, a fatal mistake. With the southern group in disarray and largely disabled, Mikawa turned his forces to deal with the northern group, positioned to the east of Savo Island. His ships fixed their sights on the [US Ships] *Vincennes*, *Astoria*, and *Quincy* and within minutes the unalerted ships were slammed with a barrage of torpedoes and gunfire. Like the southern group, these ships were overcome within minutes, and all three would be sunk. During the engagement on the southern group, Mikawa's force had become divided. Concerned about the length of time it would take to regroup, and

having expended all his torpedoes, Mikawa abandons his objective of destroying the Allied transports and at 0220 departs the area. By the end of the first battle of Savo Island, the Japanese would sink four Allied cruisers – the *Canberra*, *Vincennes*, *Astoria* and *Quincy*, seriously damage a number of destroyers, and kill over 1000 sailors. Conversely, five Japanese ships are slightly damaged with less than 100 killed. In less than one hour the Japanese inflicted the worst defeat at sea the US Navy has ever experienced. How did this happen?

Admiral Richmond Kelley Turner, in his post-battle report, wrote:

> The (US) Navy was still obsessed with a strong feeling of technical and mental superiority over the enemy. In spite of ample evidence of enemy capabilities, most of our officers and men despised the Japanese and felt themselves sure victors in all encounters under any circumstances. The net result of all this was a fatal lethargy of mind which induced a confidence without readiness, and a routine acceptance of outworn peacetime standards of conduct. I believe that this psychological factor, as a cause of our defeat, was even more important than the element of surprise.

The Mississippi River Squadron and the defeat at Savo Island – one, an example of the significant success that can be achieved through thoughtful innovation and adaptation, and the other – the significant failure that accompanies confidence without readiness, reduced standards, and most importantly, a fatal lethargy of the mind – a failure to adapt to the grim reality the enemy brings with him.

To refresh you on Mr Frank Hoffman's definition:

> We do not face a widening number of distinct challenges but their convergence into hybrid wars. These hybrid wars blend the lethality of state conflict with the fanatical and protracted fervor of irregular warfare.

Hybrid warfare conceptualises today's threat environment where nuclear terrorism is a real possibility, where a terrorist organisation like Hezbollah can effectively launch cruise missiles – a capability once thought the preserve of organised nation states – and simultaneously wreak havoc with IEDs [Improvised Explosive Device] and sophisticated cyber attacks. The fundamental nature of warfare has not changed, but the characteristics of hybrid wars can be very different – multiple forms of warfare converging in time and space – creating an environment where everything is in play, all at once, with varying degrees of intensity and violence. Hybrid warfare is really, at its heart, a strong reminder that our enemies will be thinking enemies. Whether we're talking about Mao Tse Tsung, Vo Nguyen Giap, or Osama bin Laden, the enemy doesn't think in terms of how to execute an irregular, conventional or hybrid war against us, he uses everything he has available to be as effective as possible at achieving his goals, with his actions limited only by his morals and creativity. A lot of energy has been

expended in defining and planning for irregular or hybrid warfare. Understandably, many people have tried to figure out what it means for our force structure – what we build and how many we build, what we modernise, and how we modernise. But, I believe that far more important than what we build is how we think.

Since the end of the Cold War, the tendency has been to expect the next conflict to be much like the last one, so we just extrapolate technology advances into the future and focus accordingly. But the future generally refuses to unfold the way we think it will. The fact that we are discussing hybrid warfare and asking what it means to us is a compelling example of this fact. We have to figure out how to best use what we have, to deal with the world as it is, as our adversaries do, instead of worrying about whether an *Arleigh Burke* destroyer is a conventional, irregular, or hybrid warfare platform. That's an empty discussion. An *Arleigh Burke* destroyer is what I have now and it's what I'm going to have for a very long time. And I thank God for that. The key for us is that it's an extraordinarily capable and adaptable platform that superbly supports an extraordinary array of missions. The same DDG [Guided Missile Destroyer] that can engage exo-atmospheric ballistic missiles can also, with the expert assistance of a few Navy SEAL snipers, take out Somali pirates. Also, in a larger sense, we have to be very careful about focusing so acutely on the term 'hybrid warfare'.

As the strategic theorist Colin Gray warns us:

> The problem is that the reasonable argument behind the recent discovery, epiphany perhaps, of hybridity, may obscure the even better argument for recognizing the oneness of war and warfare. We should be very careful about the adjectives with which we decorate the phenomena of war and warfare.

War is simply war, its fundamental nature - the realm of fear, honor, and interest; violence, uncertainty and chance – is eternal and unchanging. The character of warfare, though, is temporal and reflects the reality of today's technology, culture, religions, and politics. It is war's character that can change rapidly, hybridise, and we must be ready to change with it. The concept of hybrid warfare forces us to recognise that we now live in a world where terrorists are able to steal a video feed from a multi-million dollar UAV [unmanned aerial vehicle] using software you can buy on the internet for less than $30. So what must we do?

First, we must, repeat must, be ready to adapt to what we see, and do it in real time. When we've prepared to fight using a particular theory of conflict and then find ourselves in a conflict where our theories are out-of-date/irrelevant/inadequate (as at Savo Island), we adapt or die. In the Solomons, we eventually adapted, we got our heads into the fight at the same level as the Japanese, and, indeed, out-adapted them. By the end of the Solomon Islands campaign, our forces were far superior in executing night combat operations. We had developed superior radar which enabled superior

combat tactics. We learned the hard way about command and control in the littoral. We learned tactics and doctrine. We used our heads. And during the battle of Cape St George, the final engagement of the Solomons campaign, Captain Arleigh Burke engaged a Japanese flotilla of five destroyers with an equal force of five *Fletcher* class destroyers, [US Ships] the *Charles Ausburne*, *Claxton*, *Dyson*, *Converse* and *Spence*. He engaged the Japanese at night, sinking three of the five Japanese destroyers with no American casualties. Burke had trained hard and not only did he out-fight the Japanese at Cape St George, he out-thought them as well. Burke and the US Navy adapted in the Solomons just as Commander Rodgers and the Union Navy did on the Mississippi.

Second, we must transition away from an almost exclusive focus on learning as individuals and become, at our core, a learning organisation where current and future leaders can create, acquire, and transfer their knowledge throughout our Navy. Our Navy must learn, adapt, and grow; we must encourage innovation and unlock the latent potential of our people, our greatest and by far our most powerful resource, in order to overcome the vast array of challenges this era of hybrid warfare presents us.

Third, we cannot fall prey to what Admiral Turner called 'a routine acceptance of outworn peacetime standards'. We are at war. Al Qaeda declared war on us, and they see our ships, submarines, squadrons, units and sailors as targets. We can never forget this fundamental fact and must, repeat must, ensure we have the right mindset each and every day. Rear Admiral Austin M Knight, a past president of the Naval War College, said it best in 1915, 'The Navy is never prepared, but always preparing; and its personnel can never relax from its attitude of aiming always at something just a little better than what it has and is'. The challenge we face is not new, thirty years ago, during the height of the Cold War, who would have thought that the United States today would be heavily engaged in two major ground conflicts in Iraq and Afghanistan? But we invested in multi-mission, flexible platforms manned by adaptive, intelligent sailors that are proving very effective for missions we did not conceive at the time we were designing them. Our P-3's are providing critical ISR [Intelligence, Surveillance and Reconnaissance] support over land, our SSNs [Submarine - Nuclear Attack] and SSGNs [Submarine - Nuclear Guided Missile] are providing real time [ISR] to tactical commanders and conducting prompt strikes on inland targets. We built Aegis for the outer air battle only to realise we could look into space and provide ballistic missile defense and even shoot down a satellite. We are indeed in the era of hybrid warfare, the convergence in time and space of multiple types of conflict. To be successful in this new era, we must be flexible and be able to rapidly adapt to meet emergent threats while still maintaining our core competencies of sea control and power projection – some things are not going to change – the oceans cover 72 per cent of the earth's surface and the vast majority of the world's population live within 200 miles [~ 320 km] of the coastline. We will forever be a maritime nation, the importance of our sea lanes of communication for the lifeblood of our economy will never diminish, and the security of the great global

maritime commons will forever be the foundation for our nation's security. In the final analysis, hybrid warfare is not so much about warfare as it is about you – your ability to think, your ability to adapt, and your ability to prevail, doing whatever it takes – now, as your predecessors have always done and as we will always do.

This address is reprinted with the kind permission of Admiral John Harvey, USN. The text is an abridged version of the full address available online at <militarytimes.com/blogs/ scoopdeck/2010/01/13/harveys-warning/#more-3365> (21 March 2010).

PART II:
NAVY VALUES

HMAS Darwin *sailors heave in on the refuelling line
as the ship gets ready to connect with HMAS* Success *(II)* (Defence)

Honour

Lieutenant Commander Richard Adams, RAN

> Honour is the fundamental value on which the Navy's and each person's reputation depends.
>
> *Navy Values: Serving Australia with Pride*[1]

In 1922 a Royal Australian Navy lecture for junior officers and petty officers described honour as being 'based on our own self-respect and esteem … [it] comes to us through our conscience'.[2] Such a notion is fundamental to military service. To serve in the armed forces was, according to the 19th century strategist Carl von Clausewitz, 'a special calling [which] if it is to be followed with success requires peculiar qualifications of understanding and soul'.[3] Writing in 1832, Clausewitz described the concept of the 'noble' spirit of martial honour, an idea which still endures today. He understood that in the greatest warriors there existed a sense of something decent and aspirational; a staunchness of will and moral purpose formed from a fusion of individual character and professional insight. Framed by unique service traditions, and bound by shared understanding, such a sense of honour conveys what is worthy or creditable in our lives. So too, the early Australian Navy held that its members 'are honour bound to do a certain thing'.

In a more recent publication, *Navy Values: Serving Australia with Pride*, today's Royal Australian Navy (RAN) defines honour as a 'fundamental value' where we are required to give 'our all to complete our mission professionally'.[4] To maintain this type of behaviour requires a disciplined professional attitude, one which involves far more than just technical expertise. Above all, it entails a determination to live according to a very high set of values. Honour is thus a complex idea, which embraces notions of professional judgement and personal merit in addition to our collective sense of right and wrong.

Honour must rely on more than mere skill in the technical art of war because military force can, and has been, employed for criminal or dishonourable ends. Hence a sense of honour should build on the foundation of a service ideal, something fearless and confident. Yet, we must still be careful to understand the wider moral context. To focus narrowly on notions of duty and glory, is to describe that 'suspect professional virtue' which Clausewitz dismissed as little more than 'a soul-stirring hurrah'.[5] Honour, he argued, rises above the 'outburst' of effervescent courage, because fighting for its own sake, no matter how valiant, will entail nothing but shame, 'a feeling of inward humiliation'.[6] Clausewitz neither trivialised war nor underestimated physical courage, but he well understood the dangers of strength without honour.

The RAN's understanding of honour is likewise quite different from the form of militarism which praises unrestrained fighting and heedless physical courage. Significantly, *Navy Values: Serving Australia with Pride* suggests an awareness of professional martial virtues which, being internal to the armed services, differs from the relatively undemanding requirements of civilian society. As Mark Osiel notes in his book *Obeying Orders*:

> The individual is free to choose, of course, whether or not to seek membership of his county's [armed services]. But he is not free to decide what it means to be a professional [serviceman], much less an excellent one. The meaning of meritorious [service] is determined by the practices and traditions of the professional community.[7]

Australian naval tradition recognises a professional community, which is defined less by national borders and more by a fraternal 'fellowship of the sea' and shared sense of honour. During the first months of World War I the German raider SMS *Emden* created havoc on Allied shipping lanes; her crew under Captain Karl von Müller nevertheless earned a reputation for honourable conduct. Recalling his capture after the epic battle with HMAS *Sydney* (I) on 9 November 1914, Oberleutnant Franz Joseph, Prince of Hohenzollern, made the point:

> [We received] an order from the War office by which the King of England returned to us officers and subordinate officers our swords. This was in so far meaningless, as we had no swords with us, but doubtless the order was intended as an honour for the *Emden*, and as such it greatly pleased us.

Given the rare opportunity to associate closely for a few days after their battle, officers in *Sydney* and *Emden* came to the joint conclusion that 'it was our job to knock one another out, but there was no malice in it'.[8] Later, transferred as prisoners to HMS *Hampshire,* Franz Joseph added:

> We were received by Captain Grant, the captain of the cruiser, with great cordiality. It was noticeable at once that we were among members of our own profession. Wireless messages were coming in daily about the war, which contained fascinating news for us. Thanks to the kindness and chivalry of Captain Grant, we were given the messages to read.

The contrast between the conduct of the combatants during our first at sea triumph and the situation we face today is stark. 'Pitted against adversaries who fight without any rules or restraints [who] employ methods that are rightfully viewed as horrific and appalling by the rest of the civilised world', we are shocked by a type of conflict we immediately reject as ruthless and uncivilised. Understandably there are those who wish to respond to terrorism in kind, yet it would be dishonourable, 'a violation of our own values for us to engage in a war with no rules', with a sense neither of honour nor shame.[9]

The care lavished on SMS Emden*'s wounded by HMAS* Sydney*'s (I) men received great praise from German survivors* (RAN)

During the last year of World War II (WWII), concepts of honourable conduct were undoubtedly being stretched for RAN sailors, particularly as the increasingly desperate Japanese resorted to mass suicide tactics. At Lingayen Gulf *kamikaze* operations inflicted many casualties on HMA Ships *Australia* (II) and *Arunta* (I). The heavy cruiser HMAS *Shropshire* was also present, but despite similar attention managed to avoid being hit. Nevertheless, the provocation to hit back at a ruthless enemy remained extreme. On 6 January 1945 the third *kamikaze* of the afternoon disintegrated under the fire of one of *Shropshire*'s 8-barrelled pompoms. The pilot was blasted from the wreckage and at about 500 feet appeared briefly to hang beneath his parachute, 'a Jap very much alive, arms and legs spread wide, for all the world like a four-pointed star'.[10] There were some cries of 'shoot the bastard' to the pompom captain, but he ignored them and continued to hold fire until the decision was taken from his hands. A cult of death was indoctrinated into all Japanese warriors, and before reaching the sea the pilot slipped from his chute and disappeared below the surface.[11]

Lieutenant Hugh Syme, GC, GM*, RANVR in London (AWM 141700)

War without honour is simply brutalism, but the Australian sense of honour is bequeathed by our heroes, not unthinking fanatics. A case in point is Lieutenant Hugh Randall Syme, Royal Australian Navy Volunteer Reserve (RANVR), one of the most highly decorated Australian naval officers of WWII. Syme won the George Cross and George Medal twice, not for brief moments of heartless killing, but for sustained gallantry in the delicate and unforgiving business of mine disposal. Recalling this officer, and other RAN members similarly awarded for intrepidness, George Hermon Gill records that in every instance 'the citation tells of ''gallant and undaunted devotion to duty'' … ''courage, initiative and devotion to duty'' … ''skill and undaunted devotion to duty''. There could be no higher commendation'.[12]

Such recollection of the past is both meaningful and evocative, and underlines our inherited appreciation of the idea of honour. The sense is that we may learn 'how to act among our contemporaries by studying the actions of those who have preceded us. [Our forebears] give stability and coherence to our moral lives – and to our military lives. Notions about right and wrong are remarkably persistent'.[13] In other words, to recognise honour now, we need to be acquainted with the traditions of honour that have been passed down to us by the naval men and women of the past.

It is important to remember that honour is multi-dimensional. It is based not on a definitive quality, but upon a 'constellation of independent and non-specific virtues, which have particular relevance in the context of military service. Moral virtue is intermingled with physical prowess, in a construct of martial honour which demands considerable sustained effort, and which encourages pride in practised talent and professional judgement.[14] Honour, therefore, connects morally to unique situations in a way that explicit rules can never approach. Honour informs integrity, shaping conscience and influencing notions of pride, self-respect and shame. Thus, honour can often operate as a more authoritative concept than notions of legality, identifying 'the proper course' when rules, regulations or laws offer uncertain guidance. Clausewitz, for example, described 'military virtue' as transcending the 'vanity of an army held together merely by the glue of service-regulations and a drill book'.

Such a sense of honour is not capable of precise definition, yet it is a powerful term which enables us to understand something of the moral meaning of naval life. Australia aspires to be a nation that stands proud and respected among the free people of the world, and with its global reach the RAN will remain one of the key tools in achieving this aim. We will continue to face many challenges, but these will not only include direct assaults on our sovereignty. Threats to our collective ideals and the principles which underpin our Australian way of life may be equally prevalent. Honour is therefore very much more than a redundant ideal, out of place amid the indiscriminate violence of the modern world. Our nation and our Service both expect us to maintain what has been achieved and by our deliberate efforts and career example give no cause for our friends and allies (and even our opponents) to have anything but the highest regard for RAN personnel.

Notes

1   Royal Australian Navy, *Navy Values: Serving Australia with Pride*, Canberra, September 2009.

2   Royal Australian Navy, *Lectures Suitable for Junior Officers and Petty Officers*, vol. 1, lecture 13, 1922, p. 4, held in Sea Power Centre - Australia archive.

3   C von Clausewitz, *On War*, Penguin, London, 1982 reprint, pp. 138, 146, & 155.

4   Royal Australian Navy, *Navy Values*.

5   MJ Osiel, *Obeying Orders: Atrocity, Military Discipline and the Law of War*, Transaction, New Brunswick, 1999, p. 14.

6   Clausewitz, *On War*, p. 149.

7   Osiel, *Obeying Orders*, p. 17.

8   AW Jose, *The Royal Australian Navy*, Australian War Memorial, Melbourne, 1928, p. 567.

9   S French, *The Code of the Warrior*, Rowman & Littlefield, Lanham, 2003, pp. 233-4.

10   TM Jones and IL Idriess, *The Silent Service: Action Stories of the Anzac Navy*, Angus & Robertson, Sydney, 1945, p. 364.

11   S Nicholls, 'HMAS *Shropshire*', < www.hmasshropshire.com/contents.htm> (29 April 2010).

12   GH Gill, *Royal Australian Navy 1942-1945*, Australian War Memorial, Melbourne, 1985, p. 715.

13   M Walzer, *Just and Unjust Wars: A Moral Argument*, Basic Books, New York, 2000, p. 16 (syntax altered).

14   Osiel, *Obeying Orders*, pp. 18, 19 & 33.

Honesty

Mr John Perryman

> Honesty is always being true to ourselves, our shipmates and
> our colleagues.

Navy Values: Serving Australia with Pride [1]

Honesty is arguably one of the most important threads making up the tapestry of values to which the Royal Australian Navy (RAN) adheres, for it is honesty which firmly anchors the Navy's set values in place. But what is honesty? Why is it so important? It has been written that true honesty is free of contradictions or inconsistencies in our thoughts, words or actions.[2] Being honest to ourselves and our ship-mates, earns trust, and the pivotal relationship between honesty and trust is perhaps the most important ingredient to be found in any well functioning warship. Throughout the RAN's history, certain ships, big and small, have stood out from others for their efficiency and fighting spirit. While most have been painted grey, carried weapons and been presided over by a commanding officer who has followed long established rules and regulations, some vessels have attained reputations that have far exceeded that which is normally expected. This hallmark of spirit and efficiency is, without exception, a direct reflection of the vital human element that gives life to any warship.

There is no closely guarded secret concerning how this spirit is achieved. As with any team, a ship has a leader, and much depends on the personal qualities of that leader in shaping the course that his or her crew will follow. If a captain is perceived to be honest then it will take little time for them to establish a trustworthy reputation among those whom they command. If, however, a leader is perceived as dishonest, then it follows that the vital spark of trust will never be ignited.

Ships, however, are somewhat unique in that they are a close-knit, multi-layered community. Although they have an ultimate leader in their captain, they also have numerous other officers and sailors in positions of trust and responsibility. These men and women must therefore establish their own individual credentials of honesty and trust among those whom they daily command and lead. It is when this recipe is harmonised at all levels that a ship ascends to a level of superior efficiency.

Trust flows both ways and so must also be earned by subordinates, irrespective of whether they comprise a ship's wardroom or a mess deck. When a subordinate proves to be honest and trustworthy they gain the respect and confidence of those who lead them and perhaps more importantly among those who serve alongside them.

The close quarters within which a ship's company lives, works and fights have always demanded a high degree of honesty. However, as with any microcosm of society, a ship's company will occasionally experience dishonesty within its ranks and when this occurs, the destructive effect on the ship as a whole cannot be overstated. Divisiveness is often the first symptom when this happens, followed by mistrust and all of the unpleasant characteristics that come with it. The ill feeling generated by this mistrust can spread rapidly throughout a ship and undo years of hard work and team building.

Honesty and pride in oneself, as a well-trained professional, is the hallmark of any effective member of a ship's company (RAN)

Knowing that one can depend on his or her shipmates in all situations is the life blood of a cohesive ship's company. This trust begins in the mess deck or cabin with simple things such as knowing that one's possessions will be respected by those sharing the compartment. Other gestures, such as being punctually relieved by a shipmate at the end of a watch or duty, build on this trust and dependence and inspire confidence within everyone in the crew.

Pride in, and being honest with, oneself is perhaps the most critical part of being an effective member of a ship's company. For if an officer or sailor takes pride in themselves and in their performance of duty, they will soon gain both the respect and trust of their shipmates. Such honesty, however, can at times be the most confronting challenge of all. Sometimes this form of honesty will reveal flaws in one's character or level of competence which can lead to self doubt, lack of confidence and poor performance. Mastering this realisation and taking action to address these inadequacies is the mark of a person who will always emerge as a better individual and team player.

Often it takes courage to be honest, particularly in a Service environment where rank can often be intimidating to junior personnel. No subordinate ever enjoys advising their superior officer of bad tidings, and when these situations arise it can challenge the honesty of all involved. Juniors must feel confident that they can apprise their seniors of both good and bad news without fear of unjust rebuke. The temptation otherwise is to water down the gravity of a situation or avoid bringing it to the attention of a superior altogether. Neither of these outcomes is desirable and superiors should always be prepared to honestly evaluate a situation to avoid reacting in an injudicious manner. By doing so, they will do much to preserve the level of trust and respect between themselves and their subordinates.

One of the most famous examples of trust, honesty and mutual respect to be found in naval annals took place on board the Royal Navy's flagship HMS *Victory* immediately prior to the Battle of Trafalgar on 21 October 1805. Joining his signal lieutenant, John Pasco, on deck, Admiral Horatio Nelson ordered him to make a signal. 'I wish to say … ''England confides that every man will do his duty'''. Nelson added, 'You must be quick for I have one more to make, which is for close action'. Due to the urgency, Pasco suggested replacing the word 'confides' with 'expects', as this was a single flag in the code book and did not need to be spelt out. Nelson replied 'That will do, make it directly'.[3] The inspirational signal was subsequently made and became inextricably linked with the decisive victory won by Nelson that day. What should not be overlooked, however, is the honest exchange that took place between the famous admiral and his subordinate.

In stark contrast to this honest exchange of advice before Trafalgar is the avoidable loss of HMS *Victoria* in a collision with HMS *Camperdown* on 22 June 1893. Three hundred and fifty eight officers and men died including the Commander in Chief, Vice Admiral Sir George Tryon. Although both Tryon's staff commander and flag lieutenant were aware of the probable outcome, they allowed him to order two columns of ships to perform an

*Admiral Nelson confers with Lieutenant Pascoe prior
to the Battle of Trafalgar, 21 October 1805* (RAN)

impossible manoeuvre. At the head of the port column *Camperdown*'s captain hesitated to comply and received a peremptory 'What are you waiting for?', only adding to his confusion. Tryon was a popular commander, but apparently not a person agreeable to being asked questions or being cross examined by his subordinates.[4]

The complexity of modern warships is such that specialist skills are required to conduct most evolutions in a safe and efficient manner. In many situations the practitioners who are best qualified to provide expert advice will be sailors or specialist junior officers. Irrespective of the source, it is inherent on those receiving advice to consider it before determining how they wish to proceed. As with any occupation, there will be times when a senior may err and embark on the wrong course of action. Again this can be a test of character for those involved, as it is the duty of the specialist, regardless of rank, to interject with honest and accurate advice in a courteous and expedient way. It is equally the duty of the senior to consider and acknowledge this advice before continuing.

It is inevitable that some leaders will be faced with situations that fall outside the parameters of established rules or procedures. On occasion it may be necessary to override the advice being proffered by a specialist, but this in no way lessens the responsibility to provide such advice or honestly, evaluate it and acknowledge that it has been received.

There are other examples throughout the Australian Defence Force where the pillars of honesty and trust are fundamental to the success of conducting day to day business. As members of a multi-billion dollar organisation, responsible for our nation's security, Service men and women and their civilian counterparts are entrusted with ensuring that Defence business is conducted in an honest and ethical manner. Similarly, the relationship between honesty and loyalty, another Navy value, is fundamental in any dealings with classified material.

The role of the RAN will always be varied in nature and the current high level of operational tempo is likely to be maintained for some time. The success of future missions will continue to depend upon the ethics and values of the men and women who serve in the Australian Navy and who have carried the trust and confidence of the Australian public since the Navy's inception on 1 March 1901. The capstone of honesty is perhaps best summed up by Albert Einstein, possessor of one of the most brilliant minds of the 20th century, when he said, 'Whoever is careless with the truth in small matters cannot be trusted in important affairs'.[5]

Notes

1   Royal Australian Navy, *Navy Values: Serving Australia with Pride*, Canberra, September 2009.

2   Living Values, <www.livingvalues.net/values/honesty.htm> (9 September 2008).

3   T Pocock, *Horatio Nelson*, Alfred A Knopf, New York, 1987.

4   A Gordon, *Rules of the Game*, Naval Institute Press, Annapolis, 1996, pp. 246-7.

5   Quoted in Gerald Holton and Yehuda Elkana (eds), *Albert Einstein: Historicals and Cultural Perspectives*, Princeton University Press, Princeton, New Jersey, 1982, p. 388.

Courage

Mr Petar Djokovic

> Courage is the strength of character to do what is right in the face of adversity.
>
> *Navy Values: Serving Australia with Pride*[1]

Service at sea is inherently dangerous and demanding. Unsurprisingly, the Royal Australian Navy (RAN) expects its members to display courage at all times. But what exactly does this mean? The motto of the RAN Fleet Air Arm's 850 Squadron, *Vincit Omnia Virtus* – 'Courage Conquers All', clearly offers an all-inclusive if somewhat idealised view.[2] Yet the concept of courage can be somewhat ambiguous and may mean many different things to different people. The traditional view of military courage, a singular act of bravery in the face of near impossible odds, is only part of the story. Courage is not just about physical bravery, and it can manifest in ways which are not always obvious. For instance, it often requires courage to stand up for our own beliefs and morals, to take responsibility for our own decisions, and to recognise the weaknesses in our own habits and attitudes. Whether physically or mentally, courage is about taking charge and operating in difficult or dangerous situations.

Courage is also not about the absence of fear; it is about recognising that the job to be done is more important than fear. There can be little doubt that the first Australians to see action in World War I (WWI) would have been frightened. Few had experienced physical combat before. Every man engaged, nevertheless displayed 'coolness and level-headedness'.[3] Largely made up of inadequately trained naval reservists, a detachment from the Australian Naval and Military Expeditionary Force was sent ashore in German New Guinea on 11 September 1914 to destroy the wireless station at Bita Paka. They soon encountered stiff resistance from some 500 German and native troops who had prepared a series of well positioned defences along the main road.

The Australians suffered casualties, but bold action and bluff saw them win. One officer, Lieutenant Thomas Bond, RANR, executed a manoeuvre remarkable for its sheer audacity. Having moved ahead of the main force, with just two other Australians and a German prisoner in company, Bond came across a police barracks manned by 8 German and 20 native troops. Bond immediately ordered the enemy to surrender. This they refused, but while the Germans threatened continued resistance, Bond, careful to keep them positioned between himself and the New Guineans, simply walked up to the Germans and plucked their pistols from their holsters one-by-one. The Germans were too surprised to react and, left with no choice, the whole body then surrendered. By maintaining his nerve, Bond's action was both successful and had saved needless bloodshed. For his courage, he received the Distinguished Service Order, the first bravery award for an Australian in WWI.

Many Navy people risked their lives battling flames at HMAS Albatross
on 5 December 1976 (RAN)

In wartime operations around the globe Australian sailors have performed many equally courageous deeds, but some deserve to stand out; none more so than the actions of Seaman Edward 'Teddy' Sheean on 1 December 1942. Attacked by more than a dozen Japanese aircraft, Sheean's ship, the corvette HMAS *Armidale* (I), fought back desperately until two torpedoes and a bomb hit sealed her fate. Many survivors leapt into the sea when the order to abandon ship was passed, only to find themselves the targets of Japanese strafing. Sheean, badly wounded in the chest and back, helped to free one of *Armidale*'s boats before returning to his 20-mm gun and continuing to engage the enemy. He shot down a bomber and held off several others, thereby protecting his shipmates already in the water. Even as *Armidale* slipped below the waves Sheean was still firing. His courage is commemorated in the naming of the submarine HMAS *Sheean*, the only Australian junior sailor to be so honoured.

Sheean's decision to return and then remain at his post stands as an example of selfless courage in the face of death, but consideration for the welfare of others has often required courageous actions by naval men and women. On 19 June 1951 while conducting bomb disposal in the Solomon Islands, Able Seaman Vic Turner was standing near a stack of ammunition with six local labourers, when part of the stack exploded. Dazed and suffering numerous shrapnel wounds, Turner managed to assist a wounded Islander to safety and then returned in an attempt to save another before the entire stack burst into flame. Turner received the British Empire Medal. More recently, Lieutenant Commander

Peter Nelson, RAN, received the British Air Force Cross for gallantry while on loan to the Royal Navy during the 1991 Gulf War. In fierce wind and rain, Nelson flew his Sea King as low as 50 metres above the desert into the midst of a tank battle to recover two casualties from a forward dressing station.

In a naval context, courage displayed by a team can often mean more to group success than that shown by an individual. This clearly will have most application when considering unit cohesion at sea, but it is certainly not unknown ashore.[4] Around midnight on 4 December 1976, flames engulfed 'H' hangar at HMAS *Albatross*, which contained almost all the RAN's fleet of Grumman Trackers. Some 100 naval personnel and local Nowra fire fighters risked their lives battling the flames while trying to drag aircraft from the building. The Trackers' fuel tanks were fully loaded with aviation fuel, and despite the inherent danger, personnel ran into the building and climbed into the cockpits of aircraft to release the brakes and tow them clear. In most cases the planes were already ablaze, yet some rescuers used their own cars as towing vehicles. In all, five of the aircraft in the hangar were moved clear, but unfortunately just two were fit to be repaired and returned to service. The courageous actions of those involved nevertheless drew high praise from the then Minister for Defence, Jim Killen, who said after visiting the site: 'If any people in this country think guts has gone from the Services, I invite them to reflect on what happened in the early hours of this morning'.[5]

Courage also requires taking charge in difficult and dangerous situations. Commander Stanley Spurgeon, RAN, coincidentally the first Australian to be decorated in World War II, was a passenger in SS *Britannia* when the ship was sunk by the German merchant raider *Thor* in the mid-Atlantic in March 1941. More than half of those on board the merchant vessel perished in the action and aftermath. While abandoning ship, Spurgeon came across a naval nurse visibly distressed and fearful that she could not manage the descent into the already crowded life raft below. He immediately lifted her down the 10 metre rope ladder, injuring his foot and rupturing a shoulder tendon in the process. Spurgeon was now in great pain, but found himself the senior officer of a 25-foot open lifeboat, holed in several places, equipped with negligible food and water, and crammed with 67 other men and women. He immediately established a system of rationing and a suitable routine to maintain morale. Largely due to Spurgeon's leadership none of his charges died, and after six days adrift a Spanish steamer picked up the boat. Spurgeon was interned for four months, but later received a commendation for his 'courage and fortitude'.

These are all outstanding acts of courage but they involve situations which many will never have to face. How do these acts relate contemporarily? Men and women who serve in the RAN are expected to do the right thing no matter how hard it is. They reject improper behaviour, including bullying, harassment, lewdness, drunkenness, fraud and crime.

The Ancient Greek philosopher Aristotle once noted that a courageous act does not necessarily make one courageous. Rather, a courageous nature is reflected in how we carry ourselves and react to difficult or distressing circumstances in the context of our everyday lives. This aspect of courage is reflected in our habits: 'we become just by doing just acts, temperate by doing temperate acts, brave by doing brave acts'.[6] Courage is a self-strengthening cycle; we must have the courage to do courageous things and we will then, in turn, become more courageous.
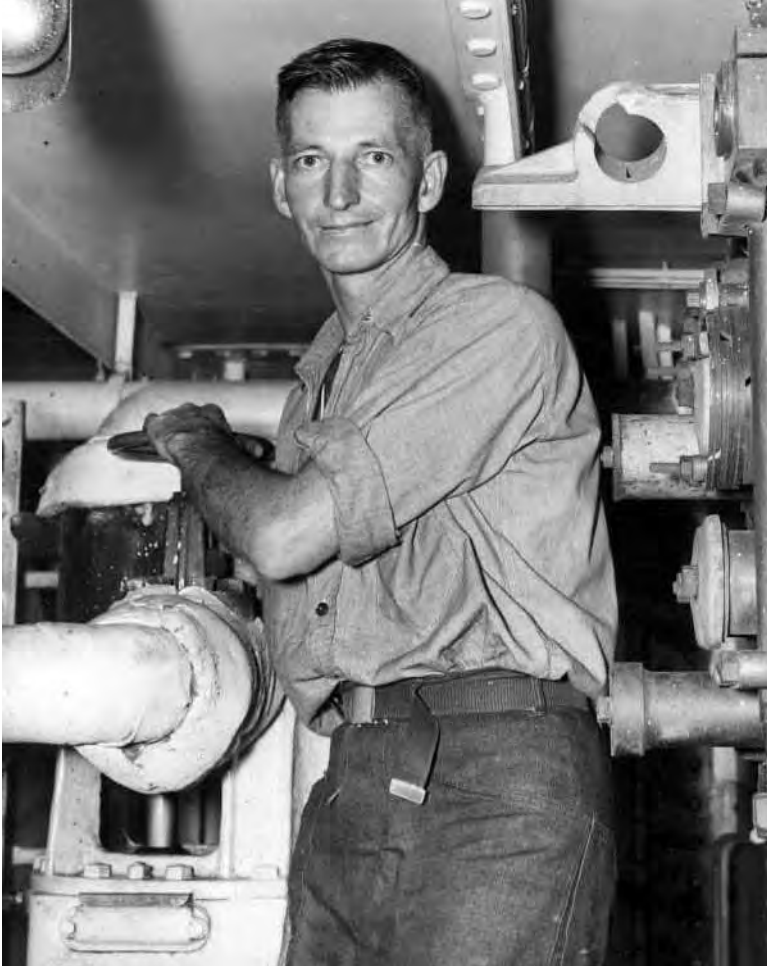
Chief Stoker Alfred Wrench on board HMAS Gascoyne *(I)*
(State Library of Victoria H98.100/3287)

Chief Stoker Alfred Wrench provides an excellent example of courage becoming almost routine. Wrench joined the RAN in 1926, and was serving in the destroyer HMAS *Waterhen* (I) at the outbreak of World War II. While operating in the Mediterranean he transferred to HMAS *Vampire* (I) and subsequently participated in the Greece and Crete evacuations, the Malta convoys and the 'Tobruk Ferry'. Already a model senior sailor, he was mentioned-in-despatches for 'outstanding zeal, patience, and cheerfulness and for setting an example of whole-hearted devotion to duty'.[7] Wrench was again mentioned-in-despatches after Japanese aircraft sank *Vampire* off the coast of Ceylon (Sri Lanka) on 9 April 1942. During the action Wrench was senior hand of the starboard pompom, which had a stokers' gun crew. His citation remarked that he 'showed coolness and courage throughout the action and kept his gun firing until the crew was finally washed from the platform'.[8]

Wrench subsequently spent time in *Armidale,* but had moved to the frigate HMAS *Gascoyne* (I), before the corvette was lost. During the Leyte Gulf operations *Gascoyne* supported the US Navy's 7th Amphibious Force. On Christmas Eve 1944, the transport MV *Sommelsdijk* was hit by Japanese fire and set ablaze. While efforts to rescue the 1300 US troops aboard the stricken vessel continued, volunteers from *Gascoyne* and USS *Buttonwood* set about fighting the flames. Wrench spent the entire night dealing with fires in the holds and supervising the efforts of others. For his 'gallantry, devotion to duty and good leadership', he received the British Empire Medal.[9]

Wrench was a courageous man, not because of a singular act of outstanding courage, but because of the courage he displayed throughout his career. The wording of his award while in the Mediterranean is significant. He displayed a courageous nature in how he presented himself, in how he dealt with others, and in how he performed his duties and accepted his responsibilities at all times. He set high standards, was reliable in the face of adversity and drew upon his training and experience to act swiftly and effectively. Our own courage likewise safeguards the success of our operations and the lives of our shipmates.

Notes

1   Royal Australian Navy, *Navy Values: Serving Australia with Pride*, Canberra, September 2009.

2   No. 850 Squadron was decommissioned in 1958.

3   AW Jose, *The Royal Australian Navy*, Australian War Memorial, Melbourne, 1928, p. 91.

4   For example, see D Stevens, 'HMAS *Quiberon*, 1942 - Teamwork in Action', in A Forbes (ed), *Australian Maritime Issues 2007: SPC-A Annual*, Papers in Australian Maritime Affairs No. 21, Sea Power Centre - Australia, Canberra, 2008, pp. 197-201.

5   Royal Australian Navy, *Navy News*, vol. 19, no. 24, 10 December 1976.

6   Aristotle, *Nichomacean Ethics*, Book 2, Chapters 1 & 2.

7   Commonwealth Navy Orders, No. 146 of 1942, 2 June 1942.

8   J Atkinson, *By Skill and Valour*, Spink & Son, Sydney, 1986.

9   *Supplement to the London Gazette*, No. 3328, 26 June 1945.

Integrity

Lieutenant Commander Richard Adams, RAN

> Integrity is being committed to always doing what is right, no matter what the consequences.
>
> *Navy Values: Serving Australia with Pride*[1]

The Royal Australian Navy (RAN) demands strength of character from its members because the business of war is fundamentally about right and wrong. When discussing armed conflict, language is laced with moral meaning. Words like faithfulness, devotion, betrayal, atrocity, honour and shame, impose value judgements and expose the centuries of moral argument, which have been an intrinsic accompaniment to war.[2] Accordingly, military service is defined by firm expectations of personal integrity. British Admiral Sir Herbert Richmond, spoke of the need for 'true heartedness' among those who serve at sea.[3] Resonant with the sense of integrity, this expression points to the truth that unless the Navy is distinguished by fair and principled men and women, the RAN's ships amount to nothing. Our integrity defines a moral purpose to which others look for inspiration, and leadership. Our integrity defines the moral power of our Service and ultimately of our nation.

Integrity is not complicated – if it's not right, then don't do it; if it's not true, don't say it – but it is unforgiving. Far more than sheer pretence, integrity is hard and uncompromising; a concept of pitiless perfection at the heart of the stoic ideal. The Stoics, an ancient Greek school which sought virtue as the greatest good, coined the phrase *vivere militare* – life is being a soldier. Taking this point in his 1993 essay 'Courage under fire', Vice Admiral James Stockdale, USN, repeated the words of the Stoic philosopher Epictetus, (circa 50-135 CE); 'if you neglect your [moral] responsibilities, when some severe order is placed upon you, to what pitiful state do you bring the army?'[4]

Stockdale had been shot down in an A4 Skyhawk over North Vietnam in September 1965, and then spent seven and a half years as a prisoner of war; enduring torture, long periods of solitary confinement and leg irons. Recalling his captivity he explained that 'good and evil are not just abstractions you kick around and give lectures about … The only good and evil that means anything is right in your own heart, within your will and within your power'.[5] Stockdale affords an astoundingly real perspective on what integrity entails. There is nothing worse than the destruction of our self respect. We can endure pain, we can endure public degradation and humiliation, but we cannot live with shame – the private knowledge that we have compromised our standards. Our integrity embodies who we are and how we act; total responsibility and accountability for every emotion, every judgement, and every decision. Thus, writes Stockdale: 'It is within you that your destruction and deliverance lie'.[6]

Integrity, which can in consequence be seen to articulate the real meaning of 'leadership by example,' is explained by another famous US Navy admiral, Arleigh Burke, as 'an unimpaired adherence to a code of moral values'.[7] A recent RAN handbook underlines the same point:

> Leadership … is a trust sustained by the personal example of the leader. For subordinates to be committed to the goals and values of the Service, the leader must be a living example of those same goals and values. When once the leader sermonises, 'do as I say, and not as I do,' trust starts to deteriorate and along with trust is lost morale and military effectiveness.[8]

A person of integrity can be counted upon to give precedence to moral considerations, indifferent to personal desire or inducement to self-interest, even where such a betrayal of moral principle might pass undetected. This was the sense of integrity understood by Admiral Burke to be at the very heart of the profession of arms:

> A military professional is someone who holds to the highest standards and serves the country with unquestioning loyalty; the professional is not motivated by personal gain … a careerist [on the other hand] is someone who serves the country in the best way fit to further his own career.

Rear Admiral John Dumaresq (1873-1922) (RAN)

The Fleet Commander after World War I, Rear Admiral John Dumaresq, RN, affords just such an example of professional integrity. A man of exceptional ability and imagination, in 1904 he invented a mechanism that calculated predicted changes in range and deflection that improved the accuracy of heavy naval guns. Although readily adopted by the Royal Navy, and becoming a key gunnery instrument, Dumaresq's device attracted no personal reward other than a small one-off payment from the Admiralty. In 1906, however, the instrument's manufacturer wrote to him, admitting that 'you have helped us to make some money and even though one is a contractor some shreds of conscience remain …'[9] The firm had enclosed the gift of a barometer, hoping that it 'may always send fair and prosperous weather'. Insulted, Dumaresq returned the box unopened and demanded an apology from its sender. The high personal standards he set would allow nothing which might be misconstrued as corrupt, and thus bring discredit upon himself or his Service. Fundamental to Service ideals, virtue of this sort becomes its own reward.

Dumaresq's sense of integrity regularly brought him into conflict with Australian politicians, not least when he sought to protect the RAN's interests in the face of apathy and interference. Not wishing to be 'crowned with a halo of popularity', he instead chose to speak plainly and publicly. During one press conference he expressed his fears that resource cutbacks threatened the Navy's soul, morale and spirit. Asked who was responsible, the Government or the people?, Dumaresq's response was emphatic, 'I blame them both. People get the Government they deserve'. On another occasion, Dumaresq submitted his resignation after political pressure saw the early release of five sailors found guilty of mutiny. He did not so much object to the release, as to the impression certain politicians fed to the media that the original sentences were unduly severe and that Australians were not amenable to naval discipline. Believing that both efficiency and discipline had been compromised in the Fleet, Dumaresq only withdrew his resignation after obtaining the general distribution of a Government statement acknowledging that remission for the mutineers was an act of clemency, extended to all offenders following the proclamation of peace.

Expressed in terms such as these, integrity defines our greatest opportunity for service to our country, because it requires a willingness to pursue the truth, act with honesty and accept the consequences. It was a trait Dumaresq shared with Admiral Sir Anthony Synnot, RAN, one of the most highly respected officers ever to serve in the Australian Defence Force (ADF). As Chief of Defence Force Staff between 1979 and 1982, Synnot approached the task with strategic foresight and determination. Aware that Australia needed to play a leading military role in the Asia-Pacific region, he began a comprehensive program to improve the ADF's capabilities. Among other initiatives, Synnot persuaded the Fraser Government that replacement of the aging aircraft carrier HMAS *Melbourne* (II) was a high priority, and was involved in the decision to buy HMS *Invincible*. He did not shirk, however, from criticising the Government's later plans to reschedule several of these re-equipment programs, including the carrier purchase.

Admiral Sir Anthony Synnot (1922-2001) (RAN)

Synnot exposed 'rescheduling' as a euphemism to disguise economic cut-backs and hide the loss of defence capability, without directly over-ruling the individual Service chiefs. Bearing the moral responsibility to represent the ADF in the face of an unreceptive government, Synnot was always courteous, patient and resolute. His approach was not adversarial, he rather sought consensus through uncomplaining effort.

Lieutenant Commander (later Commodore) David Farthing, RAN, was another who faced up to the task of saying what was right, not simply what others might wish to hear. In 1969-70 he commanded the RAN Helicopter Flight Vietnam which operated as an Experimental Military Unit (EMU), integrated with the US Army's 135th Assault Helicopter Company:

> On one occasion a young Regular [US] Army Captain was posted to the Company as our Flying Instructor, a vital position in any aviation unit, but, doubly so when so many of your aviators are straight out of flying school. Inquiries revealed that our new Instructor had only 125 hours in total. This situation caused the only real argument in my time with the EMUs – I said that he did not have sufficient experience to instruct (observing that none of the Australian pilots had less than 1000 hours) and my American CO [commanding officer] did not agree. Sadly, the new Instructor managed to kill his first student the next day and the CO was sacked for something which was really the fault of the system.

Integrity is the backbone of character; it is cheapened by insinuations of mere display, or the maintenance of different sets of values depending on context. In an armed service integrity must be protected at all costs. In effect, military character must be morally unimpeachable, in order to ensure those who serve:

> Given a mandate by their society to take lives, take only certain lives, in certain ways, at certain times and for certain reasons, otherwise servicemen become indistinguishable from murderers and will find themselves condemned by the very societies they serve.[10]

It is thus integrity, and not military law, which characterises the military ideal and distinguishes worthy from discreditable acts.[11]

This is the hard edge of integrity which, above and beyond the edicts of the *Defence Force Discipline Act 1982*, defines the moral responsibility and character of the RAN. Integrity is of the utmost importance. No one can live well without it, no one can lead without it and no one can serve without it.

Notes

[1] Royal Australian Navy, *Navy Values: Serving Australia with Pride*, Canberra, September 2009.

[2] M Walzer, *Just and Unjust Wars: A Moral Argument*, Basic Books, New York, 2000, p. 3.

[3] HW Richmond, *Naval Training*, Oxford University Press, London, 1933, p. 24.

[4] J Stockdale, *Courage Under Fire: Testing Epictetus' Doctrines in a Laboratory of Human Behaviour*, Hoover Institution on War, Revolution and Peace, Stanford, 1993, pp. 5-6, 7-8, & 13-15.

[5] J Stockdale, *Thoughts of a Philosophical Fighter Pilot*, Hoover Institution Press, Stanford, 1995, p. 227.

[6] Stockdale, *Thoughts of a Philosophical Fighter Pilot*, p. 195.

[7] A Burke, 'Integrity', *Proceedings*, US Naval Institute, October 1985.

[8] Royal Australian Navy, *Warfare Officers' Career Handbook*, Canberra, 2006, p. 122.

[9] Letter, 16 June 1906, *Dumaresq Papers*, held at Sea Power Centre - Australia.

[10] S French, *The Code of the Warrior*, Rowman & Littlefield, Maryland, 2003, p. 3.

[11] MJ Osiel, *Obeying Orders: Atrocity, Military Discipline and the Law of War*, Transaction, New Jersey, 2002, pp. 32-3.

The interior of the Australian War Memorial's Hall of Memory depicts 'Loyalty', as one of the outstanding fighting qualities of Australian service men and women (AWM)

Loyalty

Dr David Stevens

> Loyalty is being committed to each other and to our duty of service to Australia.
>
> *Navy Values: Serving Australia with Pride*[1]

The quality of 'loyalty' is implicit in all of the Navy's values. In general terms it refers primarily to our relationships with family, friends, profession and the nation. In the Service context loyalty, together with such sentiments as 'patriotism', 'comradeship' and '*espirit de corps*' all go far to make up our individual and unit morale. In a practical sense, loyalty often requires having trust in our supervisors and commanders to do the right thing and accepting our duty to follow their lawful orders even when we disagree on some aspects. This does not imply servility or rigid conformity, however. If an organisation's members are not encouraged to think critically and provide honest advice then its development is stifled and risks may go unrecognised. Moreover, loyalty is not blind. It must never be used as a polite word to conceal incompetence or mutual inefficiency.

As a unique value the Royal Australian Navy (RAN) regards loyalty as a measure of its people's commitment. A warship is crewed by an assembly of essentially disparate professionals, each fiercely proud of their own individual and category contribution. To weld these individuals together so that all function with one will, in times of stress, is the object of much of our training. Certain factors intrinsic to the sea-going professions already engender the feeling of comradeship. We develop strong bonds simply by living in close proximity and sharing the same experiences and hardships imposed by a harsh and unforgiving environment. The 'fellowship of the sea' is a tradition shared by the mariners of all nations. But a true group spirit can only be fostered in a warship if members know that they are working towards a common goal, share the same values and culture, and acknowledge that each member of the ship's company plays an essential part in achieving operational success. Loyalty, demonstrated in both good times and bad, provides this group cohesion because each individual understands that they are never acting alone.

Naval service is inherently hazardous and frequently arduous and confronting. Indeed, few professions require men and women to put themselves at risk so constantly. In times of immediate and impending danger there may be only a fine line between an individual's desire to preserve the group and their desire for self preservation. It is at these moments that the sense that each person 'belongs' to a larger grouping will be most important.[2] War, and the motivation or lack thereof to continue fighting, brings

further intensity to issues of survival. Although politicians and the media generally prefer simple moral and ethical values in conflict and clear distinctions between our friends and enemies, few Australian sailors have ever demonstrated an overriding interest in a particular ideology. Time and again personal identification with the Service and loyalty to ship and shipmates has done far more to blend individual and group actions than any appreciation of a war's higher aims. Writing after World War II, one RAN sailor noted simply that all he and his shipmates had wanted to do was win and get out of it, 'We had no ideas of glory, we had fought as a team'.[3]

Leading Seaman Ronald Taylor and Chief Petty Officer Jonathan Rogers both displayed consummate loyalty to their shipmates in extreme situations (RAN)

Self sacrifice, the act of laying down one's life in a deliberate attempt to save others, is perhaps the supreme example of loyalty to ones shipmates. During the Pacific War against Japan several RAN personnel died in comparable circumstances, fighting to the last as their vessels went down, and thereby seeking to protect their shipmates from further harm. Best known of these men is undoubtedly Ordinary Seaman Edward 'Teddy' Sheean, who was lost in the corvette HMAS *Armidale* (I) on 1 December 1942. Still strapped to his gun, Sheean continued to fire at the attacking enemy planes even as his ship slipped beneath the waves. Another, Robert Davies, was a midshipman in HMS *Repulse* when Japanese bomber and torpedo aircraft sank his battlecruiser off Malaya in December 1941. He was last seen shouting defiance as he manned his 20-mm Oerlikon gun, and at least one enemy bomber may have fallen to his fire. A third was Acting Leading Seaman

Ronald 'Buck' Taylor, a gunlayer in HMAS *Yarra* (II). Attempting to buy time for her tiny convoy, the 1500-ton sloop mounted a gallant but hopeless defence against three Japanese heavy cruisers in February 1942. Taylor ignored the order to abandon ship and stayed alone at *Yarra*'s last functioning 4-inch gun, firing slowly and defiantly at the enemy until he was killed. All of these men were at war and accepted that death was an ever present possibility, but similar displays of loyalty have also occurred outside times of conflict.

 In the aftermath of the Navy's worst peacetime disaster, the loss of HMAS *Voyager* after a collision with HMAS *Melbourne* (II) on 10 February 1964, one of the destroyer's most junior officers and her most senior sailor each received posthumous gallantry awards. Both had lost their own lives while attempting to save others. Midshipman Kerry Marien, having survived the collision and reached the safety of a life raft, immediately returned to the water to see if he could help those still struggling. He was last seen heading towards *Voyager*'s forward section which floated for some five minutes before it sank. Among those still trapped within this section were 60 men in the forward cafeteria. Here *Voyager*'s coxswain, Chief Petty Officer Jonathan 'Buck' Rogers, had been presiding over a game of tombola. Sailors who did escape, later told how Rogers had taken charge of the situation. Calming terrified shipmates, he attempted to control the flooding, tried to free a jammed escape hatch with a length of pipe and a spanner, and organised men to move into other compartments with unblocked exits. Knowing that he was probably too large to fit through an escape hatch, Rogers led those still trapped in a prayer and a hymn. His wife later remarked that these actions were 'typical of him - he never thought of himself'.[4]

Group loyalty clearly suffers if relationships within a Service are not based on trust, and further strengthened through mutual respect and fair treatment both up and down the command chain. As the US Army General George Patton once remarked, 'There is a great deal of talk about loyalty from the bottom to the top. Loyalty from the top down is even more necessary and much less prevalent'.[5] Fortunately, the RAN has generally been well served by its senior officers, particularly in wartime. Cruiser captains such as John Collins, Henry Showers and Harry Howden, all established reputations as highly skilled professionals; officers recognised by their superiors as aggressive and resourceful, but who also earned the respect of their men for not taking unnecessary risks. 'We swore by Captain Howden', wrote one HMAS *Hobart* (I) sailor about his commander's performance, 'The confidence we had in him was as strong as our faith in the ship'.[6] Even so, the most outstanding officer of his generation was arguably Captain Hec Waller, RAN, who had earned a reputation as an outstanding fighting captain in the Mediterranean while in command of HMAS *Stuart* (I) and the Scrap Iron Flotilla. Waller, as one description has it:

> Was fair, serious-minded, and always reasonable. He was an officer with a profound sense of responsibility towards his job and his men. He had an almost uncanny ability to make others feel secure and trust him implicitly, and a way of never varying in his attitude to those under or above him. Perhaps this, his capacity to be always the same in his

> relationships with his fellows, a characteristic all men responded to, was his greatest asset as a man and as a great commander.
>
> When ratings said, 'Hec's a gent', they were not interested in his antecedents or his upbringing. They meant they liked him, respected him, and would follow him to hell if that was absolutely necessary.[7]

Waller expected efficiency, but he never insisted on the impossible or made further demands when his men had a job to do. He demonstrated his trust in them and they responded in kind. It says much of Waller's concept of loyalty that he treated admirals as he treated the youngest rating - directly and courteously. Waller lost his life in HMAS *Perth* (I), famously engaging a stronger Japanese force outside the Sunda Strait. His former commander in chief, Admiral Sir Andrew Cunningham, RN, with whom Waller was quite willing to publicly disagree, wrote an often quoted tribute:

> Hector MacDonald Laws Waller will always remain in my mind as one of the very finest types of Australian naval officer … Full of good cheer, with a great sense of humour, undefeated and always burning to get at the enemy … Greatly loved and admired by everyone.[8]

Loyalty has been described as the 'greatest battle asset of all', but it is something that must be earned, it cannot simply be commanded from others.

Notes

1.   Royal Australian Navy, *Navy Values: Serving Australia with Pride*, Canberra, September 2009.

2.   C Wastell, 'Stress in war', in D Stevens & J Reeve (eds), *The Face of Naval Battle*, Allen & Unwin, Sydney, 2003.

3.   M Williams, *HM Australian Ship Kapunda*, Eureka Press, Beverly, undated, p. 82.

4.   D Bennet, 'Rogers, Jonathon (1920-1964)', in GP Gilbert (ed), *Australian Naval Personalities: Lives from the Australian Dictionary of Biography*, Papers in Australian Maritime Affairs No. 17, Sea Power Centre - Australia, Canberra, 2006, p. 180.

5.   P Tsouras, *Dictionary of Military Quotations*, Greenhill, London, 2000, p. 279.

6.   R Blain, 'Grim days in the Java Sea', in TM Jones and IL Idriess, *The Silent Service: Action Stories of the Anzac Navy*, Angus & Robertson, Sydney, 1952, p. 229.

7.   R McKie, *Proud Echo*, Angus & Robertson, Sydney, 1953, p. 23.

8.   AB Cunningham, *A Sailor's Odyssey*, Hutchinson, London, 1952, p. 308.

PART III: HISTORICAL AND CONTEMPORARY PERSPECTIVES

The very existence of the German Pacific Fleet was a serious threat to Australian commerce. This photograph of the fleet at sea was taken from the light cruiser Dresden *off South America in November 1914* (AWM H15963)

Notes on the Defence of Australian Trade Routes, August 1909

Commander JT Richardson, CNF

> If we are going to defend our sea-lines of communication to the rest of the world, we have got to make sure that we have got the naval capability to underpin that. And Australia therefore must have necessary maritime power in the future in order to give that effect.
>
> Prime Minister Kevin Rudd, 2008[1]

Background

Protection of merchant shipping has been a fundamental task for all navies, including the Australian Navy, for centuries. Maritime communications have been and remain essential not just for the movement of raw materials and trade goods, but for the very stability of each nation's economy, standard of living and political structure. Without efficient maritime communications a nation has difficulties engaging with others in the global system, and many isolated nations become poor, insecure and unstable. Hence it should not be too surprising to find that shortly after Federation, Australian leaders were discussing the importance of protecting merchant shipping and defending maritime trade routes.

A heated debate followed the Report of the Committee of Imperial Defence in May 1906 which assumed that an attack on Australia by raiders could be met by adequate harbour defences and countered by a British fleet sent in pursuit. This was not acceptable to many Australian politicians and naval authorities who believed that harbour defences were of little value against modern naval attack, and that in fact local naval forces were necessary to protect trade along the coast and in adjacent waters. The debate over whether the Australian Navy's role should be limited to harbour defence or include blue water operations continued; inaction resulted and meanwhile the Australian Navy's ships became obsolete. This all changed at the 1909 Imperial Conference in London when, on the 10 August, the Australian delegates were advised that the Royal Navy could no longer guarantee sea supremacy in the Pacific.[2] Australia was asked to provide a blue water fleet unit and to ultimately take responsibility for the Australia Station. Back home, despite some opposition, most factions saw advantages in supporting the fleet unit concept, and the Federal Cabinet provisionally endorsed the scheme on 27 September 1909. Whilst these discussions were ensuing, the Minister for Defence, the

Honourable Joseph Cook, MP, sought advice from Commander John T Richardson who was the Acting Naval Commandant of Queensland at the time. Richardson was asked to prepare the following report on the defence of Australian trade routes.[3]

Today, the Australian Defence Force, particularly the Royal Australian Navy, continues to give priority to the protection of maritime communications. Sea lines of communication security is not only essential for our own economic well-being it is also of national interest to our global trading partners. As Richardson pointed out in 1909, the defence of Australian trade routes is inseparable from the trade routes of the world. Maritime forces that protect trade likewise cannot be understood in narrow national terms. Like the trade routes, modern maritime forces are deployed globally, in coalitions, and are most effective when in a global maritime partnership.

In the early months of World War I the German light cruiser SMS Emden *conducted a highly successful campaign against commerce.* Emden *sank many commercial vessels before she was destroyed by HMAS* Sydney *(I) (AWM H16829)*

Memorandum: For the Honourable, the Minister of State for Defence.

Subject: Notes on the Defence of Australian Trade Routes.

In accordance with your verbal request for my views on the above matter I submit:

THE REPORT ON THE COMMITTEE OF IMPERIAL DEFENCE 1906 states definitely, that the only form of attack to be apprehended will be a raiding attack by not more than 4 unarmoured Cruisers.[4]

I am unable to agree with this statement for the following reasons.

That admittedly the game of the weaker Naval Power is to attempt the financial weakening of the stronger Naval adversary by every possible means, chief of which is capture or destruction of his floating commerce. I cannot therefore subscribe to the arguments that delegate the protection of floating commerce to minor position in Naval Strategy.

Oversea Commerce is vital to us and I venture to affirm, that failure to provide for the reasonable if somewhat restricted flow of seaborne Commerce would immediately produce a financial and Industrial breakdown that would inevitably lead to violent political disruption at a time when the national safety is imperilled. There is a definite place among unions assigned to those who do not protect their own interests.

I may here remark that the magnitude of Britain's floating commerce will allow of a certain loss without jeopardizing the power of ultimately recovering that loss, but any serious loss to Australian floating commerce would result in its definite and final transfer, the experience of Holland and the United States would be repeated.

It seems clear to me, and I am not alone of this opinion, that a definite and powerful attack will be made of our floating commerce, and if so it is certain that all the enemies [sic] available vessels not fitted to take part in decisive Fleet actions will be dispatched on raiding expeditions and will be supplemented by armed Merchant Steamers. The wide possibilities of these craft seem to have been almost overlooked; they are cheap, their loss will entail no particular hardship. Their usual avocation being denied them, they will be better employed destroying our commerce. It should be borne in mind that in place of cargo they could carry coal and liquid fuel for their own use and that of their regular Cruisers, in fact they would be armed Colliers, this coupled with a distilling apparatus and the modern means of preserving food would enable them to keep the sea, out of sight of land for long periods, and until they had done an amount of damage far exceeding their own value.

The great difficulty of finding these craft may be illustrated by the case of the 'Perthshire', known to be disabled, drifting, and anxious to make her position known, being searched for by as least 4 vessels and still not discovered after 6 weeks.

It is clear that the measure of commerce protection ('Fortified Harbors of Refuge') as recommended by the Report of the 'Committee of Imperial Defence 1906' is a remedy almost as bad as the disease, floating commerce tied up in 'Harbors of Refuge' cannot by the widest stretch of imagination be termed floating commerce. 'THE PROBLEM IS TO KEEP THE TRADE ROUTES OPEN, NOT TO SUSPEND THE TRADE'.

There is neither efficiency nor economy in the proposal.

As I gathered from your conversation that you desired some definite proposal from me I submit the following:-

That with a view to correctly gauging the amount of Australia's responsibility in the matter, the Admiralty be asked to state, not what they can do, but what they <u>cannot guarantee</u> in the matter of commerce protection, this will be the exact measure of Australia's Naval responsibility and the type and number of vessels must conform to the service required.

In my opinion seagoing cruisers of high speed will be required in addition to the proposed destroyers which will also most certainly be necessary in parts of Australian waters no matter what ultimate form the Australian Navy may take.

I forward under separate cover a chart showing 'Trade Routes of the World' The boundaries of the different Stations of the 'Eastern Fleet' are colored and the Imperial Vessels allotted to each area are shown in attached schedule. [This chart is not held on the NAA file.]

In my opinion they are not sufficiently numerous to more than watch the obligatory points of passage in daylight and to cover a few hostile and Neutral ports, they cannot tell at dawn what force may have passed them during the night and they cannot leave their beat, therefore the danger to floating commerce is as great in 1909 as it has ever been and ships and cargoes will not be risked until some more definite scheme is evolved.

To sum up my opinion is 'THAT AUSTRALIA'S NAVAL RESPONSIBILITY COVERS JUST THAT AREA OVER WHICH THE ROYAL NAVY CANNOT GUARANTEE CONTROL'.

JT Richardson, CNF
Commander
A/ Naval Commandant
Queensland

Dated 20 August 1909

THE EASTERN FLEET

Name of Station	Name of HM Ships on each Station	Type of Ship	Remarks
China	Bedford	Armored	
	Kent	Cruiser	
	King Alfred	Cruiser	
	Monmouth	Cruiser	Total Cruisers 6
	Astrea	Cruiser 2d. Class	
	Flora	Cruiser 2d. Class	
	Fame	Destroyer	
	Hart	Destroyer	
	Otter	Destroyer	
	Virage	Destroyer	
	Whiting	Destroyer	
	Attached ships	16	For work in Chinese rivers only, includes 1 vessel
Australia	Powerful	Cruiser 1st Class	
	Cambrian	Cruiser 2d. Class	
	Challenger	Cruiser 2d. Class	
	Encounter	Cruiser 2d. Class	Total Cruisers 9
	Pegasus	Cruiser 3d. Class	
	Pioneer	Cruiser 3d. Class	
	Prometheus	Cruiser 3d. Class	
	Psyche	Cruiser 3d. Class	
	Pyramus	Cruiser 3d. Class	
Cape of Good Hope	Forte	Cruiser 2d. Class	
	Hermes	Cruiser 3d. Class	
	Pandora	Cruiser 3d. Class	Total Cruisers 3
East Indies	Fox	Cruiser 2nd Class	
	Hyacinth	Cruiser 2nd Class	Total Cruisers 5
	Perseus	Cruiser 3rd Class	
	Philomel	Cruiser 3rd Class	
	Proserpine	Cruiser 3rd Class	
	Attached Ships	3	No fighting value

Notes

1.   'Prime Minister's Press Conference Townsville, 10 September 2008', in GP Gilbert and N Stewart (eds), *Australian Maritime Issues 2008: SPC-A Annual*, Papers in Australian Maritime Affairs No. 27, Sea Power Centre - Australia, Canberra, 2009, p. 9. Full interview available at <http://www.pm.gov.au/node/5596> 13 May 2010.

2.   See David Stevens, 'The Australian Navy and the 1909 Imperial Conference on Defence', in this volume.

3.   The original report is held by the National Archives of Australia under MP178/2/0, File 21652/1/6, Notes on the Defence of Australian Trade Routes, 1909. Conversely, the German plans for a war on Australian commerce are described in J Tampke, (ed), *Ruthless Warfare*, Southern Highlands Publishers, Canberra, 1998.

4.   The Report of the Committee of Imperial Defence, May 1906 has been published in GL Macandie, *The Genesis of the Royal Australian Navy,* Government Printer, Sydney, 1949, pp. 162-6.

The Enduring Naval Logistics Lessons of World War II and Korea

Dr Peter V Nash

Mobile seaborne logistic support today is a well-established and vital enabler for achieving sustained reach, freedom of manoeuvre, and operational flexibility at varying tempo and intensity in maritime operations, traditionally the hallmark of blue water navies, but also a key enabler for navies operating in the littoral. However, because the practicalities of planning and keeping warships at sea for extended periods have become very much an everyday routine that can be conducted swiftly and safely, there is a risk of taking this capability for granted. As new logistic challenges arise, particularly as a result of technological advances in a variety of platforms, ordnance and network enabled capability, it behoves us from time to time to reflect on some of the lessons from history as navies have sought to develop the ability to sustain fighting fleets at sea for extended periods in order to win.

One of the reasons for looking back is to gain a better appreciation of how navies acquired the experience and necessary skills in the first instance, which not only produced a responsive logistic support force to conduct ocean warfare, but also produced the necessary replenishment doctrine to make it work. Fleet carrier operations for the Royal Navy (RN), for example, are once more in the forefront of logistic planning, yet it has been many decades since the last fleet carriers were deployed and many more since they were replenished at sea under wartime conditions. As navies therefore review or re-ask themselves what type of relationship must prevail between combatant and logistic support, some valuable wartime perspectives can be garnered from those who actually fought in the 1982 Falklands War or the subsequent wars in the Arabian Gulf. But looking even further back in history can also yield valuable lessons – even if, at first sight, they might not appear so directly applicable.

The purpose of this paper, therefore, is to focus on two particular wartime naval campaigns, the Pacific War in 1945 and the Korean War. Each in their different ways help to highlight some of the logistic challenges that come with trying to harness the necessary complex logistic support in the right place, at the right time and all of the time if the full potency of carrier borne air power is to be exploited in a sustained and flexible manner.

Relevance of the 1945 Pacific Campaign to the US Navy and the Royal Navy

Throughout the inter-war period British logistic plans had assumed that from a geographical standpoint naval operations would remain relatively parochial, reflecting broadly their experience during World War I. The Pacific was therefore never in the forefront of strategic deliberations; any future deployments beyond Europe, particularly to the Far East, were therefore expected to rely on a chain of bases and repair facilities spread throughout the empire. Operations over long distances for extended periods were consequently not considered likely and replenishing capital ships at sea was largely ignored.[1] In contrast, the US Navy's approach became more inclusive and forward looking for the important reason that it had no choice. As the prospects of war loomed, a two-ocean strategy became an essential consideration with the potential Pacific threat posing some particularly unique and difficult logistical challenges due to the distances involved and the lack of available American bases other than at Hawaii and the Philippines. Thus each navy developed its logistic framework based on its perception of, and confidence and capacity to meet the new, increasingly ominous geostrategic threats of the late 1930s posed by Japan in the Far East and Germany and Italy in Europe.

A key difference in philosophy between the two navies was on the future role of aircraft carriers, which was partly due to how and, no less importantly, where these were likely to be deployed. In truth, neither navy had foreseen even in the early years of the war, the full strategic and logistic ramifications of operating carrier task forces, which would partly explain why mobile logistic support for this type of warfare was not prioritised until it was almost too late. While American plans nevertheless remained more or less intact throughout the war, Britain's pre-war plans for the Far East were turned upside down by the fall of Singapore, with its large graving dock, as well as Hong Kong, thereby effectively eliminating any fixed base logistic support in the region. The Pacific naval campaigns of 1944-45 therefore required unprecedented access to afloat logistic support operating at various forward or advanced bases across the Pacific, often thousands of miles from Allied naval bases. For the British Pacific Fleet operating as part of the American 3rd/5th Fleets its nearest naval base was Sydney, albeit still a long way from the battle front. The resulting challenge of trying to sustain both amphibious support operations and large-scale carrier task forces across a vast and constantly changing battlespace was only resolved by creating an effective, if not necessarily efficient, fleet train system designed to provide the necessary logistic support at sea. Only then could carrier task forces remain for extended periods on station to achieve the necessary strategic flexibility, mobility and endurance to win the Pacific War.

What was the Main Logistics Issue of 1945?

Replenishment at sea, in general terms, had remained more or less in a state of arrested development until 1943-44, primarily because neither navy foresaw, particularly during the inter-war period, any overriding need for stretching this specialised capability any further. British oiling-at-sea policy therefore remained essentially confined to convoy escorts in the Atlantic while the US Navy's experience was comparatively broader but still minor in scale compared to their subsequent experience in the closing years of the war. What no one had foreseen were the logistical implications of deploying increasing numbers of new aircraft carriers as task groups to destroy enemy carriers and to provide air based support for amphibious operations. The size of the Pacific Ocean, the huge distances involved, combined with the speed and unprecedented tempo of operations, all dictated the need for an imaginative and innovative logistical solution. The answer, as we know, were vast fleet trains that could supply fuel, aircraft, ammunition, provisions, mail, personnel and so on at sea as well as additional afloat repair and support facilities in safe anchorages away from the battle front. These solutions, indeed, significantly amplified the existing carrier capabilities. But while the role and potency of carrier task forces were transformed, the very character of logistic support had also changed profoundly. The Pacific in 1945 therefore became in effect the defining moment in the history of mobile logistic support that would quickly become regarded as the benchmark for future logistic planning and execution.[2]

Once peace returned, it was not too long before many of the lessons gained from this huge Pacific experience were relegated to history or forgotten. Recommendations for new designs were effectively frozen, large swathes of ships were scrapped or sold or placed in reserve and skill-sets decimated through demobilisation. Post-war austerity forced navies to drastically cut back their post-war fleet plans and aspirations. It is therefore against this backdrop that we should look at how the value of logistic support was perceived in the post-war era.

Post-War Logistics

Having survived their critical baptism of fire (albeit on different scales) the post-war navies had to question whether the fundamental paradigm shift in carrier task force sustainability should remain the model for future naval logistic planning in peacetime. Both navies had been forced to develop mobile logistic support almost entirely by trial and error, a process that relied too heavily on improvisation to get the job done. The hope and expectation was that a more informed and relevant procedure for preparing fleet logistic plans would now be devised to ensure a better level of preparedness for future contingencies. Yet there was no magic answer, given the growing prospect of another possible global war which required maintaining properly prepared armed forces on the one hand while, conversely, the combination of peacetime economic realignment and massive reduction in operational tempo effectively torpedoed any justification for

retaining large logistic afloat support – it was after all proving difficult enough to keep even the active combat fleet up to scratch. As a result much of the battle-worn logistic support force was either scrapped or held in reserve while wartime replenishment doctrine and procedures remained more or less static. As for the fleet train concept, which after all was the only successful working model they knew, this remained the core component of early post-war Allied mobile logistic support doctrine – at least in theory. It would take the North Korean invasion of the South to see whether the Allied response would apply the theory once again into practice.

Commonwealth Naval Forces in the Korean War

Altogether some fifty-five warships of the Commonwealth navies served in the Korean War for various periods: thirty-two from the Royal Navy (including five light fleet carriers), nine from the Royal Australian Navy including a carrier, eight from the Royal Canadian Navy and six from the Royal New Zealand Navy. Afloat support throughout the war was provided by a fleet train which at various times called for a total of two naval headquarter ships, a hospital ship, sixteen Royal Fleet Auxiliary vessels and two merchant fleet vessels.[3] The logistic support for the Commonwealth naval forces in Korea worked as a coalition team with each navy contributing specialist support vessels to form an effective afloat support whole.

Benign logistics framework

Given that both the RN and US Navy deployed the same type of auxiliary ships and equipment originally assembled for the Pacific War five years earlier, the nature of mobile logistic support more or less followed past precedent, but with some important differences. Although the core purpose remained the same, that is to replenish carrier(s) on station, this was about the only consistent aspect when comparing Korea to 1945. Korean naval operations were much more modest in scale, numbers and tempo, and against a benign threat at sea. They particularly benefited from the shorter transit time from the nearby host nation support provided by Japan, including excellent repair and maintenance facilities.

In general terms the naval logistic forces eventually deployed in Korea just about matched the demands placed upon them, particularly as the ramp up from American reserves gathered pace. That said, there was one very important development that posed a unique problem for American logisticians in Korea which had been totally underestimated and would have enormous ramifications for future auxiliary design and replenishment doctrine.

While in very broad terms, the Commonwealth naval forces operated without too many hiccups because force levels remained relatively constant and mobile logistic support was provided under relatively benign and predictable conditions. However it proved to be a very different story for the American carrier task force of TF 77 roaming in the Sea

of Japan. The problem there was how to sustain the level of resupply to their carriers in order to cope with the huge increase in consumption of aviation fuel and ordnance caused by the high sortie rate of their jet aircraft. With such jets consuming fuel four times faster than piston-engined aircraft, and able to carry much heavier payloads, both fuel and ammunition expenditure rates were to skyrocket. Despite the respective sizes of US Navy forces between 1945 and the Korean War, in the first ten months of the Korean War the US naval and marine aircraft expended one fourth as much aircraft ammunition as that of all US marine and naval ships or shore based aircraft combined from *all* theatres in World War II.[4] The result was that replenishment at sea increased from every third day in a 21 day cycle in the early part of the war to, by the end of the war, every evolution taking anything up to nine hours despite additional rig stations, with nightly replenishment eventually becoming the rule.[5]

HMAS Sydney *(III) and USS* Hanna *replenishing at sea off the Korean coast. By the end of the Korean War naval logistics could sustain carriers and their aircraft at a high tempo, for extended periods at a great distance from their support base* (RAN)

Mobile Logistic Support: The Doctrinal Legacy of World War II and Korea

Progress post-World War II in refining logistics policy based on wartime experience was erratic, partly because in terms of naval priorities during a time of severe fiscal restraint, any improvements in underway replenishment capability were evolutionary in nature and peripheral in consequence. What was here to stay, though, was the concept of deploying fleet trains specifically for the purpose of sustaining at sea carrier strike task forces so that they could act as independently as possible from their permanent bases anywhere in the world, which would indeed soon become the central tenet of American naval doctrine going forward. Even for the Americans, however, who had

a wealth of wartime logistics experience to call upon, the early post-war period still proved a difficult time to harness the necessary intellectual and practical resources to place the discipline of logistics alongside the combat disciplines to form an integrated strategic planning and command structure. That it was successful at all was very much a result of the logistics related initiatives developed by the US Naval War College after 1947 which were designed to ensure the naval officer corps would become better acquainted with the logistic lessons to be drawn from World War II, as well as gaining an improved understanding of the fundamental theory of logistics. Much of what had been accomplished logistically of course had happened out of necessity whereas in peacetime financial constraints invariably imposed a choice. While history arguably might not be expected to repeat itself, it was nevertheless considered important to corral these wartime experiences into some sense of order by establishing a core set of logistic principles that would provide the necessary context from which lessons could then be identified to ensure the service as a whole was better prepared and structured to meet the logistic challenges of the future. Of all the wartime lessons or principles learnt by both navies perhaps the following represent some of those more enduring which have equal resonance even for today.

Protect core competencies

Even during a period of economic or military contraction and realignment, it is essential to protect core competencies, of which mobile logistic support capability must rank near the top for any globally-minded navy. This involves ensuring that all replenishment at sea experiences, whether in trials/practice or in combat, are properly codified and retained in the corporate memory bank to avoid the effects of skill fade engendered by high personnel turnover (or demobilisation after a war) or reduced tempo/ship deployment. Post-war exercise analysis, for example, demonstrated very clearly that unless commanders incorporated simulated war conditions for both the auxiliary and (more importantly) for the receiver warship then efficiency of transfer rates declined very steeply. The solution was to reinforce the mantra that 'you must train as you would fight'.

Logistic command

One of the most significant lessons from 1945 was that the task force commander must have control of his logistic support to ensure proper harmonisation and responsiveness.[6] US practice ensured that logistic command was co-located with the task force commander, enabling more certain control in these circumstances. For the British, however, this had not been the case either at sea or even within Australia and this had occasionally made coordination and planning very difficult.[7]

The transition to a peacetime economy, moreover, presented a number of new logistic challenges for military leaders, in particular the growing pattern of uncertainty within both British and American commands as to what was the nature and degree of control that military commanders should now exercise over their logistic support. How much control should be exercised by a civilian authority? Where does centralisation of authority in logistical control enhance combat efficiency or detract from effectiveness? This might not resonate so much in today's world, but the concern post-1945 was how best to achieve the necessary understanding between civilian and military interests to determine the right interrelationship for achieving a sound and effective organisation that could provide the right level of logistic support in peacetime.

Coalition command

The logistics concepts derived from a defensive strategic approach are usually inadequate for supporting large scale global offensive operations that tend to produce an entirely different set of problems for which different solutions need to be found. At the alliance level too, a different challenge could arise, either at the practical or political level, because what might work for British or American forces might not be appropriate for other national forces, or vice versa. Either way, logistics cannot be looked at in isolation; it has to be integral to the circumstances.[8]

Calibrating teeth and tail

Force size must be governed by limitations of fleet support capability. Most of the past failures to achieve a balance between combat and support forces had reflected, at the command level, either a lack of good logistic planning or an unwillingness to devote adequate resources or talent to address the underlying problem. But experience had also shown that unless checked, logistic activities tended to grow out of all proportion to the tactical forces they were originally designed to support. Often what happened was that, having under planned for a particular event or campaign, the immediate unsatisfied demand forced planners to overreact such that the risk of 'snowballing', whereby excesses occur at the mature end of build-ups as the relationship of movement between supply and the front gets out of kilter, becomes a problem that can get out of control.[9] This tendency has a direct bearing on achieving the optimum balance between 'teeth' and 'tail' in any operation, a task that becomes more difficult with the introduction of increasingly complex weapons and platform technology. One is reminded that towards the end of 1944 some 80 per cent of logistic supplies to US naval forces overseas were maintenance items.[10]

Korea also provides a good example of why it is so important to ensure that for every major introduction of either new platforms or ordnance (where volume or velocity have serious ramifications on underway delivery thresholds) the logistics implications must be fully addressed and planned for to achieve a fully integrated workable solution.

The risk of always relying on modifying or stretching the transfer system beyond its inherent design will eventually produce diminishing returns – particularly under combat conditions where ordnance expenditure, for example, invariably exceeds plans or expectations.

The need for improvisation

One particularly outstanding, if perhaps self evident, lesson of wartime logistics was that logistic mistakes often do not become evident until sometime after they are made, which usually meant they could not be corrected quickly. It was therefore inevitable that for both the RN and US Navy the words 'improvisation' or 'extemporisation' became synonymous with any logistic exercise and this applied no less at the highest levels of command.

False logistics planning

There is a direct analogy between, for example, the accumulation of ships or materiel in reserve and preparing logistic plans. Even if they are obsolete, their mere existence risks giving planners a false sense of security. Particularly by 1944-45 the naval strategists, often in their attempt to retain flexibility, were often found to ask too little rather than too much from logisticians. In peacetime, though, planning generally imposed fewer limitations, less pressure, and more time, so efficiency was actually rarely tested. Yet, as the size of combat forces is increased, the logistics problems not only increase in size but also change their nature. The caveat then (and now) is to inculcate close relationships between the strategists and logisticians to avoid marginalising all logistic implications at the altar of the more exciting strategic or tactical imperatives. That requires logisticians to be capable of envisaging needs beyond the purely operational or procurement/supply logistics.[11]

Controlling mission 'downtime'

Volume and velocity are key variables for controlling mission 'downtime'. This variable applies as much to warship receiver rates as delivery pumping rates. It was even evident through to the 1960s that, in terms of flow rate, many evolutions (and therefore by definition increased exposure to risk from enemy attack and delay in mission) were increasingly being extended to accommodate the growing proportion of aviation fuel requirements for each evolution, notwithstanding having to rely on the traditional smaller hose size for aviation fuel and smaller receiver trunk intakes.

The Seeds of Revolution are Sown, 1945-53

The main peacetime drivers for change in replenishment at sea techniques and associated kit after 1945 were limited to trials and fleet exercises. Both navies acquired German supply ships after the war, originally designed to provide fuel and ammunition/provisions to armed raiders and U-boats in remote locations. The RN deployed their acquisition in trials designed to improve replenishment techniques and doctrine as well as the testing of new transfer rig designs, all of which helped them to achieve near parity with the US Navy in fuel transfer efficiency, a major objective at the time.[12] But lack of resources including modern tankers meant that any such progress remained confined to trials which would eventually help to refine future tanker designs. The Americans delayed deploying their captured supply ship until it became evident during the Korean War that urgent attention was needed in designing a fast auxiliary capable of delivering both solids and liquids simultaneously, a concept first considered in 1947 but now very much precipitated by their difficult experience in supporting carriers in the Korean War that were deploying jet aircraft for the first time.

The seeds therefore, of what later became a revolution in British and American auxiliary design and transfer technology, were undoubtedly sown during this whole period. Korea, for example, not only unlocked the necessary funding but obliged both navies, as a matter of extreme urgency, to recognise that it was no longer acceptable to continue adapting yesterday's technology to cope with the logistic demands required by the more modern fast and versatile carriers with their increasingly powerful air component. What was urgently needed were new purpose built naval-designed fleet replenishment ships capable of staying with the carrier forces, transferring fuel and/or ammunition at speed whenever required. The response to the challenge was quick, for within a short period after the Korean War the first deliveries of such purpose built replenishment ships was achieved, while simultaneously, trials were accelerated to determine how helicopters could be deployed in future as a complementary method for transferring materiel, for example, between ships underway.

Of course, these revolutionary developments in mobile logistic support took further time to mature but their success, first demonstrated so forcefully during the Vietnam War, represents the real legacy of the wealth of logistic experience and lessons learnt and applied between 1945 and 1953. This was, after all, the period when the ground rules for mobility were devised and tested, a logistic 'ethos' introduced for the first time and the seeds of revolutionary technological and doctrinal change sown. All this came about in response to the urgent and unprecedented logistical challenges that navies with global expeditionary aspirations were obliged to face at the time, and for which they have continued to do so ever since.

Notes

1   See Norman Friedman, 'Appendix III', *Postwar Naval Revolution*, Naval Institute Press, Annapolis, 1986, for a good summary of the notes prepared by the Admiralty's DNC Department for 'Exercise Trident' in 1948, including aspects of pre-war progress in replenishment at sea.

2   For the history of naval logistics during the later part of the Pacific War see DS Ballantine, *US Naval Logistics in the Second World War*, (reprint of 1947 edition), Naval War College, Newport, Rhode Island, 1998; and WR Carter, *Beans, Bullets and Black Oil*, (reprint of 1953 edition), Naval War College, Newport, Rhode Island, 1998.

3   Naval Staff History, *BR 1736(54), British Commonwealth Naval Operations, Korea 1950-1953*, Naval Historical Branch, London, 1967, p. 298.

4   Rear Admiral FC Denebrink, USN, 'Logistic Support to the Naval Forces in the Korean Campaign and Some Lessons Derived There From', April 30, 1951 RG 15, *Guest Lectures 1894-1992*, US Naval War College, pp. 15 & 21.

5   James Field, *A History of UN Naval Operations: Korea,* GPO, US Naval Historical Center, Washington DC, 1982, pp. 378 & 380.

6   Henry E Eccles, *Logistics in the National Defense*, Stackpole, Naval War College Press, Newport, Rhode Island, 1997, p. 225.

7   Peter V Nash, *The Development of Mobile Logistic Support in Anglo-American Naval Policy, 1900-1953*, University Press of Florida, Gainesville, 2009, p. 83.

8   Nash, *The Development of Mobile Logistic Support in Anglo-American Naval Policy, 1900-1953*, p. 83.

9   Eccles, *Logistics in the National Defense*, p. 103 & 146.

10   Duncan S Ballantine, *US Naval Logistics in the Second World War*, Princeton University Press, Princeton, New Jersey, 1949, p. 177.

11   Nash, *The Development of Mobile Logistic Support in Anglo-American Naval Policy, 1900-1953*, p. 85.

12   Nash, *The Development of Mobile Logistic Support in Anglo-American Naval Policy, 1900-1953*, p. 222.

A Brief History of Active Sonar

Ms Angela D'Amico and
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It has been suggested from several fronts in recent years that surface ship mid-frequency active sonar (MFAS) use is responsible for mass strandings of beaked whales (family Ziphiidae).[1] To provide background for this special issue on strandings and MFAS, a brief history of active sonar is presented that traces the development of MFAS from its origins in the early 20th century through the development of current tactical MFAS. An overview of their parameters as well as their use over time is also provided.

Summary History of Active Sonar

Two events underscore the value of underwater acoustics for the detection of submerged objects: the loss of the SS *Titanic* to an iceberg during her maiden voyage on 15 April 1912 and Allied shipping losses to U-boat attacks during World War I (WWI). In response to the need for enhanced detection of submerged objects and enemies, the first successful underwater transducer developed was a 540Hz electrodynamically driven circular plate, conceived and designed by Reginald A Fessenden while he was working for the Submarine Signal Company in Boston, Massachusetts. Work on this system started in 1912 and a patent was awarded in 1913. In 1914, the system demonstrated the power of echo ranging with the detection of a distant iceberg 3.2km off the coast of Newfoundland, Canada. Work on what was termed the Fessenden oscillator was conducted until 1931, during which time the frequency was increased from 540Hz to 1000Hz.[2]

The emergence in WWI of the submarine as a weapon of choice of weaker naval powers, an 'asymmetrical threat' in today's parlance, stimulated the need to detect submerged submarines that were otherwise invisible.[3] The stealthiness of the submarine and the opacity of the oceans profoundly changed naval warfare for the remainder of the 20th century.[4] Since sound is the only transmitted energy that penetrates water for any appreciable distance, acoustic echo-ranging had to be exploited to counter this threat.

The most important echo-ranging system to emerge after WWI was the ultrasonic ASDIC, a cooperative effort by the British and French navies. ASDIC, an acronym for Allied Submarine Detection Investigation Committee, was formed during WWI to conduct research on the detection of submarines. Similar research was undertaken in Italy and more extensively in the United States. In 1918, the first ASDIC system was demonstrated by Paul Langevin, a French physicist, using a transmitter that was designed to mechanically resonate at 38kHz and was used to estimate target range and bearing.[5]

The first ASDIC shipboard systems, which had a covered dome that allowed the system to operate while the ship was moving, were installed in 1919. Operating frequencies varied from 20 to 50kHz. During the 1920s and early 1930s, ASDICs were developed for use on destroyers for anti-submarine warfare (ASW). The inter-war period was also a time for basic research in underwater acoustics. One key discovery during this period was that the amplitude of higher frequencies of underwater sound are attenuated more than lower frequencies as they pass through seawater. Based on this observation, the frequency range for a new destroyer ASDIC (type 119) was dropped from 21 to 31kHz to 14 to 26kHz and stabilised a few years later at 14 to 22kHz. The typical frequency for ASDIC during that time, and subsequently during World War II (WWII), was 20kHz, with the primary goal of detecting submarines near surface ships that were their potential targets.[6] After WWII, ships with ASDIC sets were used by the whaling industry for different reasons other than submarine detection.[7]

Figure 1: Standard WWII sonar domes (Bureau of Naval Personnel, 1953)

Another major development in active echo-ranging systems occurred when the US Naval Research Laboratory developed the first 'QA' sonar, which was to become the first destroyer-mounted, echo-ranging sonar in the US Navy, operating at 15 to 20kHz. By 1933, the QA sonar was installed on eight destroyers. Subsequent improvements in transducer technology yielded the QC series, which was installed as a standard ASW active sonar on all US destroyers at the outbreak of WWII.[8] When two letter designators were used for US Navy equipment, the first letter indicated the type of equipment (Q represented Sonar Echo Ranging Listening equipment) and the second letter indicated the subtype of the equipment.[9]

Use of the word 'sonar' for these systems, defined as Sounding Navigation and Ranging, was coined in 1942 by FV Ted Hunt, director of the Harvard Underwater Sound Laboratory.[10] All of the WWII sonars had transducers consisting of a flat faced array of elements in spherical or tear shaped housings that were mechanically lowered below the hull and also mechanically trained (turned) in azimuth. A Naval Sonar Operator's manual published just after WWII provides a diagram of the traditional sonar dome (Figure 1). Between the late 1940s and 1960, in response to improvements in submarine technology and the increased threat this represented, surface ship active sonars were developed for the US Navy. The major Cold War active sonar technology development was the advent of scanning sonar to compensate for faster submarine speeds and the need to switch rapidly from long-range to short-range detection of an attacking submarine. In scanning sonar, the transducer becomes an array of elements arranged in a vertically oriented cylinder. This permits omni-directional transmission and reception. Scanning sonar provides directional search capability via sending and receiving focused sound energy in multiple directions simultaneously with different ping intervals. Longer ping intervals allow longer-range detections, which are derived from the time it takes for the ping to reach a target and for the echo to return.[11] The QHBa series was the first scanning active sonar, and it operated at 28kHz.[12] Figures 2 and 3 show a cut-away of a scanning sonar and a diagram of the QCB system, respectively.

The AN/SQS-4 sonar was proposed in 1948 as a 14kHz equivalent of the QH sonar. The AN/SQS-4 was first tested in 1951 and entered fleet service in 1954, primarily on surface ships and some submarines. System designators were originally called the Army-Navy Nomenclatures System (the prefix 'AN'). There is a three letter and a number designator for the surface ship sonars. 'SQS' signifies 'S' – Surface ship, 'Q' – Sonar, and 'S' – Search. The number represents the series.[13]

The detection range of these sonars was limited by their operating frequency, leading to the development of lower frequency active sonars to minimise attenuation loss and thus increase detection ranges. Later versions of the AN/SQS-4 reduced the typical operating mode to four variants: (1) 8kHz, (2) 10kHz, (3) 12kHz, and (4) the original 14kHz.[14] The next improvement in surface sonars was RDT (Rotational Directional Transmission), which permitted increased transmitted power by pulsing groups of
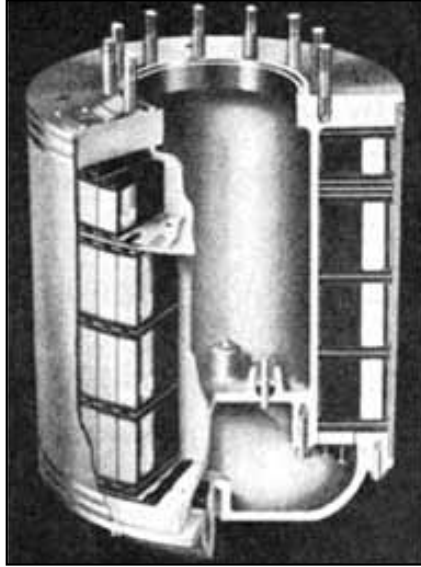
Figure 2: Cut-away view of the first scanning sonar transducer
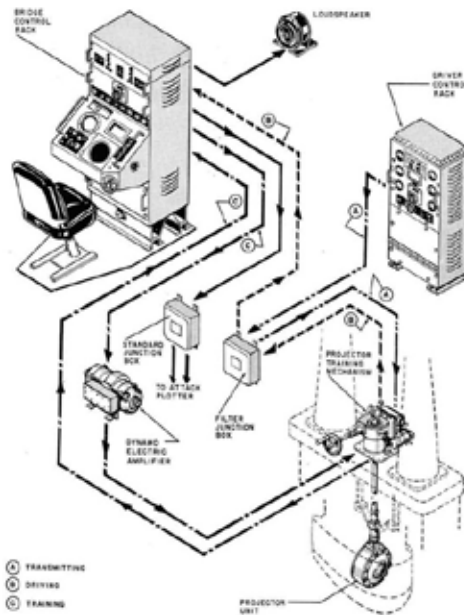(Bureau of Naval Personnel, 1953)

Figure 3: Pictorial diagram of the QGB System (Bureau of Naval Personnel, 1953)

hydrophones in sectors sequentially. This feature was back-fitted into the existing AN/SQS-4 series sonars, which were then redesignated AN/SQS-29 through AN/SQS-32 (for AN/SQS-4, mod 1, 2, 3, 4, respectively).[15] RDT was also utilised in new follow on sonars.

The US Navy also continued its quest for lower-frequency sonars through the development of the AN/SQS-23 sonar with a frequency of 4.5 to 5.5kHz. The AN/SQS-23 replaced AN/SQS-4 on some older destroyers under the Fleet Rehabilitation and Modernisation (FRAM I) program and was installed in new construction ships. Many of the replaced AN/SQS-4 versions were transferred to Allied navies during the 1950s and 1960s.[16] The goal of the AN/SQS-23 sonar was to provide a standoff engagement capability to its ship, which was then being equipped with the ASROC (anti-submarine rocket) system with a nominal range of about 5nm, which was introduced in 1961. ASROC could deliver payloads consisting of either homing torpedoes or nuclear depth charges. Prior to the advent of the ASROC ASW weapon, weapon delivery was very short range. The AN/SQS-23 was installed in all DDG-2, DLG-6, and FRAM I-class destroyers.[17]

Up to this point, all surface sonars were capable of using only the direct acoustic path (DP) data that limited sonar detection ranges to 5nm or less. However, Dr Maurice Ewing of the Woods Hole Oceanographic Institution, working closely with the US Navy, demonstrated the existence of much longer-range acoustic paths.[18] These were the bottom bounce (BB) path, the convergence zone (CZ) path, and the deep sound channel. Ewing's discoveries were instrumental to all subsequent sonar development. In particular, the sound channel has been exploited by the US Navy's Sound Surveillance System.[19]

Exploitation of the BB and CZ paths constituted the largest US Navy investment in sonar development in the Cold War. Cox, Urick and Payne discuss the application of these underwater sound paths to sonar.[20] Using these acoustic paths drove sonar frequencies even lower and required more power, better pulse shapes, and more processing. The results of these efforts were the AN/SQS-26 and AN/SQS-53 sonars (commonly referred to now as MFAS).

In 1955, technology was developed to further lower active sonar frequencies, leading to the 3.5kHz AN/SQS-26, which represented the culmination of US tactical MFAS development. Feasibility studies for the AN/SQS-26 began in 1955, and the prototype model was installed in 1961 on the USS *Wilkinson*. Since larger transducers are required to produce lower frequencies, a special class of ASW frigates was commissioned specifically to accommodate the new sonar. Starting in 1960, 58 frigates were authorised to be equipped with the AN/SQS-26 sonars. The US Navy accepted the AN/SQS-26 for service in 1968. Concurrently, the US Navy also modernised its existing WWII-era destroyers (a total of 79 *Gearing* class destroyers) with hull-mounted AN/SQS-23 sonars.[21]

	Inter-War		World War II		Post World War II/Cold War					
Sonar Type	ASDIC 111/112	ASDIC 119	QHBa	AN/SQS10	AN/SQS 4/1, AN/SQS 4/2, AN/SQS 4/3, AN/SQS 4/4	AN/SQS 29, AN/SQS 30, AN/SQS 31, AN/SQS 32	AN/SQS 23	AN/SQS 26	AN/SQS 53A-C	AN/SQS 56
Frequency (KHz)	20-50	14-26	28	20	8, 10, 12, 14	8, 10, 12, 14	4.5, 5, 5.5	3.5	2.6, 3.3	6.8, 7.5, 8.2
Power (kW)			6	4.5	10-50	4-50	60			
Source Level (dB re 1μPa at 1m)			209	208-218	212-218	208-218	208-218	219	235	223
Pulse Length (msec)				6, 30, 80	6, 30, 80	2, 7, 30, 120	2, 5, 30, 120		1000-2000	1000-2000
Reference	1	2	2	3	3	3	3	3	4	4

Table 1: Evolution of surface ship sonars from the end of WWI until the present time; surface ship echo-ranging systems have evolved since WWI with systems that have lower operating frequencies, higher transmitted power, and longer pulse lengths. Source levels for the QHBa, AN/SQS 10, AN/SQS 4 series, and AN/SQS 29-32 that were estimated assumed values reported in references 2 and 3 are the acoustic power, not the input electrical power. If the reported values are electrical power, then the calculated source levels would be low. The calculation for source level is SL (dB re 1μPa at 1 m) = 171.5dB + 10log (Pwr)[26]

The AN/SQS-26 and its solid-state successor, the AN/SQS-53, are the current standards for US tactical MFAS. The AN/SQS-53 began delivery in 1972. The latest version is the AN/SQS-53C, which was evaluated and tested from 1986 to 1989. Evans & England documented AN/SQS-53C centre frequencies at 2.6 and 3.3kHz.[22] Several foreign navies employ the AN/SQS-26.[23] Another commonly used surface ship active sonar is the AN/SQS-56 and the export version, the DE 1160B, which operates at 5.6, 7.5, and 8.4kHz.[24] The AN/SQS-56 was approved for service use in 1980. By 2003, 33 systems were in use by the US Navy, and approximately 63 systems were in use in foreign navies.[25] Table 1 summarises this evolution of surface ship sonar. Surface ship echo-ranging systems have evolved since WWI with systems that have lower operating frequencies, higher transmitted power, and longer pulse lengths. Table 2 lists the distribution of vessels capable of sonar use in each major era.

Date	Era	Destroyers	Frigates	Patrol	Totals
August 1945	End of WWII	377	361	1,204	**1942**
June 1957	Pre Sputnik	253	84	12	**349**
June 1963	MFAS in Service	222	40	0	**262**
June 1975	End Vietnam	102	64	13	**179**
September 1990	End Cold War	57	99	6	**162**
2009	Present	54	30	0	**84**

Table 2: Number of US Navy combatant ASW platforms from the end of WWII to the present time; derived from US Naval History and Heritage Command (2009)

Although advances in passive acoustics during the Cold War promulgated the increased use of passive sonar technologies, MFAS has remained standard equipment on almost all frigates and destroyers with ASW missions. In the 1970s, as submarines were equipped with intercontinental ballistic missiles, the development of long-range passive sensors was accelerated.[27] However, as both nuclear and diesel-electric submarines operating on batteries became progressively and simultaneously quieter and faster, and thus more difficult to detect in a timely manner, the US and its NATO allies also began to pursue alternatives to passive acoustics, resulting in the development of low-frequency active sonars (LFAS) systems in the 1990s through to the first decade of the 21st century to achieve greater submarine detection ranges. Tyler and Pengelley & Scott provide summaries of the current LFAS systems being developed by various nations.[28]

Since the end of the Cold War, the US Navy's operational focus has shifted increasingly to littoral warfare.[29] Littoral warfare, as defined in the National Research Council publication, *Coastal Oceanography and Littoral Warfare,* is the use of combined forces designed for coordinated sea-land-air operations.[30] This publication categorises the littoral regime as consisting of four subdivisions: (1) harbours and approaches, (2) straits and archipelagos, (3) the surf zone, and (4) the continental shelf.[31]

To give the reader unfamiliar with military exercises some idea of the range and focus of a typical array of US and multinational exercises and the type of equipment used by global navies, information is available at the websites that follow:

Official US Navy Websites:

> A Program Guide to the US Navy (2000 ed.):
> www.chinfo.navy.mil/navpalib/policy/vision/vis00/contents.html

> National Technical Information Center:
> www.ntis.gov

> US Navy:
> www.navy.mil

> US Fleet Forces Command:
> www.cffc.navy.mil

Non-Official Websites:

> Federation of American Scientists:
> www.fas.org

> Global Security:
> www.globalsecurity.org

The US Navy's range complexes provide an environment for US forces to conduct realistic combat-like training. A comprehensive description of the type of training exercises conducted on these range complexes can be found in the Range Complex Environmental Impact Statements that has recently been published. The text of this for three of the major range complexes can be found at the following sites:

> Southern California:
> www.socalrangecomplexeis.com/default.aspx

> Hawaii:
> www.govsupport.us/navynepahawaii/hawaiirceis.aspx

> Atlantic Fleet Active Sonar Training:
> http://afasteis.gcsaic.com

Discussion

The advent of the submarine, which was a major threat to Allied security in WWI, WWII and the Cold War, drove the development of sensors to detect them. Sound uniquely penetrates ocean waters for long ranges, and changes to a sound signal as it propagates were therefore exploited as key cues that could be used to image the otherwise impenetrable depths. Acoustic echo-ranging research led to sonars with increasingly lower frequencies and increased transmitted power. The evolution of surface sonars, shown on a timeline in Table 1, culminated with today's MFAS.

Although each new sonar had more power than previous ones, it can be argued that the US Navy is putting considerably less noise into the water than it did at its peak force levels at the end of WWII. As can be seen in Table 2, the number of US Navy combat ships has been reduced by two magnitudes, almost 96 per cent from its force levels at the end of WWII – that is, 84 ships today compared to 1942 ships in 1945. Additionally, today's ships are designed and built to be quieter than WWII vintage ships and can regularly employ passive and, when needed, active sonars.[32] In the years between WWII and the early 1970s, surface ships had no passive ASW sensors and had to use active sonar exclusively. Today's ships have improved passive sensors.

When considering the amount of noise put into the seas by US Navy ships, it is useful to consider also that from WWI through the early 1970s, all US Navy ASW combatants and many auxiliary vessels were equipped with depth charges. Dropping depth charges off the stern via a rack or track was standard practice for ASW vessels in both World Wars. The US built over 600,000 depth charges during WWII, and over half of these depth charges were still on hand when hostilities ended. Each Mark 6 (redesigned from the Mark 3) depth charge, commonly used during most of WWII, had nominally the equivalent explosive power of about 136kg of TNT.[33] An operating manual for the Mark 6 and Mark 7 depth charges was published in 1943.[34] It was standard policy for ships equipped with depth charges to be required to fire a full salvo (up to 30 rounds) every training cycle (yearly). These training evolutions were generally conducted near home ports, especially Norfolk and San Diego. Depth charges were phased out of the US Navy in the early 1970s, having been replaced by homing torpedoes.[35]

Commercial active sonars, designed for detecting underwater objects, are a source of anthropogenic noise. Typically, they operate at higher frequencies, project lower power, and have significant spatial resolution with narrower beam patterns and short pulses.[36]

MFAS is the primary ASW sensor on US Navy combatants today. The frequency range of these sonars is low to exploit lower propagation loss than at higher frequencies, and the transmitted power is higher to exploit longer ranges. They are ubiquitous, employed by virtually every navy in the world. Data for US Navy ships suggest that while current MFAS are broadly employed or, rather, deployed and have higher source levels than the original sonars in the first half of the last century, fleet sizes of major navies have

been steadily decreasing. Thus, while MFAS are clearly a continuing and important technology for these navies, their contribution to the total sound budget of the oceans is likely to have declined over the last 70 years. To fully understand the implications of the fleet size and technologies involved as they evolve over time will require more explicit analyses than this basic history provides. However, it does give a perspective for how sonar and its sound parameters have evolved during a time period in which we have also become increasingly aware of marine mammal populations, strandings, and a potential role of human sound impacts in those events.

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Sealing the Strait: An Analysis of Iran and the Gulf Cooperation Council in the Strait of Hormuz

Ms Shannon Alexander

The Strait of Hormuz is a relatively unremarkable geographic feature, and to those unfamiliar with its commercial and strategic significance, is little more than a channel of water linking the Persian Gulf to the Indian Ocean. Yet this narrow strait is in fact much more than simply a connecting body of water. Indeed, it is a potential site for hostile military confrontation.

Nearly 40 per cent of all global energy supplies traverse the strait to various destinations, rendering the safety of both exports and imports vital to the stability of the global economy. Iran, lying to the north, is acutely aware of the power it yields in the strait. It has certainly made no secret of its readiness to seal the channel, particularly if a United States (US) or Israeli military attack on its nuclear facilities (suspected nuclear weapons enrichment sites) was to occur. It is uncertain what policy objective would be fulfilled by this action, given the harm Iran would incur on its own economy, and the high risk of political isolation associated with any disruption of energy exports. Nevertheless, Iran has invoked the threat of blocking the strait as its only real tool of deterrence against the feared political and ideological ambitions of the West.[1]

If Iran were to carry out this threat, the US has made it clear it would respond with military force. The question then remaining is how the Gulf Arab states would react; a matter riddled with conflicting considerations and far from simple to answer. It is also complicated by the reality that both Iran and the US would hope to entice the Gulf Cooperation Council (GCC) states to back their operations through a campaign of intimidation. The fact is, the GCC is not a coherent strategic body: the member states lack common capacities, attitudes, and inclinations towards a military conflict with Iran. This has proven particularly true in situations short of an all out war in the region.

However, as a sub-regional body the GCC would face a number of possible options, including allying with the US against Iran, remaining publicly neutral in an effort to preserve relations with both sides, or stepping out as an individual military bloc in defence of mutual GCC interests. If Iran were to partially close the strait, it is possible that the Gulf States would opt to privately support an international effort whilst projecting a stance of impartiality. Although the GCC members are more readily allied with Washington than with Tehran, they would not want to antagonise Iran as they must live with it as a regional neighbour. And though they are suspicious of Iranian hegemonic ambition, the GCC is deeply aware of Iran's significance as a strategic

partner (Dubai also maintains a substantial trade relationship with Iran). Thus the Gulf Arab states, given their present military capacities and the absence of a unified defence policy, would support a move to internationalise a closure of the Strait of Hormuz, in the hope that international forces would overwhelm Iranian aggression.

However, if Iran were to completely close the strait to all non-Iranian shipping, it is most likely that the Gulf States would unite behind the US and its allies. In such a critical scenario, the GCC would have limited options for the export of their energy supplies out of the Gulf, and it is unlikely that they would remain neutral. The smaller states might be hesitant to commit too much to a conflict, yet with air and naval bases in the region, the US would be able to respond fast and with vigour.

A conflict in the strait might encourage the GCC to reinforce its collective security strategy. The GCC does not have significant deterrent power against Iran, nor does it have the military capacity to enter into a conflict alone. Yet although the prospects for Gulf security cooperation in the next decade are slim at best, the potential for an integrated defence strategy is not an improbable objective. For this to be a reality, the GCC states must first resolve their internal problems, then work to improve and harmonise their military infrastructure. This will be essential if the GCC is to build status on the international stage as a valuable deterrent to Iranian belligerence, and as a body able to influence security in the Gulf region (without being propped up by external military powers).

Background

> If the Americans make a wrong move toward Iran, the shipment of energy will definitely face danger and the Americans would not be able to protect energy supply in the region.
>
> Iranian supreme leader Ali Khomeini, 4 June 2006[2]

In recent years, the ongoing standoff between the Islamic Republic of Iran and much of the international community over its suspected nuclear weapons program has consolidated the concern that Tehran will move to block energy exports through the Strait of Hormuz, either to exercise leverage in negotiations or in response to a strike on its nuclear facilities. Indeed, Iran has not withheld from declaring this threat on the world stage. However, it is generally assumed that Iran would only seek to genuinely close the strait if it felt severely threatened, as a closure would almost certainly be disastrous for Iran on the economic, political and military levels.

Purpose

The circumstances prompting Iran to disrupt energy traffic through the Strait of Hormuz are important for discussion and worthy of analysis in their own right (indeed they have been covered substantially in relevant literature). The aim of this report is to consider the capacity of Iran to exercise this action, and more extensively, to analyse the probable reactions of the Gulf States. It will assume Iran has sealed the strait in accordance with its current capabilities, and so address how the Gulf Arab states would respond in this critical hypothetical scenario. Further, it will seek to highlight the complexity of Gulf State cooperation in dealing with Iran, and whether a collective and uniform response is even likely. The author aims to brief a general audience with little assumed knowledge of the scenario – the very specific technical aspects of a military confrontation are complex and not within the scope of this report.

Structure

Part one will detail the geography of the strait, its commercial and strategic significance, territorial claims to islands within the channel, and the presence of military forces in the region. It will then present a background to the geopolitical context of a conflict, including the economic and political consequences of Iran closing the strait. It will also describe Iran's military capacity to do so. Part one will conclude with a discussion of the international impact of a closure, including the implications for the global economy, Shiite rebellion in support of Iran, and the socio-economic impact on the GCC states. It will briefly consider the ways in which the consequences on the global oil trade could be mitigated by the GCC oil and gas producers.

Part two is concerned with the probable reactions of the Gulf Arab states, namely those of the GCC. It will first detail the attitudes of the Gulf States towards Iran, and how these will serve to influence their respective reactions. It will then analyse the GCC as it stands today, and critique the existing levels of cooperation. Next, assuming Iran chooses to close the strait to all non-Iranian shipping, the report will outline the most likely course of action the GCC will take. It is important to remember that the GCC leaders would be at pains not to reveal their stance on such sensitive strategic matters, and at best it is only possible to engage in informed speculation of their reactions given historical precedents and strategic considerations. The report will conclude with a discussion on how the international community might mitigate the chance that Iran would seal the strait, and an analysis of the prospects for security cooperation between the Gulf States.

Methodology

Extensive qualitative research contributed to the findings of this report. The majority of sources included geo-political analyses by specialists in the areas of foreign policy, energy security, the Persian Gulf, Iran, the Gulf Arab states, and US military activity in the Gulf, from centres in the Middle East to the US. The author also conducted talks with specialists in the areas of Persian Gulf politics and security. Statistical data of energy reserves, production, consumption, and trade was considered from sources including the US Energy Information Administration, the International Energy Agency, and the BP *Statistical Review of World Energy*. Topical news articles were used as secondary sources.

Given the speculative nature of the topic, the conclusions drawn are based on current strategic analyses and opinion, as well as historical examples as they relate to current international relations. Such an analysis admittedly has limitations: it cannot utilise classified information, and cannot make official assertions regarding the intentions of Iran, the GCC or the US.[3] However, the author hopes that the conclusions of this report will contribute to public debate vis-à-vis a conflict in the strait.

PART ONE

The Strait of Hormuz

The Strait of Hormuz, arguably the world's most critical chokepoint in the shipment of crude oil, links the Persian Gulf with the Indian Ocean via the Gulf of Oman and the Arabian Sea.[4] A narrow, arched channel, it is hugged by Iran to the north and the Musandam Peninsula of Oman to the south. The coastline of the United Arab Emirates (UAE) is the second-longest in the Gulf (420nm), and borders the western entrance to the strait.[5] The Strait of Hormuz is approximately 100nm long and 21nm wide at its narrowest point, with an average depth of 50m.[6]

Commercial importance

Described as the 'highway of seaborne oil', energy exports continue to define the economic significance of the strait.[7] Roughly 88 per cent of all oil leaving the Gulf is transported through the strait aboard tankers carrying approximately 17 million barrels of oil per day. This equates to roughly 40 per cent of the world's internationally traded oil, making the protection of energy exports through the strait an issue of global concern.[8] In addition to oil, all liquefied natural gas exports from the Gulf are shipped via the strait.

Freighters also deliver civilian commodities and armaments to Iran, Saudi Arabia, Bahrain, the UAE, Qatar, and Kuwait.[9] In August 2006 Bahrain became the first GCC state to establish a Free Trade Agreement with the US, and in 2009 imported US$463.5 million worth of goods including foodstuffs, industrial equipment, automobiles, and military apparatus.[10] Iran imports foodstuffs and pharmaceuticals from the US, as well as refined petroleum it cannot produce (approximately 130,000 barrels per day (b/d)).[11] Indeed, whilst the world's attention is often focused on the level of exports from the region, for the GCC and Iran the safe passage of imports is just as critical as the protection of their exports.

Rules of transit

All transit through the strait occurs under the provisions of the *United Nations Convention on the Law of the Sea 1982* (LOSC), in which section 2 details the rights and duties of transiting vessels.[12] The passage of commercial traffic is coordinated through a Traffic Separation Scheme (TSS) recognised by the United Nations (UN) International Maritime Organization. The TSS is designed to reduce the risk of maritime traffic accidents and is included on nautical charts.[13] It consists of two 40km long shipping corridors, each 3.2km wide and separated by another 3.2km wide buffer. Located within its territorial waters, Oman is officially responsible for the protection of shipping along these sea lanes.[14] However, transit through the strait is not restricted to the TSS, and the depth of the water is great enough for large tankers to pass through closer to the Iranian coast. An 80km long separation scheme is located further within the Persian Gulf, regulated by Iran from the islands of Greater Tunb and Forur.[15]

Islands within the strait

In 1978, an officer of the Supreme Commander's staff under the Shah of Iran noted the strategic importance of a cluster of islands located within the western approach to the strait.[16] Iran continues to have a fierce tactical interest in controlling these islands, four of which are particularly suitable for influencing the shipping lanes: Abu Musa, Greater Tunb, Lesser Tunb, and Forur.[17] During the Iran-Iraq war of 1980-88, Iran used Abu Musa as a base to attack ships belonging to Iraq's trading partners or countries financially backing the Iraqi war effort.[18] The anti-shipping campaigns of Iran and Iraq were labelled the 'Tanker War' (1984-88); a conflict often analysed as a model in the event of a future conflict in the strait.[19] Abu Musa is also a valuable resource, containing half a billion barrels of oil and rich in gas and red iron dioxide.[20] Greater and Lesser Tunb are considered to be strategically located in the perceived line of defence of the strait. Abu Musa and the Tunbs have been dominated (and fortified) by Iran since 1971, despite years of territorial contestation with the UAE.[21] Formally, the UAE has co-sovereignty over the islands, and tension regarding their status continues to strain bilateral relations.[22]
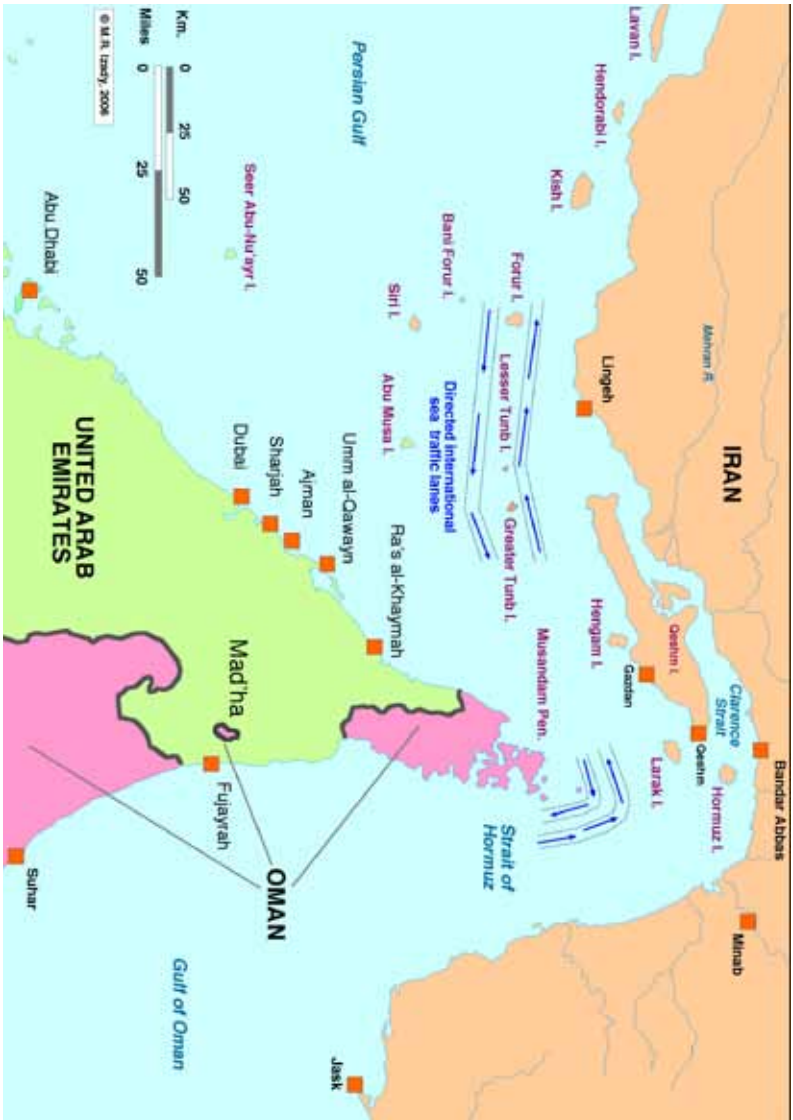
*The Strait of Hormuz, the Traffic Separation Scheme (right)
and the Gulf shipping lanes (left) (Columbia University)*

Military presence

A number of armed forces have a presence within the Gulf and the Strait of Hormuz. The US maintains elements of the US Coast Guard and the US Navy's Fifth Fleet (the naval component of Central Command, headquartered in Bahrain).[23] The Fifth Fleet provides 'mariner assistance, protection of infrastructure, piracy deterrence, and combat operations'. The US admiral in Bahrain commands both the Fifth Fleet and coalition naval forces in the Gulf. In addition, a coalition commodore is directly in charge of coalition maritime forces.[24] Around 30 US warships patrol the Persian Gulf and regional waters.[25] The US also has an Air Force base in Qatar.[26]

In 1977 the US officially established a Navy Support Facility on the island of Diego Garcia, located approximately 870nm south of India in British Indian Ocean Territory. The base is an important centre for the support of US military units in the Indian Ocean and the Persian Gulf, comprising a communications station, maritime prepositioning ships, and Military Sealift Command.[27] During the 1990-91 Gulf War NAVSUPPFAC Diego Garcia provided heightened support for US operations in Operation DESERT STORM, deploying the Strategic Air Command Bombardment Wing.

In 2009, French President Nicolas Sarkozy opened 'Peace Camp' in the UAE, France's first military base in the Gulf. Situated on the shores of the strait, the base accommodates 500 troops and operates a navy and logistical base in Abu Dhabi, a desert aviation detachment at Al Dhafra and a training camp.[28] At the opening, Sarkozy stated that 'France is ready to shoulder its responsibilities to ensure stability in this strategic region'.[29]

Multinational task forces also operate in the Gulf. Combined Task Force (CTF) 150 is a force of warships operating within an area of over two million square miles from the Red Sea to the Indian Ocean. Its mission is to counter terrorism and smuggling and to develop a 'lawful maritime order'.[30] Pakistan, Canada, France, Germany, Denmark, Australia, the United Kingdom (UK) and the US have all provided warships to the force. The Iranian Navy has at times demonstrated agreeable working relations with CTF 150, such as in 2001 when it cooperated with Australian and British ships to counter the Iraqi oil-smuggler *Seawind*.[31] Created in 2004, CTF 152 conducts Theatre Security Cooperation Activities and Maritime Security Operations with all GCC states to combat destabilising activities in the Gulf.[32] In January 2009 another multinational task force, CTF 151, was established to perform counter-piracy operations in the Gulf of Aden and off the coast of Somalia. Its mission is to 'deter, disrupt and suppress' piracy for the protection of maritime security and freedom of navigation.[33]

Iran: Options, Consequences and Capabilities

> Our surface-to-sea missile systems can now reach the breadth and length of the Persian Gulf and Oman Sea. No boat or vessel can pass in the Persian Gulf without being in range of our surface-to-sea missiles
>
> Former Commander of the IRGC General Yahya Ramin Safavi,
> 15 August 2007[34]

It is commonly assumed that Iran would only seek to block the Strait of Hormuz, either incrementally or fully, if the regime faced a truly 'existential threat'. Indeed, such action would provoke quick and severe retaliation from the US and coalition states, and Iran would likely suffer acute military losses.[35] Impeding maritime access to the strait would also serve to isolate Iran from countries it actually wants to befriend or maintain relations with, such as China, India and the GCC states. There is also the question of Iran's actual ability to close the strait, and for how long. Perhaps at best, Iran is only capable of 'disrupting' activity in the passage. In June 2008, the Commander of the Islamic Revolutionary Guard Corps (IRGC) Muhammad Ali Aziz Jafari stated that Iran's aim would be to 'control' rather than 'block' the strait if it were to enter into military confrontation with the US.[36]

The impact on Iran

Through the Strait of Hormuz flows Iran's economic lifeblood. Iran possesses the world's third largest oil reserves (132 billion barrels) and the world's second largest reserves of natural gas (970.8 trillion cubic feet (cf)).[37] It is the world's fourth-largest exporter of crude oil, exporting 2.65 million b/d according to 2008 estimates.[38] Iran is therefore heavily dependent on the strait for both exports and imports of refined products it cannot produce.

Indeed, any self-initiated cut in exports would risk grave economic and domestic political costs. Over 90 per cent of government income is generated from oil exports: the public depends on subsidies for fuel and commodities, and the pressure from the current generation is high and unforgiving.[39] When Iran rationed gasoline in June 2007, local rioting against the government took place in Tehran and other cities.[40] Theoretically, in light of continued public demonstrations against it, the incumbent government would be less inclined to aggravate an already restless populace. Given these details, Iran would have more success in realising its objectives - namely regime survival, 'consolidation of the revolution', and regional hegemony - through simply 'threatening' to close the strait, rather than actually doing so.[41] Blocking the strait would probably result in political isolation, economic disaster, and military fatigue, rendering the threat itself most useful as a tool of deterrence and intimidation in the regional balance of power.[42]

Alternatives

Iran specialist Michael Connell of the US Center for Naval Analyses notes that there are less extreme actions Iran might take to achieve its objectives whilst complying with sanctions.[43] One such action could be to surreptitiously mine the entrances of the strait - or the harbours and shipping lanes on the inside of the Gulf, as it did during the Iran-Iraq War - and claim 'plausible deniability'. This tactic was demonstrated in 1984, when a Libyan commercial ship allegedly mined the Suez approaches and the southern end of the Red Sea, damaging 19 merchant vessels. This act of terrorism created panic, caused insurance prices to increase, and served Libyan President Qaddafi's objective of solidarity with Iran in the Iran-Iraq War.[44] Simon Henderson of the Washington Institute for Near East Policy suggests that Iran could sponsor the sabotage of oil facilities belonging to Gulf producers. In both of these cases, it would prove difficult for adversaries to justify immediate retaliation (assuming Iran cannot be directly tied to any attacks), yet the incurred possibility of danger would create anxiousness over commercial shipping, cause insurance prices to escalate, and grab the world's attention.[45]

Asymmetric warfare

In the event of conflict with the US, Iran is conscious of its inferior tactical and operational strength. Thus it has relied on the projection of an asymmetric warfare doctrine, including unconventional warfare techniques such as swarming.[46] Maritime suicide attacks have also proven reasonably effective, as demonstrated by the USS *Cole* incident in 2000, when a US Navy destroyer was attacked by a small craft during a refuel in the port of Aden, Yemen.[47] RAND analysts argue that Iran exaggerates levels of military prowess and technological expertise, namely through the Iranian and Arab press, to assert this asymmetric doctrine.[48] It also conducts showy exercises in the Gulf and the strait to demonstrate its declared equipment and capabilities, such as the April 2010 Operation GREAT PROPHET V naval war games conducted by the IRGC.[49]

Assuming an existential threat, Iran could engage in a multi-tiered approach to close the strait, protect its coastline, and harass or attack US naval assets. Mining the channel and utilising anti-ship cruise missiles and fast-attack craft would almost certainly form a central part of Iran's strategy (all used in the Iran-Iraq War).[50] Iran is thought to possess close to 2000 US, North Korean, and Russian-made mines, as well as indigenously-manufactured mines. The International Institute for Strategic Studies *The Military Balance 2010* reports that the Iranian Navy has three Russian-built Kilo submarines, four Ghadir, and at least three Al Sabehat submarines, the latter having mine-laying capacity.[51] In addition, the naval aviation wing has aircraft which can be used for mine-laying and mine countermeasures.[52] Iran might also deploy shore-based cruise missiles such as the Chinese Seersucker and C-801/802 systems, and short-range air launched missiles.[53] The Iranian Navy has over 146 patrol and coastal combatants, including thirteen French-built Kaman guided missile patrol craft, each installed with a medium-calibre naval gun and two to four anti-ship missiles.[54]

In mine warfare, the sower has a psychological advantage: what is important is the number and power of mines Iran publically 'declares' it has sown. Indeed, the uncertainty of mine threat can be just as powerful as the certainty. This is because tanker captains and shipping companies aren't likely to risk damage to their vessels, regardless of the perceived level of risk. (However, it should be noted that many tankers did take this risk traversing the strait during the Iran-Iraq War. Indeed, the level of damage that mines can inflict on a tanker is debatable).[55] It is also increasingly tricky to detect and sweep modern naval mines: the US maintains four ships with mine countermeasure capabilities in the Persian Gulf, yet limited resources are invested in minesweeping equipment and improvement, meaning that innovations in mine design are outpacing advancements in minesweeping operations.[56]

The Global Impact

Blocking the strait to shipping or sabotaging oil installations in the Gulf would invite international condemnation and almost certainly a military response from the US. Stratfor concludes that in the interest of securing 'freedom of the seas', the US Navy would be 'forced to respond aggressively'.[57]

Religious tension

In the event of conflict with the US, there is the real possibility that Iran would incite rebellion amongst Shiite populations in neighbouring countries.[58] Iran might target the Shiite Muslims in Iraq, Kuwait, Yemen, the oil-rich Eastern Province of Saudi Arabia, and in Bahrain where Shiites form a 70 per cent majority.[59] If the Shiite population of Bahrain were to rise up against the royal family, there would be major social upheaval and civil unrest. Al Hamad believes that the security threat born out of the export of Iran's revolution was one reason why the GCC was formed: with a majority of GCC citizens being Sunni Muslims, the Twelver Shiite revolutionary slogans and rhetoric threatened to encourage and inflame religious tensions.[60]

In late 2009, Iranian Foreign Minister Manouchehr Mottaki indirectly denounced Saudi Arabia's support of the Yemeni government's fight against Shiite Houthi rebels in northern Yemen.[61] His threat that 'those who pour oil on the fire must know that they will not be spared from the smoke that billows' was viewed as a warning to Sunni-led Saudi Arabia that Iran is not scared to support, and rally, Shiite followers in regional, religious or ethnic conflict.[62] However, it should be noted that Iran's ability to stimulate unrest among Shiites in the Gulf is perhaps more limited than its revolutionary rhetoric would suggest.[63]

Economic consequences

In the event that Iran mined the strait and imposed a blockade therein, the impact on the economies of the GCC would vary in gravity from state to state. In 2008, the UAE, Kuwait, and Qatar were ranked the third, fifth, and fifteenth highest net exporters of world oil respectively.[64] Oil and gas contribute to 25 per cent of gross domestic product (GDP) in the UAE, petroleum accounts for nearly 50 per cent of GDP and 95 per cent of export revenue in Kuwait, and oil and gas contribute to over 50 per cent of GDP and 85 per cent of export earnings in Qatar.[65] The UAE and Qatar are the Gulf's major gas exporters (Qatar is sitting on approximately 15 per cent of the world's gas reserves), and no pipelines are in place to channel gas outside of the GCC countries.

In a long-term scenario, the Gulf States would soon struggle without export revenues, leading to unemployment for both local and foreign workers, industry retardation and a restive populace accustomed to state-led development. Rentier states would experience an amount of social unrest if oil income were to decline. This is in line with the theory of the rentier state, whereby regimes maintain 'legitimacy' and buy off opposition by providing social welfare for citizens and exempting them from taxes.[66] A disruption of energy exports would then have a corresponding impact on economic activity around the world.

It is generally assumed that if energy exports from the Gulf were indefinitely arrested, global panic would cause shipping insurance premiums to increase, and in turn these prices would be reflected in energy markets (though an increase in oil prices might be mitigated by the release of strategic oil reserves). Although an indefinite closure would be almost impossible for Iran to achieve, some predict a global fiasco: Sreedhar estimates that in the event of a year-long oil cut-off, the world economy would endure economic losses comparable to those of the Great Depression.[67] A closure would be heavily detrimental to those dependent on Gulf energy such as Japan, Korea, Europe and the US.[68] The US imports 35 per cent of its energy supplies from the Gulf, and the European Union imports 56 per cent.[69] A nosedive in oil supplies would then affect the trading partners of these economies. Australia's top bilateral trade partners include Japan, the Republic of Korea and Singapore, which import 83, 82 and 75 per cent of their oil from the Gulf respectively.[70]

Yet there is some debate about how severely a closure would affect the global economy. The Robert Strauss Center hypothesises that the oil market would quickly adapt to a disruption of exports. After an initial slump in the number of ships traversing the strait, and a consequential rise in crude oil prices, suppliers may lower the price of oil to counterbalance higher insurance premiums for transport, as Iran did during the Tanker War.[71] Max Schultz agrees that the American economy is more equipped to withstand an oil embargo than forty years ago. The US Strategic Petroleum Reserve holds upward of 700 million barrels of oil for emergency release, rendering the US economy much more resilient than it was during the 1973 oil embargo.[72]

Million tonnes

To

From	US	Canada	Mexico	South & Central America	Europe	Africa	Australasia	China	India	Japan	Singapore	Other Asia-Pacific	Rest of World	Total
US	-	13.1	17.0	25.4	24.4	1.8	0.8	0.8	0.7	3.6	4.3	1.4	1.6	94.6
Canada	121.7	-	-	0.1	1.6	-	-	†	†	0.1	†	†	†	123.6
Mexico	64.7	1.4	-	4.3	7.7	-	-	-	1.9	-	0.1	-	†	80.0
South & Central America	119.4	1.0	1.3	-	25.2	1.1	-	16.5	5.8	0.1	7.8	0.1	0.1	178.3
Europe	43.4	8.3	5.7	4.8	-	16.9	†	0.2	0.5	1.4	5.3	1.4	9.7	97.6
Former Soviet Union	23.8	1.6	0.2	3.0	318.5	1.1	0.6	22.4	2.0	8.2	5.0	6.6	11.8	404.8
Middle East	119.7	6.3	0.6	5.8	127.6	44.5	5.4	92.0	107.6	196.9	53.1	238.3	3.1	1000.7
North Africa	32.6	8.9	0.2	5.1	101.3	1.0	0.3	4.2	4.3	0.4	0.1	3.1	-	161.5
West Africa	90.9	5.2	†	15.0	49.5	4.5	-	39.1	16.6	1.1	0.1	6.7	0.1	228.8
East & Southern Africa	-	-	-	†	0.6	-	-	10.6	0.8	4.9	0.2	0.6	-	17.8
Australasia	1.8	†	†	-	†	-	-	0.9	0.2	2.6	3.5	6.6	†	15.5
China	0.8	†	-	4.0	0.3	0.4	0.2	-	0.1	1.3	2.1	9.2	0.3	18.8
India	0.3	-	-	1.6	3.3	-	-	0.2	-	1.4	6.8	20.0	0.8	34.4
Japan	-	-	0.5	0.1	1.2	-	2.6	4.9	0.6	-	4.6	2.4	0.1	17.1
Singapore	-	†	†	1.0	2.4	1.6	21.1	4.5	2.9	1.4	-	49.2	0.8	76.0
Other Asia-Pacific	5.3	†	0.6	1.5	2.5	0.5	20.0	21.4	5.8	20.7	38.0	-	0.2	116.5
Unidentified*	12.3	2.5	-	-	14.9	-	1.7	-	-	0.2	-	-	-	13.7
Total Imports	**636.6**	**48.4**	**26.0**	**71.9**	**680.9**	**73.4**	**43.6**	**217.8**	**149.7**	**244.2**	**130.9**	**345.7**	**28.6**	**2697.8**

Thousand barrels daily

From \ To	US	Canada	Mexico	S. & Cent. America	Europe	Africa	Australasia	China	India	Japan	Singapore	Other Asia-Pacific	Rest of World	Total
US	-	270	352	529	508	37	16	16	14	75	89	29	34	**1967**
Canada	2459	-	-	3	34	-	-	†	†	1	†	†	†	**2498**
Mexico	1299	28	-	88	155	-	-	-	38	-	1	1	†	**1609**
South & Central America	2418	21	26	-	509	23	-	334	116	1	163	1	2	**3616**
Europe	900	168	118	100	-	352	1	5	11	29	110	28	202	**2023**
Former Soviet Union	492	33	4	61	6428	22	12	453	40	165	105	133	236	**8184**
Middle East	2398	125	12	116	2564	899	108	1844	2167	3960	1072	4800	64	**20128**
North Africa	665	179	4	103	2039	20	5	83	87	9	2	63	-	**3260**
West Africa	1825	105	1	301	992	90	-	783	332	21	1	134	3	**4587**
East & Southern Africa	-	-	-	†	12	-	-	213	16	99	5	12	-	**357**
Australasia	35	†	†	-	1	-	-	19	3	52	70	132	†	**312**
China	15	†	-	83	6	9	5	-	1	27	43	191	6	**388**
India	6	-	-	32	70	-	-	5	-	30	142	417	17	**718**
Japan	-	-	11	2	24	-	54	103	12	-	97	51	2	**356**
Singapore	-	†	1	22	50	33	250	93	61	29	-	1026	17	**1583**
Other Asia-Pacific	108	1	12	32	52	11	403	442	117	422	786	-	5	**2391**
Unidentified*	252	51	-	-	307	-	35	-	-	5	-	-	-	**650**
Total Imports	**12872**	**981**	**541**	**1473**	**13751**	**1496**	**889**	**4393**	**3016**	**4925**	**2685**	**7017**	**588**	**54626**

* Includes changes in the quantity of oil in transit, movements not otherwise shown, unidentified military use, etc.
† Less than 0.05

Table 1: Inter-area movements 2008 (British Petroleum)

Mitigating the Shock

A worst-case scenario is qualified by the potential of alternative means of transporting energy from the Gulf, plus the production of alternative energies. Saudi Arabia has two pipelines that can transport crude from the Gulf coast to the Red Sea, though they are expensive to maintain and operate. The Petroline has the capacity to carry 5 million b/d to the port of Yanbu off the Red Sea, used to supply European markets. The Abqaiq-Yanbu natural gas liquids line runs alongside the Petroline and as of 2008 had a capacity of 555,000b/d.[73]

In the UAE, contractors China Petroleum Engineering and Construction Corp are currently constructing a $3.29 billion, 400km long oil pipeline leading to the port of Fujairah on the east coast. The Oil Terminal 2 pipeline will transport oil from the onshore Habshan field in the emirate of Abu Dhabi, which pumps roughly 95 per cent of the crude oil in the UAE. Officials expect the pipeline to be operational by the end of 2010, meaning that the UAE could divert up to 78 per cent of its crude oil exports away from the Persian Gulf route. The pipeline will redirect up to 1.8 million b/d away from the Strait of Hormuz, and will save tankers up to 24 hours of sailing time compared to the existing port in the Persian Gulf.[74]

However it should be noted that oil pipeline capacity continues to be limited, and falls drastically short of the 17 million b/d target. Similarly, liquefied natural gas (LNG) pipelines for exporting gas outside the Gulf simply cannot match the level of seaborne LNG traffic. Qatar is the world's leading LNG exporter, exporting close to 911,000b/d (mostly to Japan, South Korea, India and Spain), totalling nearly 2325 million barrels (1.4 trillion cf) in 2008.[75] Even at maximum capacity, the Abqaiq-Yanbu gas pipeline could only transport half of Qatar's daily LNG exports. Nonetheless, if the need arises the GCC states are likely to use the pipelines to full capacity, and due to the perceived threat from Iran, will continue to develop existing pipelines.[76]

PART TWO

The Gulf Cooperation Council

> I and my brother against my cousin, and I and my cousin against the stranger.
>
> Arab Proverb[77]

The above proverb aptly describes the real relationships between the members of the GCC. Although they are likely to overlook their differences in the face of a genuine threat from a non-Gulf power, in less ominous times the members treat each other with varying degrees of suspicion, and nearly all notable achievements are bilateral rather than collective agreements. Border disputes have particularly undermined the

potential for greater accord between the states. Indeed, the real possibility that oil might lie anywhere beneath the land or sea has prevented the establishment of any standing agreement to accept the colonial borders.[78]

Founded in 1981, the GCC includes Saudi Arabia, Bahrain, the UAE, Kuwait, Oman and Qatar, and operates as a regional consortium with collective security responsibilities. The Basic Law of the GCC stipulates that members must-cooperate in 'all fields'; the grand aim being broader political unification in a single state. However, since its inception, it has become clear that the GCC is in practice little more than a loose security institution based on needs for survival. Indeed, if the member states agree on one objective, it is to maintain the 'status-quo continuity' of their political regimes.[79]

Al Hamad agrees that the efficacy of the Council is dependent on the fear of threats.[80] However, the member states often differ in their perceptions of internal and external threats and vulnerabilities, due to the various political, economic, dynastic, tribal, territorial, and jurisdictional differences between them. For instance, Bahrain sees Iran as its major external threat: 70 per cent of Bahraini citizens are Shiite and suffer from harsher economic conditions in Bahrain, rendering them more receptive to Iran revolutionary rhetoric.[81] In contrast, Kuwait continues to fear territorial expansion from Iraq, an anxiety not shared by Oman and the UAE on the eastern side of the peninsula.[82] The UAE is more concerned with condemning the Iranian occupation of Abu Musa and the Tunbs.[83]

The GCC Peninsular Shield

The GCC Peninsula Shield was created in 1986 as a land-based force of 9000 troops stationed in Saudi Arabia. The base at King Khaled Military City was disbanded in 2005-06, an event that highlighted the largely symbolic nature of GCC defence cooperation and the reliance of the GCC on external defence forces. In 2008 the Shield was officially re-established as a quick-reaction force of 22,000 troops based in their home countries, to be administered by the GCC Secretariat.[84] In the event of a crisis, personnel would be marshalled in the concerned region, and if needed the GCC states would deploy further troops under their own national flags. The renewed force would include air and naval power organised according to the capacity of each member state.

Yet a destabilising weakness of the Shield is the lack of consensus over what the alliance should defend against. In addition, Kuwait, Oman, and the UAE demand the right to command the force (rather than Saudi Arabia) once it enters into their respective territories.[85] This reflects the fear of the smaller states that Saudi will gain too much power in a comprehensively integrated defence strategy; a fact that continues to limit their cooperation. These states view the intervention of external powers as preferable to Saudi hegemony in a combined defence policy.[86]

Saudi Arabia

Assessing the reaction of Saudi Arabia to an Iranian challenge is complicated by conflicting considerations. The US withdrew from its Saudi Arabian bases in 2003, and the government would be hesitant to welcome an overwhelming US military presence in the region. Though they remain allies (Saudi recently refused offers of intercontinental ballistic missiles from China so as not to strain the US relationship), the Saudi government is wary of appearing too supportive of US operations in the region lest this aggravate an already restive population.[87] As such, the regime might be more supportive of UN involvement rather than a US-controlled intervention.

In addition, Saudi Arabia sees Iran as a long-term threat because of its traditional territorial and power ambitions. Leaders view the threat of Iran's nuclear program and leverage in the Strait of Hormuz as challenges that must be 'managed', in contrast to typical US policy to 'solve' the Iranian problem as fast as possible. Put simply, Saudi does not want the US to intervene with a short-term response bringing long-term consequences. For this reason, the government might encourage external powers to commit to managing the Iranian threat in both war and peace time contexts.

However, Saudi Arabia and Iran have long struggled against each other for the role of regional hegemon, and it would be expected to encourage the repression of Iranian power objectives. Accordingly, in the scenario of a conflict in the strait, Saudi would likely support a strategy that would overwhelm Iran as fast as possible.[88] At the November 2007 GCC meeting in Riyadh, Saudi Vice-Minister of Defence Prince Abdulrahman bin Abdul Aziz declared: 'because of the threats we face, we have to work hard to develop our armed forces to make them capable of providing regional stability and safety for energy resources'.[89] This demonstrated the government's willingness to develop indigenous and regional forces to build a viable defence structure in the Gulf, which if credible could constitute a significant challenge and even deterrent to Iranian aggression. The US is supporting Riyadh's plan to expand a Saudi force that protects ports, oil facilities, and water-desalinisation plants in the kingdom from 10,000 to 35,000 men.[90]

Kuwait

Kuwait is particularly concerned with ensuring the Gulf States work together to deter Iranian aggression (justifiably so after the Iraqi invasion of 1990). In 2007, Washington promised a US$20 billion arms package to the Gulf States, interpreted by many as an attempt to reinforce Gulf Arab defence systems and discourage Iranian belligerency.[91] In February 2010, Kuwaiti Member of Parliament Ma'suma Al Mubarak defended the right of the Gulf States to build up their military capabilities, notably Patriot missile systems. She stated that 'in light of US and Israeli threats against Iran, the Gulf States must develop their own security systems, so as not to become caught in the vise [created

by] the US and Iran'.[92] She emphasised that the development of their defence systems was a precautionary measure, not a provocation against Iran, and that the GCC did not intend to allow their land to be used as a base to strike Iran.[93]

Kuwait is also concerned with ensuring oil exports can continue for a reasonable period should Iran close the strait. It has signed an agreement with the Republic of Korea allowing it to stockpile crude oil in the Republic, and the head of state-run Kuwait Petroleum Corp confirmed that Kuwait and other Gulf States have planned to develop similar precautionary measures to safeguard their exports.[94] In 2008 Kuwait conducted talks with Japan and Vietnam to construct refineries for Kuwaiti oil (scheduled to go online by 2013), and has plans to invest in a joint refinery and petrochemical facility in southern China. By encouraging these Asian states to invest in Kuwait's oil production capacity, Kuwait might be hoping to increase the level of condemnation directed at Iran were it to block the straight to oil exports.

The United Arab Emirates

The UAE tends to view Iran's influence in the Gulf in a negative light, and continues to be on shaky terms with Iran regarding the status of the three islands: Abu Musa, Greater Tunb, and Lesser Tunb. Its military procurement program is arguably focused on countering the perceived Iranian threat: in the past two years, the UAE has purchased more than US$15 billion in US arms.[95] However, the emirate of Dubai and Iran have a strong economic relationship which both would be concerned to preserve. Specifically, Dubai and Iran trade around US$14-18 billion annually, and their trade relationship has allowed Iran to circumvent international sanctions.[96] Theodore Karasik, research director at INEGMA, has said there are procurement networks in Iran using suppliers in the UAE to obtain US-manufactured military equipment. This is in direct violation of a US embargo of such products to Iran.[97]

Qatar

Qatar's relatively amiable relations with Iran are well-noted, and criticised, by regional actors. In recent years Qatar has been accused of financially and politically supporting the Palestinian resistance group Hamas (also backed by Iran and Syria). In early 2009, Egypt criticised Qatar's 'pro-Iranian' stance as hypocritical given its defence ties with the US. Indeed, Qatar's ostensible 'courtship' of Iran has served to emphasise rifts between the Gulf States and the broader Arab Middle East. It is accused of desiring greater power in the Gulf by seeking greater ties with Iran.

However, Qatar is also aware that it is not guaranteed safety from Iran if conflict erupts in the Gulf. In January 2010, Qatar agreed to an upgrade of US anti-missile defence systems in the Gulf, along with Bahrain, the UAE, and Kuwait, demonstrating its readiness to bolster Arab defences and deter Iranian hostility.[98] However, signed

defence agreements with the US should not indicate that the GCC is ready to take sides. In March 2010, speculation surfaced that Qatar, Oman and Kuwait had signed bilateral security pacts with Iran, forbidding the use of their territory for launching attacks against it (whether this included attacks by external powers is unclear).[99] This in turn is complicated by the presence of the US Air Force at Al Udaid, where US Central Command has a forward headquarters, demonstrating the balancing act that the Gulf States must play to appease both the West and Iran in peacetime.

Bahrain

Bahrain hosts the US Navy's Fifth Fleet (US Naval command has maintained a presence in Bahrain since February 1948), and as a close US ally has strained political relations with Iran. These have not been tempered by international condemnation of Iran's suspected nuclear enrichment program. Indeed, Bahraini officials have stated their suspicions that Iran is violating its non-proliferation obligations, and in 2007 Bahrain rejected Iran's offer to support its own nuclear energy program. Retired US Navy Vice Admiral Charles Moore Jr quotes the late ruler Sheikh Essa bin Salman Al Khalifa:

> The ships and aircraft of the Fifth Fleet are a mountain of fire that separates us from the Iranians, and that presence of naval forces is what has given us peace and prosperity.[100]

In February 2009, Ali Akbar Nateq-Nouri, adviser to Supreme Leader Ayatollah Khomeini, purportedly claimed sovereignty over Bahraini soil, rekindling past tensions over Iranian territorial ambitions. Tehran proceeded to deny the claim that Bahrain was once the 14th province of Iran; however Bahrain chose to freeze LNG negotiations and banned Iranian vessels from Bahraini waters.[101] The two countries had been in bilateral talks to establish a gas agreement whereby Bahrain would import around one billion cf of LNG per day from Iran's South Pars field. Bahrain only reopened discussions once Iranian Foreign Minister Mottaki travelled to Bahrain and offered an official apology.

This instance reinforced the mistrust between Sunni-led Arab states and Shiite Iran – Saudi Arabia is particularly concerned with the power of Iran to influence Shiite Muslims in the GCC countries as well as Iraq, Lebanon and the Gaza Strip.[102] Yet like its GCC counterparts, Bahrain is concerned with accommodating Iranian interests to deter aggression. It recognises that Iran will always be a major component of the geo-political landscape in the Gulf, and therefore greater diplomatic ties and agreements (including business and banking concessions) are important for maintaining regional stability.[103]

Oman

Oman's position on Iran diverges somewhat from that of its Gulf neighbours. It is possible that Oman would avoid heavy involvement in a conflict vis-à-vis Iran in an effort to preserve bilateral relations. Any military conflict would probably be short-lived,

and Oman is acutely aware that subsequent to any conflict, it will need to interact with Iran as an economic partner and ally. Disengaging itself from, or making only a minor contribution to, a conflict would prove easier for Oman because it exports all its energy from a port off the Arabian Sea. One example of Oman's hesitance to irritate Iran is its rejection of a plan to construct a pipeline stretching from Saudi Arabia, across Oman to the Arabian Sea. Such a development might offend Iran as it would expand the capacity of alternative energy supply routes.

Possible Scenarios

In a scenario short of an all out war, where Iran might have a limited confrontation with US naval forces in the strait, the GCC would likely maintain a low profile whilst observing events as they unfold. Indeed, their socio-economic stability and future political and economic relations with Iran would be dependent on minimal stated involvement in a conflict.[104] Thus the GCC would privately urge the US to maintain a tough stance against Iran, whilst publicly advancing a neutral posture to avoid the wrath of Iran. This would necessarily include providing the US with access to Gulf bases and overflight rights, with the assumption that it would not publicise this access.

In the event that Iran successfully developed nuclear weapons, analysts are divided regarding the willingness of the Gulf States to host military contingents on their shores. Whilst Henderson argues that the Gulf would be off limits for US aircraft carriers and naval ships, Connell believes that the Gulf States would not reduce their dependence on the US, which could not be prevented from entering the Gulf under LOSC clauses governing freedom of navigation.[105] (Such debate demonstrates how different assumptions create distinct predictions about a conflict in the strait, which may in turn influence different policy recommendations.)

A regional wartime scenario

However, if Iran were to completely close the sea lane to maritime traffic, it is unlikely that the GCC would remain neutral. An analysis of the GCC reactions will now be based on the following scenario:

> Provoked by a severe or existential threat, Iran carries out plans to incrementally block, with the hope to control, the flow of energy exports through the Strait of Hormuz. Both the Navy and the IRGC achieve this by mining the approaches - perhaps exaggerating public statements of the number and type of mines used - and mobilising small craft equipped with anti-ship missiles. Iran is successful in temporarily impeding maritime traffic due to the damage inflicted on oil tankers and the ensuing uncertainty of risk. This is not only a maritime issue, but a global energy concern, prompting the US to intervene with a

military response - on behalf of the world - in defence of the sea lanes. What follows is a two week military confrontation between Iran and the US (and allies).

With naval and air bases in the Gulf, the US is able to respond fast and with vigour. The US intervention includes mine clearing operations in the strait and warfare against Iran.[106] (Military experts estimate that securing the strait would take at least one month).[107] As the conflict progresses and Iran feels the impact of superior US tactical and operational capabilities, it aims to heavily damage or sink a US warship, and attack US military installations such as the Fifth Fleet HQ in Bahrain. It is feared that Iran might also target water desalination plants along the southern shores of the Gulf, which provide over 60 per cent of the drinking water needed by the Arab Gulf States.[108]

In this critical scenario, the GCC would collectively aim to protect mutual commercial, territorial and political interests by uniting behind the US and its allies.[109] Historically, the Iran-GCC relationship has been one of significant mistrust regarding motive and intent. Iranian missile tests, the suspected nuclear weapons enrichment program, and support for Hamas, Hezbollah and Islamic Jihad have all served to heighten unease among the GCC states.[110] As such, the GCC has generally desired to internationalise regional security to gain the commitment of a broad range of external actors (a sort of insurance policy for their survival).[111]

The smaller GCC states would also want to avoid a heavy reliance on Saudi Arabia, as this could give it reason to assume a more assertive role as the regional hegemon. The more progressive states such as the UAE and Qatar would be hesitant to give Saudi too much control within the GCC, lest it be inclined to impose its stricter religious and social ideals upon them.

Internationalising the conflict

The Gulf States are thoroughly conscious of their inability to oppose Iran as an independent alliance. Even collectively, the GCC simply cannot match the military power of Iran. Although the GCC aims to act in the interest of their collective security, it is not equipped to deploy a capable force with a coherent strategy. In the event of a strait closure, the response would need to be quick yet well-calculated, and it is doubtful the GCC could achieve this without external support. As such, the GCC would rely on the US (and possibly France) to deploy forces from their stations in the Gulf (Bahrain, Qatar, and the UAE).[112]

In the Tanker War, the US re-flagged Kuwaiti tankers under its flag (upon request by Kuwait), signalling that an attack on these vessels would constitute an attack on the US. After a US warship almost fatally struck a mine, the US launched Operation PRAYING MANTIS, destroying two Iranian oil platforms and three warships, and neutralising

six speedboats. Jon Alterman, director of the Center for Strategic and International Studies Middle Eastern Program, insists 'the cold hard reality is that no country or combination of countries can guarantee the security of the Gulf in the way the United States has done and will continue to do'.[113]

Indeed, the US-GCC defence alliance is more sophisticated than the GCC is prepared to assert in its effort to remain friendly with Iran. The US has declared both Kuwait and Bahrain major non-NATO allies. Since the 1980s, Bahrain has spent around five per cent of its GDP on defence, and relies on de facto defence security from the US, its largest military partner (from 1993-2004 the US was Bahrain's sole arms supplier, providing it with US$1.4 billion of arms). Bahrain was the only Gulf State to send its own forces to aid during Operation ENDURING FREEDOM.[114] In 2003, Oman gave the US access to staging bases for its activities in Iraq. The UAE also provided the US with access to pre-positioning facilities, despite publically opposing the conflict.[115]

Further Options

There are other possible measures the GCC might take to pressure Iran to halt aggressive action.

China

China's recent foreign policy has been to ensure 'direct access' to oil supply, prompting commentators to consider the role of the People's Liberation Army Navy (PLAN) in protecting energy supplies from the Gulf.[116] China's increasing reliance on Middle Eastern oil has influenced the government to spread its influence along the sea lines of communication from the Gulf to the South China Sea through bilateral agreements, increased access to ports and the advancement of the PLAN.[117]

China and Iran have a mutually beneficial trade relationship. China is Iran's number one oil and gas importer: the energy deals between the countries equal US$120 billion and are set to increase.[118] China also sells anti-ship cruise missiles to Iran. In recent March 2010 talks, Iran attempted to persuade China to veto possible UN Security Council sanctions by promising to assure oil supplies to China if it were to block the strait. This has stimulated discussion on whether the GCC might try to harness the potential for cooperative security with Iran via states such as China.

Whilst some suggest that in a wartime scenario, Iran would attempt to counterbalance adversaries by forming a political coalition with states such as Russia, North Korea, Syria, Venezuela and China, others insist it will not gain the support of China if it sealed the strait.[119] Saudi Arabia is the leading exporter of oil to China, selling 40 per cent more oil than Iran. It has also offered China a guarantee on oil supply if Iran halts its trade through the strait.[120] Although Beijing has notoriously vetoed proposed sanctions against Iran in the past, in early 2010 President Hu Jintao participated in talks

concerning a resolution to impose new economic sanctions on Iran. China's economic survival is hinged on sufficient oil supply, and it would be inclined to act to secure this supply. Thus the GCC might encourage China to pursue non-military means to dissuade Iran from continued aggression.

An international convention or resolution

During a conflict in the strait, the GCC states might choose to draft a UN Security Council Resolution for the security of maritime traffic. Historical maritime precedents include the Iran-Iraq War, the 1990-91 Gulf War and the issue of piracy off the east coast of Somalia. During the Iran-Iraq War, the UN Security Council passed Resolution 552 (1984), condemning all attacks on neutral shipping. Between 1990-91, the UN Security Council passed 17 resolutions regarding the situation in Iraq and Kuwait.[121] Resolution 661 imposed economic sanctions on Iraqi imports and exports, including the shipment of commodities and products via Iraqi-flagged vessels.[122] Resolution 678 authorised the use of 'all necessary means to uphold and implement resolution 660 (requiring the withdrawal of Iraq from Kuwait) and to restore international peace and security in the area'.[123] This included the deployment of international naval forces. In 2008, the UN Security Council passed four resolutions regarding anti-piracy operations off the Somali coast. Resolution 1851 grants member states the permission to use land, sea and air power to fight piracy and armed robbery in Somali territory. In the strait, a resolution might include the condemnation of targeted attacks on commercial shipping and the insistence of freedom of navigation. This would provide greater legal justification for a military response.

In recognition of the danger Iran poses to security in the strait, the GCC might seek the formulation of a convention to prevent a recurrence of maritime traffic disruption. Sokolski suggests the creation of a convention requiring a demilitarisation of the strait and a guarantee of free passage. Such a convention would appeal to Iran because it would prevent foreign powers closing the strait to Iranian exports, and would require all submarines to surface before entering or exiting. It would also require Iran to demilitarise fortified islands within and adjacent to the strait, and would provide international legal grounds for a military response were Iran to impede maritime traffic.[124]

Conclusion

The GCC states acknowledge that defence self-sufficiency is beyond their reach in the foreseeable future, and will therefore continue to rely on the assistance of external powers. Compared to a decade ago, there is a higher level of personal interaction and respect among the elite level of the GCC states. However, they remain cousins not brothers, and as such continue to be 'sensitive to slights, whether real or imagined'.[125] GCC leaders need to be exposed to increased cooperation on all levels for genuine unity to be a possibility through generational change. For the coming decade then, it is difficult to imagine the consolidation of a consistent strategic doctrine on the GCC sub-regional level.

Yet a history of symbolic rather than applied defence cooperation does not condemn the GCC to a long-term future of critical reliance on a 'protector' in the Gulf. And indeed, the GCC should not rely on the US to assume the lion's share of the defence burden. Mustafa Alani of the Gulf Research Center in Dubai notes that during the Obama presidency, the US administration has increasingly voiced the idea of 'burden sharing', which he attributes to the strain the campaigns in Iraq and Afghanistan have placed on US resources. This does not mean the US seeks to withdraw from the Gulf, but rather that President Obama wants US allies to assume greater self-defence capabilities.[126]

This raises the question of whether the GCC has the potential to build a viable security structure. Al Hamad argues that before the GCC can begin to establish political and military coherency, each state will need to eliminate their respective internal problems. In brief, Saudi Arabia needs to develop fair political and legal structures, Kuwait needs to implement a flexible idea of citizenship, Bahrain needs to solve economic and sectarian problems, and the UAE must stabilise a population imbalance and strengthen federal institutions. Yemen must also be included in the GCC in some form, so as to deter it from joining with other states such as Iraq in its isolation.[127]

Satellite view of the Strait of Hormuz (NASA)

The GCC states will also need to address their border disputes before they can genuinely implement an integrated security structure. Indeed, the GCC must work to appear as a solid political bloc. This will require each state to think about the implications of their diplomatic relations. For instance, Qatar risked portraying the GCC as a divided body when it reopened talks with Iraq in 1993 (the rest of the GCC continued to boycott relations with Iraq after its invasion of Kuwait). To be a credible alliance, the GCC needs to effectively manage the Iranian threat through military and political cooperation, whilst preserving member state diplomatic sovereignty. It might seek to achieve this through recognition of the following core principles:

1. Standardised military infrastructure and personnel training. Al Azemi argues that the GCC must plan and practice joint command, control, communications and intelligence sharing. Member states must also implement integrated and standardised training to maximise the efficiency of its forces. The GCC states lack the manpower to sustain an effective defence structure. Although the UAE and Saudi Arabia appear to have large forces (Saudi has around 75,000 men), in reality these are divided into separate political and even rival commands with very little power projection capability.[128]

2. Enhanced interoperability of equipment. The Gulf States have a history of bilateral arms agreements with different suppliers, rather than coordinated arms purchases. For instance, in 2009 the UAE received permission from the US Congress to buy the 'Terminal High Altitude Area Defense' system, a strictly regulated defence missile system.[129] In the same year, Saudi Arabia began flying operations with its Eurofighter *Typhoon* fighter aircraft acquisitions, of which it has purchased 72 in a deal with the UK.[130] Saudi also signed a military cooperation agreement with Russia in 2008.[131] The GCC states are expected to spend around US$8 billion on naval ships in the next five years, according to Abu Dhabi Ship Building.[132] The UAE, Oman and Bahrain have signed separate deals for various naval ships, and the UAE will also purchase 12 missile-armed fast craft and 34 fast-interceptor vessels.[133] Whilst all have sought to reinforce their active defence capabilities, the GCC states must focus on the joint acquisition of defence arms and apparatus to improve interoperability, as well as the realistic integration of their forces with the support power of the US.

3. An external power support guarantee. In the event of a crisis, the GCC will need a coordinated policy with an external power to facilitate the deployment of support forces. Having an external military ally such as the US will serve a double purpose: firstly to bolster the strength of indigenous forces and be on hand lest a conflict escalates; and secondly

to add to the deterrent power of the GCC defence structure. Indeed, emphasising its coordination with an ally will be a strategic imperative: even the threat of US intervention will act as a deterrent for military belligerence from Iran. Thus, it will be necessary for the GCC to host foreign forces and accept foreign strategic advisors.[134]

4. Consensus-based decision making and collective security action. Unlike some security regimes, the GCC should not embrace the principle that 'an attack on one state constitutes an attack on all'. Instead, member states should respond to particular provocations on the basis of a consensus decision to act collectively. Noll argues this would allow for broader possibilities of action and would not compromise ideas of individual sovereignty.[135]

If the GCC can successfully ground itself as an organised and practical force through the above steps, it will have greater potential as a deterrent and as a major power in the Gulf.

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HMAS Darwin *conducts an underway replenishment with the Military Sealift Command dry cargo/ammunition ship USNS* Amelia Earhart *as part of Exercise TALISMAN SABER 2009* (US Combat Camera Team)

PART IV: EXPEDITIONARY OPERATIONS

Amphibious Assault Vehicle 109 boards via HMAS Kanimbla*'s stern door* (Defence)

About these Papers

In 2009 the Australian Command and Staff College (ACSC) initiated a Joint Elective Study on 'Expeditionary Operations'. This elective was prepared and delivered by the dedicated staff of the ACSC, with officers from a number of areas within Defence, including the three Service think-tanks, contributing as guest speakers. The first paper published here was prepared by a Sea Power Centre - Australia staff member to generate interest and debate among the participants attending the course. The five subsequent papers were prepared by individual officers while attending the course, although each paper has been slightly modified for publication in this volume. These papers present a wide variety of interpretations of how the Australian Defence Force could and/or should perform operations at a distance from our home bases, as and when mandated by the Australian Government. The papers are intended for further discussion and to help all three Services reach a common understanding of what 'Expeditionary Operations' will mean to our future Defence Force. They should be considered as stimulation for further debate rather than clear statements of recommended changes to Australian Defence policy. Overall the 2009 'Expeditionary Operations' elective was a rewarding experience for all concerned and has been retained for the 2010 course.

Units of the 31st Marine Expeditionary Unit prepare for a patrol during Exercise TALISMAN SABER 2009 (US Combat Camera Team)

Members of the 31st Marine Expeditionary Unit disembark from a Landing Craft Air Cushion during Exercise TALISMAN SABER 2009 (US Combat Camera Team)

Adaptive Campaigning with a Maritime Expeditionary Force

Dr Gregory P Gilbert

> The more I consider the problem of defence the more I reach the conclusion that the answer lies basically in the ability to use the sea and air power freely, and so confine the enemy to a land strategy. Only in this way will the maximum flexibility be possible … Armies must go to sea.
>
> Montgomery of Alamein, 1968[1]

Land forces are central and people (the human condition) are of overriding importance in any strategy that aims to achieve decisive results in modern conflicts. The Australian Army's *Adaptive Campaigning* concept is premised on such conditions, however it could be further developed.[2] There are many reasons why *Adaptive Campaigning* has been limited to the joint land force construct, but the concept's applicability should and must be much wider, especially as Australia's maritime strategy is the lynchpin of Australia's defence policy.[3] Montgomery is right: 'armies must go to sea' and maritime forces need to come to the forefront of the Australian Defence Force (ADF).[4] This paper discusses how the *Adaptive Campaigning* concept can apply to a maritime expeditionary force.[5] Much of this discussion is not new, various aspects continue to be debated by specialists within the ADF and hence this paper aims to restate and reconceptualise such thinking.

The 2009 Defence White Paper describes how Australia's strategic outlook is changing, and although it is not all doom and gloom, the future is characterised by uncertainties, instabilities and potential disasters (man-made and natural).[6] On the other hand, Australia's strategic interests remain largely the same, being limited by our geography, population, economy and politics. Actions in defence of Australia continue to include important tasks such as: protecting our sovereignty at home, supporting legitimate governments in the Indo-Pacific region and contributing to international order across the globe. There would be few, if any, who would disagree with this broad narrative, however it is the interpretation of the details of the strategic environment that leads to differences of opinion as to which over-arching strategy is best for the ADF. Such differences are largely a result of long periods when traditions and concepts were developed in isolation by each of Australia's armed services. Recently, one of the results of this parallel development has been a discontinuity between joint land force concepts - fighting small wars (such as counter-insurgencies or counter-terrorist actions) and joint maritime force concepts - planning to fight high-end wars (such as a conventional state v state war).[7] However, much of this discontinuity is in practice illusionary, as

the majority of current (and probably future) conflicts involve a combination of both these planning paradigms. Conflicts are maritime, they are mostly conducted in the littorals and they involve maritime expeditionary forces.

What is Maritime?

The word 'maritime' means different things to different people. Firstly maritime can refer to the environment, in which case it includes: the surface of the sea, the water column or sub-surface, the seabed, the air above the sea, as well as the land and air space that can be influenced from the sea.[8] To simplify this a little, the maritime environment includes both the sea and the littoral, albeit with some overlap.[9] An alternative meaning for 'maritime' refers to something belonging to or associated with the maritime environment. For example a maritime force is by nature joint and, when operating in the littoral, includes all elements of the armed forces associated with the maritime environment - it includes Air Force, Army and Navy elements. *LWD 1 The Fundamentals of Land Warfare* mistakenly uses the two terms, 'naval forces' and 'maritime forces' interchangeably, as they are entirely different entities.[10] Any Australian Army unit operating in the littorals, whether they are attached to an amphibious force or simply embarked upon a single ship, are a part of a maritime force.

Australia's littoral environment (RAN)

The sea gives access to centres of human activity and thus to governments. More than 150 of the 192 members of the United Nations are coastal states, and 70 per cent of the Earth's population lives within 150km of a coastline. In Australia's case the coastal population is well over 95 per cent and it is even higher for most Southeast Asian nations. Our region is a maritime littoral environment to a greater degree than any other in the world.[11] Military (Army/Marine) units forming part of a maritime force may operate with strategic effect at distances in excess of 200km inland from a sea base. Hence the opportunity to use a maritime expeditionary force in Australia's littoral environment not only allows great flexibility and reach but enables relatively small and inexpensive forces to be decisive. Conversely to conduct land operations in Australia's continental hinterland (the light yellow area on the above diagram) would be strategically meaningless.

Australia is first and foremost a maritime nation. We live on an island within a global oceanic system rather than, as many Australians tend to believe, on an isolated continent. As a result the Australian way in warfare must give priority to its maritime strategy. Our maritime strategy must rely upon a strong and capable joint maritime force (with Navy and Air Force elements) maintaining control of the sea and air space required for limited operations to be undertaken in the littorals by a professional and well equipped maritime expeditionary force. The Australian government can choose how much or how little of a conflict we want at any particular time. As a maritime power Australia can limit the liability in ways that other, continental, powers may not. As with most Western maritime powers, Australia's maritime strategy tends to be Corbettian in its approach, although Liddell Hart's 'the British Way in Warfare' and more recent strategists have also influenced our approach to warfare.[12] For over 200 years Britain could make cost effective interventions for limited objectives in unlimited wars. Maritime strategy helps explain why Britain became powerful, why 'a small country with a weak army should have been able to gather herself the most desirable regions of the earth, and to gather them at the expense of the greatest military powers'.[13] Australia's maritime strategy is reliant on a joint ADF capable of deploying and sustaining task forces in the littorals, at home and abroad. Deployment by air or by land is either impractical or not sustainable in most threat situations, unless we send penny-packets of Australians attached to and supported by foreign forces. Only maritime units can deploy an effective joint expeditionary force.

The Australian Army's doctrine has taken onboard some of Corbett's maritime thinking:

> Land operations have also played a critical role in the wars of maritime powers such as Athens, Carthage, Venice, Britain, Japan and the United States. As the maritime strategist Sir Julian Corbett noted, 'since men live upon land and not upon the sea, great issues between nations at war have always been decided - except in the rarest of cases - by what

your army can do against your enemy's territory and national life, or else by the fear of what the fleet makes it possible for your army to do'. Therefore, victory is usually achieved on land.[14]

But unfortunately this conclusion is both overly simplistic and a non sequitur. In preference the last sentence should read something like: Enabled by maritime expeditionary forces, victory is usually achieved militarily, politically and economically when the enemy population withdraws their support for their forces on land.[15] The national failure to adequately recognise the importance of the sea in Australia's defence (sea-blindness) is not just reflected within the Australian community: it is confirmation that the ADF fails to communicate the maritime message.

Expeditionary Operations

Since the end of the Cold War, expeditionary operations have once again come to the fore, particularly amongst Western powers.[16] For example, the Royal Navy's *Future Maritime Operating Concept* is based upon 'an integrated, expeditionary capability designed to prevail in the most demanding circumstances and configured to support the decisive achievement of political expectations and strategic objectives'.[17] There are many reasons to send an expedition offshore and, despite some evolving terminology, the fundamentals have not changed all that much over time. Indeed the application of military power during the first part of the 21st century has many similarities with its application during the later part of the Victorian period; only the British have been replaced by the United States as the dominant maritime power. Towards the end of the 19th century, Colonel George Furse of the British Army suggested that:

A state may resort to expeditions for a variety of purposes; the foremost amongst these are:

• an invasion with the object of conquest and territorial aggrandisement

• as a means of transferring a war into the enemy's country

• as a diversion, to ease the pressure brought on an allied power

• as a preliminary measure, to establish a base for ulterior offensive operations

• to curb the arbitrary power of a state or ruler

• to destroy the enemy's arsenals and dockyards and such, which constitute a standing menace

• to deliver a country from foreign domination

• to obtain redress or to avenge an insult to the national flag

• to protect the commerce of the world.[18]

Today we could also add a few more essentially diplomatic expeditionary tasks to Furse's list:

- disaster relief
- evacuation operations
- assistance to foreign forces.

An Australian Maritime Expeditionary Force

In the Australian context, a maritime expeditionary force must be configured to wage limited war in the littorals. It must be capable of decisive action over the complete spectrum of operations, including: humanitarian operations, security operations, peace and stability operations, counter-insurgency operations as well as limited wars of choice. Such a force must be flexible enough to influence events ashore by a combination of political, economic and military means to achieve the desired ends, but we must remember that a maritime expeditionary force is optimised for manoeuvre operations conducted over a relatively short time period. They are decidedly less useful and potentially wasted in extended conflicts of attrition on land.

Despite quite significant advances towards a joint ADF in recent years, conceptual thinking has tended to remain centred upon single Service activities.[19] For example, in late 2005 the ADF decided that there was no need for joint ADF doctrine to cover 'littoral operations', in the mistaken belief that extant Army and Navy doctrine adequately covered all environments. At that time the conflicting Service definitions in use for the 'littoral', 'maritime' and 'expeditionary', did not raise alarm bells. The conceptual effort was not helped by superficial inputs from Navy: the Navy has a tradition of allocating few resources and minimal effort to doctrinal development.

Much has changed over the last few years, and now even the word 'expeditionary' has re-entered the ADF vocabulary. *Adaptive Campaigning* is premised on 'expeditionary' land operations, even though this is left largely unstated.[20] Unfortunately *Adaptive Campaigning* concentrates on the joint land force and essentially overlooks the operations of a maritime expeditionary force in the littorals, whereas concepts underlying the ADF's maritime operations remain focused upon the naval contributions to joint maritime forces. In the past, warfare could be separated into traditional military (land) and naval (sea) operations, but from earliest times there has always been some intersection between the military and naval operations on the coast (the littoral). As weapon ranges and force manoeuvre distances have increased the ability to separate military and naval activities has similarly decreased, and as a result the intersection at the littoral has grown in relative size and importance. In the early 20th century, air forces were added to the mix and although air forces retain some independent strategic functions, the air space that can be used to influence events over the land and over the sea is essentially omnipresent: it forms an integral part of the joint land and maritime environments.
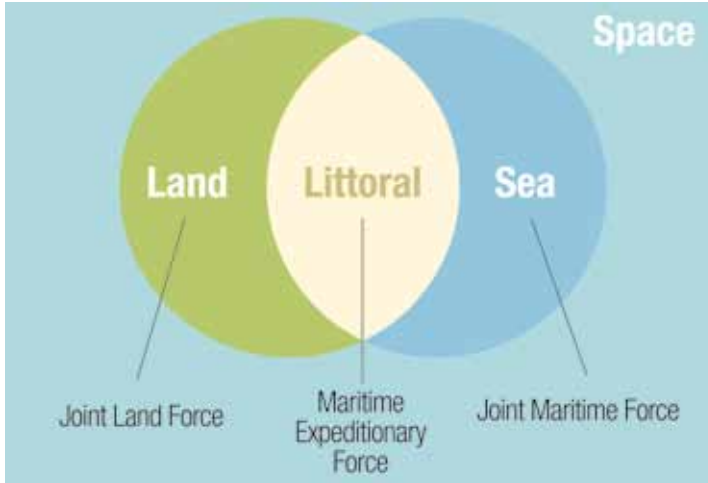
21st century warfare (RAN)

Twenty-first century warfare may be conceptualised as joint land forces (largely Army-Air Force) operating in the land environment, joint maritime forces (largely Navy-Air Force) operating in the sea environment, and maritime expeditionary forces (Army-Navy-Air Force) operating in the littoral environment. It is worth repeating, expeditionary forces are by definition inherently joint. This concept of 21st century warfare is represented in the above diagram.

Adaptive Campaigning

The Australian Army's adaption cycle (act-sense-decide-adapt) is applicable to joint operations in the littoral, where combat is potentially a very complex adaptive system, and much of the conceptual thinking behind *Adaptive Campaigning* with a joint land force is also equally relevant for the maritime expeditionary force. However, in order to adequately incorporate the littoral within the *Adaptive Campaigning* concept, it will be necessary to broaden the applicability of the 'Five Lines of Operation' to encompass operations in the littoral environment. By employing a similar approach to that used in the existing Army concepts, the 'Five Lines of Operation', may be simplified to: combat, protection, informing, supporting and capacity building (as shown in the diagram below). Each of these would then have similar but different activities associated with tasks in the littorals. In turn, the functional analysis for each line would need to incorporate those sub-concepts associated with employment in the littorals as part of a maritime expeditionary force. This approach needs to be inclusive of all three Services and should avoid any exclusive single Service approach. Only by such actions will *Adaptive Campaigning* breach the ramparts of its single Service origins and evolve into a practical joint methodology.

An inclusive approach to Adaptive Campaigning (RAN)

At the time of writing, *Adaptive Campaigning* is limited by a few unstated assumptions that have ignored the unique parameters and fundamental characteristics of littoral operations. *Adaptive Campaigning* assumes a joint land force engaged in a limited conflict in a foreign country (such as an expeditionary force). Rather than addressing how the Australian Army contributes as a fundamental component within a maritime expeditionary force, *Adaptive Campaigning* assumes that military units operating in the littoral environment will act as they would in any other environment. Littoral operations are typically understood to be a sub-set of operations in tropical, desert and cold weather environments. There is apparently still a perception within the Australian Army that one needs to 'disembark' or 'land' from a ship in the same way that a soldier might 'de-plane' from a transport aircraft, or 'de-train' or 'de-bus' from a vehicle on land. The assumption is that one has to 'disembark' before the real operations begin, where the Army feels most at home, on land. This misses the whole point of the flexibility and utility of maritime forces. A maritime expeditionary force is both a base for operations (on the water) and a manoeuvre element in its own right. It would appear that some within Army might opt for continuity in a continental approach rather than take the quantum leap necessary for 21st century warfare in the littorals, but they should be reminded that the Army has gone through a number of episodic paradigm shifts in the past, and that these have led to the Australian Army conducting numerous successful littoral operations. Unfortunately such attempted shifts have only survived for relatively short periods - the important examples being 1914, 1943-45, and 1999-2000. The littorals are as yet only gradually being absorbed into the Australian Army's culture and they have yet to reach the levels required to achieve a sustained transformation. The Army's Manoeuvre Operations in the Littoral Environment (MOLE) concept was a move in the right direction but it has not kept pace with the major developments of the last decade.[21] But MOLE is just part of the answer, modern expeditionary operations are certainly different: not only are expeditionary operations highly politicised but they require substantial different practices than those usually applicable to 'normal' land and 'normal' sea (blue water) environments.[22]

One of the lessons learnt from past maritime expeditionary operations is that land and air units do not need to establish bases ashore in a foreign country during an expeditionary campaign, when they can operate at sea from a secure sea base. For example, during the initial response to the East Timor crisis in 1999 Australian commanders put much effort into establishing a secure base for communications ashore when the equivalent communications base already existed in Dili Harbour, onboard a Royal Australian Navy warship.[23] Similar experiences are not all that unusual in the historical record although the frequent application of Australian single Service units under Allied command has tended to camouflage the joint lessons learnt.[24]

Expeditionary not Amphibious

Before proceeding further it is necessary to clarify another common misconception: 'expeditionary' is not synonymous with 'amphibious'.[25] Unlike amphibious operations which are primarily military in purpose and form part of a series of other operations within a military campaign, expeditionary operations are broad in concept and highly politicised. The strategist Geoffrey Till provides a list of interconnected criteria that apply to expeditionary operations:

- conducted at the operational level
- traditionally undertaken by Western nations
- distant
- self-contained
- limited in aim
- of short duration
- against varied opponents
- demanding and specialised
- fought in urban littorals
- highly politicised.[26]

Unfortunately many within the ADF continue to mistakenly conflate amphibious operations with expeditionary operations. Such blinkered thinking is in opposition to the necessary cultural and structural reforms that the ADF must pursue, and to state it bluntly, cannot be allowed to continue unchallenged. The ADF's move to expeditionary warfare must be reflected in an integrated web-like framework within its concepts, doctrine and force structure.

The US Navy and US Marine Corps Team

If the Australian Army is to go to sea, it will require both a significant cultural change and the development of a whole new mind-set. Perhaps the best place to start is to look at the world's best practitioner of expeditionary operations - the US Navy and the US Marine Corps expeditionary team.[27] The ADF has worked closely with the US Navy and US Marine Corps over many years and participation in amphibious exercises like TANDEM THRUST have assisted the ADF to develop credible amphibious forces.[28] The ADF maintains a watching-brief on US Navy and US Marine Corps concepts, so for example the consideration of 'Distributed Manoeuvre' as a concept for offensive tactics by the Australian Army relies heavily upon the original US Marine Corps approach to manoeuvre.[29] Despite some success at the working levels (mostly tactical and grand tactical), it is at the higher operational and strategic levels that the ADF has yet to take onboard the full implications of the US expeditionary suite of concepts.
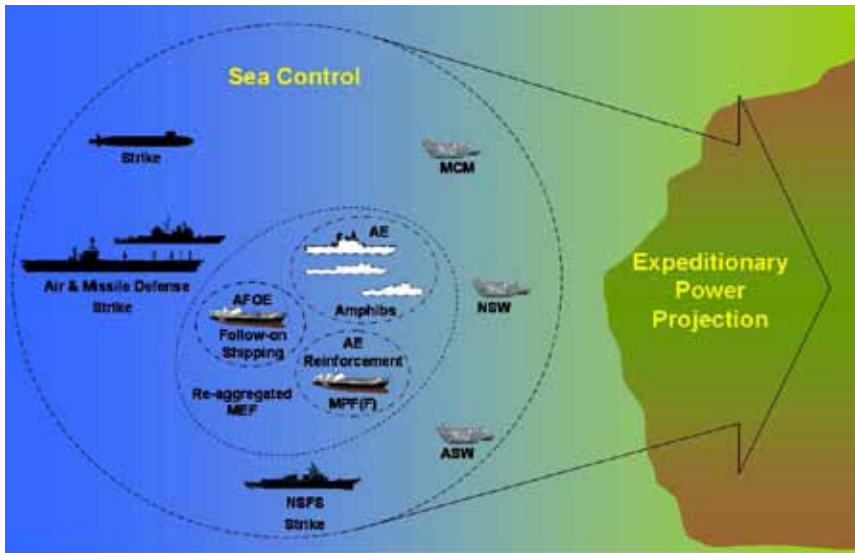
The US approach to Expeditionary Operations (USMC)

The US approach to expeditionary operations is based upon task forces (consisting of US Navy and US Marine Corps elements) capable of attaining sea control and undertaking maritime power projection.[30] Sea control forces include elements providing a protective bubble around the expeditionary units, using their anti-air warfare, anti-submarine warfare, anti-surface warfare and mine countermeasure capabilities to safeguard their marine team-members while at sea. In addition sea control forces provide strike capabilities (air, missile and naval surface fire) in support of expeditionary units ashore. The US uses a combined Navy and Marine Corps task force which typically consists of two components: a Marine Expeditionary Unit (Special Operations Capable) (MEU(SOC)), and an Amphibious Ready Group (ARG).

The ADF moved part of the way towards the US model when it adopted the ARG model for its amphibious doctrine.[31] Today the ADF typically operates its *Kanimbla* class amphibious ships and heavy landing ship as constituents of an ARG, with the Australian Army providing units for small craft operations as well as to control embarkation and disembarkation - known as a Ship's Army Detachment (SAD). However the SAD falls far short of the Australian Army strategic requirement for expeditionary operations. Examination of the following organisational diagrams shows that the Australian Army does not have any comparable organisation to the MEU(SOC), neither is the Army component within the ARG anything like that required for strategically flexible operations that are routinely undertaken by a maritime expeditionary force. Much work also has to be done by the Australian Navy to meet the equivalent ARG requirements.

Despite many Australian historical examples and the modern US experience, the value to be gained from a forward deployed Australian maritime expeditionary force in coalition with our allies, using poise and presence to deter potential enemies and influence events ashore, has yet to be recognised, let alone understood, by many strategists within Australia.

Figures 1 and 2 show, comparison purposes, formations of a typical United States MEU(SOC) and ARG.

One of the reasons that maritime strategy and expeditionary warfare is not well understood within the ADF is due to the disproportionate effort attached to the tactical level of command at the expense of operational and strategic command. Although this is a relatively common problem within the ADF as a whole, some within Army have yet to grasp the strategic realities of Australia's role as a medium power in a part of the world that is dominated by the maritime environment. The ADF needs to use the sea to its advantage; it needs to overcome potential crises before they degenerate into war. The US Marine Corps expeditionary concepts are useful constructs for the ADF, although they will need to be modified to better reflect the way the nation wishes to project power abroad, noting that Australia is a medium power not a super power. That does not detract from the usefulness of the US concepts as they stand today.

For the US Marine Corps the central idea is a cultural one. All Marines, from the Commandant down to the new recruit, are taught to believe that the:

> Marine Corps is the nation's naval expeditionary, combined-arms, force-in-readiness. We have throughout our history, routinely task-organised agile and adaptable forces, adjusted operations and developed innovative tactics such as amphibious assault and sea basing, to meet the demands of the nation. We have demonstrated a multi-capable ability across the range of military operations.[32]

The future ADF needs serving men and women who are familiar with expeditionary operations and who can think and act like Marines.

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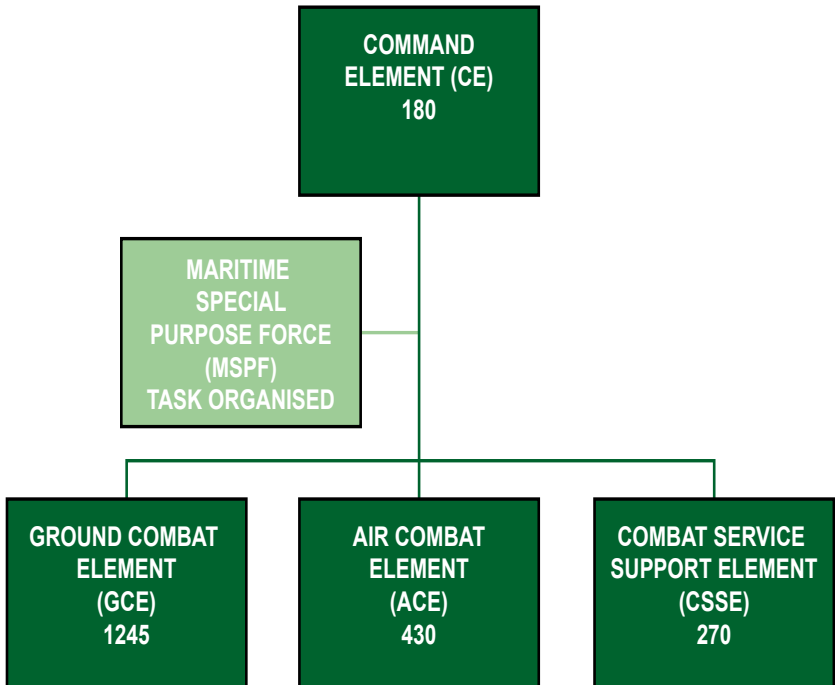
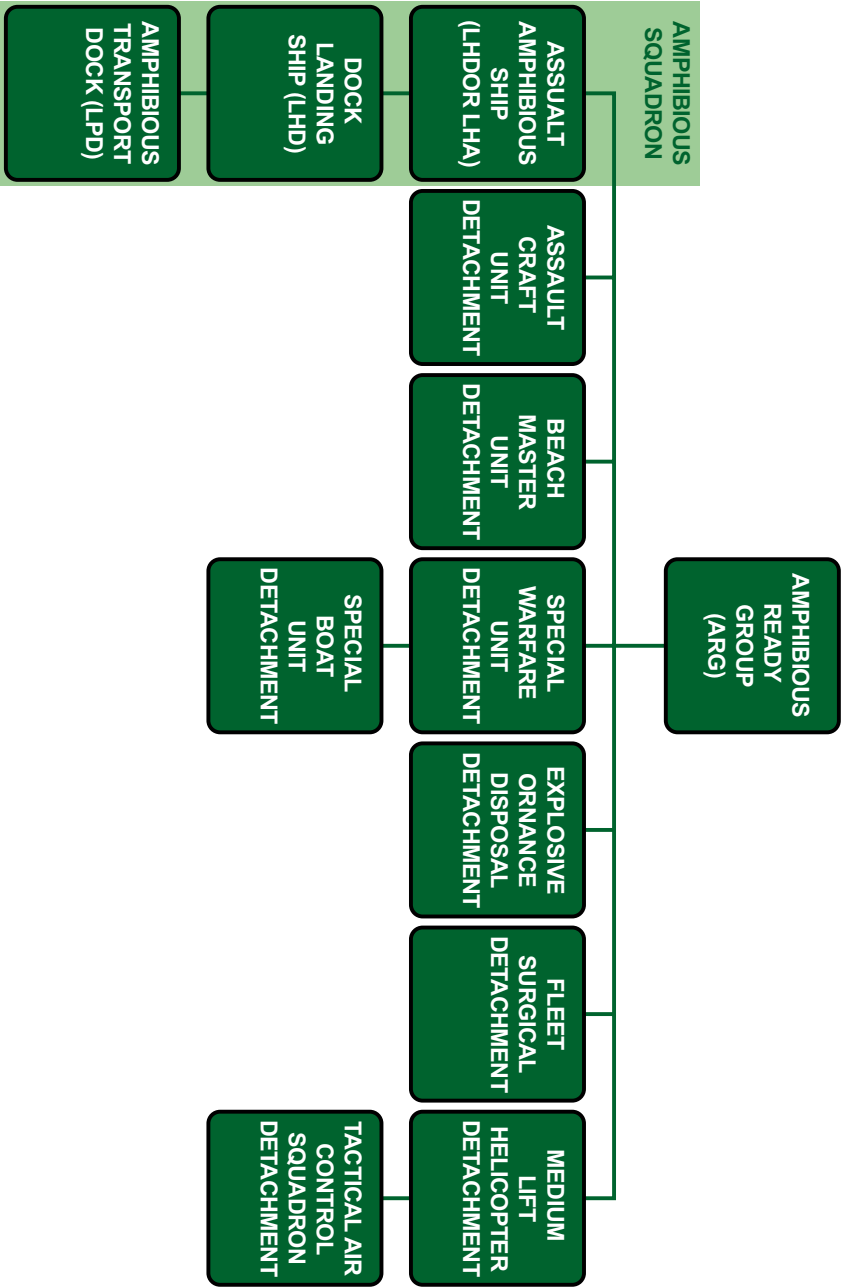*Figure 1: Marine Expeditionary Unit (Special Operations Capable),
MEU(SOC) (USMC)*

Figure 2: Amphibious Ready Group, ARG (USMC)

Marines and Operational Manoeuvre

Let me provide an example of how a maritime expeditionary force may be used at the operational and strategic level. As part of their efforts to examine the challenges of expeditionary operations in the littorals during the 1990s, the US Marine Corps developed a suite of concepts including - Operational Manoeuvre from the Sea (OMFTS) and Ship to Objective Manoeuvre (STOM).[33] OMFTS is the ability to exploit the sea as a means of gaining advantage to resolve 'Chaos in the Littorals'.[34] STOM is the ability to project combined-arms forces by air and surface directly to critical operational objectives, dislocating adversaries in space and time. At the most basic level the US Marine Corps must be able to do three things: to be able to manoeuvre sideways, to be able to manoeuvre deep, and to understand and influence an expanded battlespace.

In the Australian context the ADF has, up to now, remained focused on the tactical and grand tactical levels of amphibious operations rather than the operational and strategic level of expeditionary concepts. Since the late 1990s, the US Marine Corps has purposely driven its culture from one with an amphibious outlook into one that is truly expeditionary. This involved both overturning 70 years of deeply held Marine Corps amphibious traditions, including the hard won and bloody lessons of those Marines who fought in the Pacific during World War II. But the move to manoeuvre warfare in response to the nature of 21st century conflicts required just such a break from the past. Over the same period, the Australian Army has hovered on the fringes of the beach, dipping its foot in the water but has remained unwilling to take the plunge into the sea. In future the Australian Army, like the US Marine Corps before it, will have to not only take to the water but learn to thrive in the wet environment. The introduction of the new *Hobart* class destroyers will encourage (some might suggest mandate) cultural change. The Australian Army must become as familiar with the water as does a surf life saver: it can no longer be a reluctant first-time swimmer who knows about the 'rip' but has never experienced it.[35]

Sea Basing

This leads us to another useful US Marine Corps concept - sea basing. Sea basing is the ability to project, protect, and sustain national capabilities from the sea, by leveraging forward presence to access denied areas from great distances. It enables US Marine Corps units to effectively act with purpose in the anticipated 'Chaos in the Littorals', and it includes operations such as:

- forward presence, security cooperation and counterterrorism
- crisis response
- forcible entry
- prolonged operations
- counter-insurgency.

Sea basing is not a specific ship or platform but rather a set of capabilities that enable the US to have persistent presence and deterrence world-wide. It is a concept that provides a solution to the access challenges of the current and foreseeable security environment. Using the sea as manoeuvre space, sea basing enables joint operations across the range of operations and across the littorals. It provides for the application of capabilities that will leverage a joint, interagency, and multinational effort allowing for early arrival and shaping, increased operational tempo, optimised footprint ashore, and reduced force protection issues. The sea basing concept provides a vast array of options for senior policy makers allowing the optimal force presence on land and at sea. Sea based forces ashore can be increased if needed or rapidly pulled back as the operation dictates. The sea base can be close to shore as a show of force and resolve, or it can operate from over the horizon to minimise political sensitivities and increase surprise and flexibility. Sea basing offers a method to minimise the host nation's political sentiments against the presence of foreign troops as well as providing the ability to maintain a presence in the region when there is difficulty trying to secure basing or over flight agreements.[36]

Addressing sea basing, the US Department of Navy policy states:

> The sea base is an inherently manoeuvrable, scalable aggregation of distributed, networked platforms that enable the global power projection of offensive and defensive forces from the sea, and includes the ability to assemble, equip, project, support, and sustain those forces without reliance on land bases within the joint operations area.[37]

Australian Marines?

It might appear that I have overstated the applicability of the US concepts in the Australian context, but very similar concepts have been developed over recent years, albeit with varying terminology, by the world's best marine forces (including those of the Netherlands and the United Kingdom). Space prevents me from dealing with the conceptual developments within these countries but it is clear that the expeditionary concepts developed by the US Marine Corps can and have been modified for use by middle ranking powers. Even concepts such as sea basing can be used as much or as little as a nation's armed services feel necessary. They are ignored at a nation's peril.

If the ADF, particularly the Australian Army, does not adapt to its 'marine' role, then the armed services will become increasingly irrelevant. Of course if the Army does not come to the party, the ADF may find it expedient to employ the Australian ARG to manoeuvre marine units belonging to our allies (a foreign MEU), in the form of a coalition maritime expeditionary force. Some analysts have already suggested that we could find it much more efficient and relatively cost-effective to work with specialist marine brigades or battalions from neighbouring Southeast Asian nations on coalition

expeditionary operations within our region rather than employing Australian infantry. History has demonstrated that specialist marines are an absolute necessity during all maritime expeditionary operations when operating in the difficult littoral environment encountered.[38] The Australian Army has employed brigade sized marine forces in the past, and surely the Army will need to do so in future.

Some readers may be thinking, but what would Australian Marines do? The following short list of those activities which may be undertaken by Australian Marines (or sea-qualified soldiers) at sea or ashore in the littorals offers some suggestions. This list is indicative only:

- command, control, communications, computers, intelligence, surveillance and reconnaissance (C4ISR)

- logistics, medical and other support operations

- military ceremonial, diplomatic and engagement

- armed guard and general constabulary duties

- harbour and port protection

- boarding operations (maritime intercept by air or boat)

- force protection (helping to counter the asymmetric threat)

- riverine operations

- Special Forces operations

- counter-insurgency operations

- amphibious operations.

Australian Marines must rely upon manoeuvre to overcome opposition: they should avoid opposed landings, establishing bases or airfields ashore, and attritional warfare. Only continental forces should fight continental wars.

Some quite advanced expeditionary capabilities are either planned or currently under development by the ADF, however the overall impression is that Australia's ability to conduct maritime expeditionary operations are about five or so years behind that of our major allies. As such, we cannot be confident that the ADF will be able to integrate fully with our coalition partners when, in future, an Australian maritime expeditionary force is urgently required.

Conclusion

So what does all this mean for the ADF and future operations by a maritime expeditionary force? Well, all three Services, but particularly the Australian Army, need to get behind the latest strategic and operational developments in maritime expeditionary operations. This will involve a significant cultural change as well as some structural change. There are many options for Army: it may decide to develop into an equivalent Marine organisation in its entirety, or it may be necessary to redesignate a specialist Marine Brigade Group (equivalent to a US Marine Expeditionary Brigade). Whatever decisions are made in future, it is clear that *Adaptive Campaigning* needs to refocus the Australian Army's attitude, and its level of commitment to a truly effective maritime expeditionary force.

Notes

1   Field-Marshal Viscount Montgomery of Alamein, *A Concise History of Warfare*, Collins, London, 1968, p. 356.

2   Adaptive campaigning is defined as 'actions taken by the land forces as part of the military contribution to a whole of government approach to resolving conflicts'. See Australian Army, *Complex Warfighting*, Canberra, 2004; *Adaptive Campaigning*, Canberra, 2006; as well as the 17 April 2009 draft of Australian Army, *Adaptive Campaigning: Army's Future Land Operating Concept (AC-FLOC)*, Canberra, 2009.

3   Joint land force is defined as 'the Army, including special operations, and those elements of the Navy, Air Force and, other government agencies, including cyber and space capabilities, that support land operations'. (*AC-FLOC* Draft April 2009, p. ix); and 'This entails a fundamentally maritime strategy, for which Australia requires forces that can operate with decisive effect throughout the northern maritime and littoral approaches to Australia, and the ADF's primary operational environment more generally', in Department of Defence, *Defending Australia in the Asia Pacific Century: Force 2030*, Canberra, 2009, p. 59.

4   Many of the ideas presented in this paper are not new. The fundamentals of sea power are described in Geoffrey Till's book, *Seapower: A Guide for the Twenty-First Century*, 2nd edn, Routledge, London, 2009, chapters 3, 8 and 9 are especially important for this paper. Navy doctrine is also essential reading: Royal Australian Navy, *Australian Maritime Doctrine (AMD): RAN Doctrine 1*, Sea Power Centre - Australia, Canberra, 2000. Note the Navy's 2010 update of AMD, released by the Chief of Navy on 4 June 2010 has particularly embraced the expeditionary concepts developed over the last decade or so.

5   An expeditionary force is defined as 'a force projected from the home base capable of sustained operations at distance from that home base' (*Australian Maritime Doctrine 2010*, using *JWP*

0-01.1, UK Joint Glossary). For this paper a maritime expeditionary force is 'a self-sustaining forward deployed joint maritime force that demonstrates Australian interest with its physical presence and latent power. Operating from international waters, the joint maritime force is free of political and economic encumbrances, and independent of overseas bases or host nation support, which may not be accessible due to domestic or international concerns' *(*Royal Navy, *BR1806*, *British Maritime Doctrine*, 3rd edn, The Stationary Office, London, 2004).

6   Department of Defence, *Defending Australia in the Asia Pacific Century*, chapters 4 and 5.

7   Here the stated Royal Australian Navy mission: 'to fight and win at sea' does not help much.

8   See Royal Australian Navy, *Future Maritime Operating Concept - 2025*, Defence Publishing Service, Canberra, 2007, pp. 11-2. Note the space, electro magnetic and information domains also contribute to the maritime environment, although they are not exclusively 'maritime'.

9   Littoral is defined as 'the areas to seaward of the coast which are susceptible to influence from support from the land and the areas inland from the coast which are susceptible to influence or support from the sea'. Royal Australian Navy, *Australian Maritime Doctrine*, p. 198.

10   Naval forces are defined as 'seaborne military forces including surface combatants, submarines, amphibious and mine warfare units, hydrographic and oceanographic units, organic helicopters and auxiliaries', whereas maritime forces are 'forces whose primary purpose is to conduct military operations at, over and from the sea. The expression includes surface combatants, submarines, auxiliaries, chartered vessels, organic aircraft and helicopters, shore installations intended for coastal and maritime defence and land forces, shore based aircraft and helicopters assigned to maritime tasks' (both are from Royal Australian Navy, *Australian Maritime Doctrine*). Only in the US Department of Navy context does the US Navy and US Marine Corps team truly form a naval expeditionary force. Such a force is equivalent to our maritime expeditionary force.

11   See Royal Australian Navy, *Australian Maritime Doctrine*, esp. pp. 19-29.

12   Till, *Seapower*, pp. 56-68, has been used extensively.

13   Julian Corbett, *Some Principles of Maritime Strategy*, Longmans Green, London, 1911, p. 57-8.

14   Australian Army, *Land Warfare Doctrine LWD 1, The Fundamentals of Land Warfare*, Defence Publishing Service, Canberra, 2008, p. 13; Corbett, *Some Principles of Maritime Strategy*, pp. 15-6.

15   A maritime expeditionary force does not always need to deploy armed forces ashore to achieve its strategic aims, as often presence, poise and other non-physical means may achieve the desired effects.

16   Expeditionary operations are defined as 'military operations which can be initiated at short notice, consisting of forward deployed, or rapidly deployable, self-sustaining forces tailored to achieve a clearly stated objective at a distance from a home base' (Royal Australian Navy, *Australian Maritime Doctrine*). See also Till, *Seapower*, chapter 9.

17   Ministry of Defence, *The Future Maritime Operating Concept*, Development, Doctrine and Concepts Centre, Shrivenham, 2007, pp. 1-2.

18   Colonel George A Furse, *Military Expeditions Beyond the Seas*, William Clowes, London, 1897, p. 2.

19   The Joint Amphibious Capability Implementation Team (JACIT) has been quite successful in refining the joint amphibious requirements and preparing for the introduction of the two new Canberra class amphibious ships from 2012. Their remit, however, does not include the strategic and operational level requirements of expeditionary operations.

20   Although unstated, the Adaptive Campaigning spaghetti diagram and the 'Five Lines of Operation' do not relate to conditions within Australia, our citizens or our coastal cities and towns.

21   Australian Army, *Land Warfare Doctrine LWD 3-0-0, Manoeuvre Operations in the Littoral Environment (MOLE)*, (Developing Doctrine), 2004.

22   Till, *Seapower*, pp. 249-50.

23   For background see D Stevens, *Strength Through Diversity: The Combined Naval Role in Operation Stabilise*, Working Paper No. 20, Sea Power Centre - Australia, Canberra, 2007.

24   In the past Australians have conducted few important joint operations in the littorals, however the most important being German New Guinea 1914, New Guinea 1945, Borneo 1945 and East Timor 1999. See M Evans, *The Role of the Australian Army in a Maritime Concept of Strategy*, Working Paper No. 101, Land Warfare Studies Centre, Canberra, 1998; and M Evans, *From Legend to Learning: Gallipoli and the Military Revolution of World War I*, Working Paper No. 110, Land Warfare Studies Centre, Canberra, 2000.

25   For more detail see Till, *Seapower*, chapters 8 and 9, especially pp. 221-4.

26   Till, *Seapower*, p. 223.

27   The core US doctrinal documents continue to evolve. The 1992 'From the Sea' and 1994 'Forward … From the Sea' concepts were followed by US Marine Corps, *Marine Corps Doctrinal Publication (MCDP) 3: Expeditionary Operations*, Quantico, 1998 and US Marine Corps, *Expeditionary Maneuver Warfare: Marine Corps Capstone Concept*, Quantico, 2001. Such expeditionary concepts remain an essential component of the sea basing and global maritime partnership constructs. US Navy, US Marine Corps and US Coast Guard, *A Cooperative Strategy for 21st Century Seapower*, released in October 2007, confirms that the 'expeditionary character and versatility of maritime forces provide the US the asymmetric advantage of enlarging or contracting its military footprint in areas where access is denied or limited. Permanent or prolonged basing of our military forces overseas often has unintended economic, social or political repercussions. The sea is a vast maneuver space, where the presence of maritime forces can be adjusted as conditions dictate to enable flexible approaches to escalation, de-escalation and deterrence of conflicts'.

28   See for example Australian Defence Force, *Australian Defence Doctrine Publication (ADDP) 3.2, Amphibious Operations*, Defence Publishing Service, Canberra, 2009.

29   See RE Schmidle, 'Distributed Operations: from the Sea', *Marine Corps Gazette*, vol. 88, no. 7, 2004, pp. 37-41, and subsequent papers in the *Marine Corps Gazette*. For the Australian context see J Kelly & M Brennan, *Distributed Manoeuvre: 21st Century Offensive Tactics*, Working Paper No. 134, Land Warfare Studies Centre, Canberra, 2009.

30   Sea control is defined as 'that condition which exists when one has freedom of action to use an area of sea for one's own purposes for a period of time and, if required, deny its use to an adversary. The state includes the air space above, the water mass and seabed below as well as the electro-magnetic spectrum. To an increasing degree, it also includes consideration of space based assets'. Maritime power projection is defined as 'power projection in and from the maritime environment, including a broad spectrum of offensive military operations to destroy enemy forces or logistic support or to prevent enemy forces from approaching within enemy weapons' range of friendly forces. Maritime power projection may be accomplished by amphibious assault operations, attack of targets ashore, or support of sea control operations' (Royal Australian Navy, *Australian Maritime Doctrine,* pp. 205 & 199).

[31] Australian Defence Force, *ADDP 3.2, Amphibious Operations*, pp. 1-11.

[32] US Marine Corps, *Expeditionary Maneuver Warfare*, p. 1.

[33] Till, *Seapower*, pp. 78-80 & 197-202.

[34] 'Chaos in the Littorals' is discussed within US Marine Corps, *MCDP 3: Expeditionary Operations*.

[35] For sustained operations, marines deployed to a maritime expeditionary force may be at sea for several months at a time, poised and ready to go into combat at any time. Mission success is just as likely to be due to their readiness to fight (deterrence) as to their use in an actual conflict ashore.

[36] This paragraph is based upon US Marine Corps, *Expeditionary Warrior 08: Sea basing*, US Marine Corps Warfighting Laboratory, August 2008, p. 2.

[37] Department of the Navy, *Naval Warfare Publication (NWP) 3-62/Marine Corps Warfare Publication (MCWP) 3-31.7, Sea Basing*, Washington, August 2006.

[38] Till, *Seapower*, pp. 242-3.

An RAN dentist conducts a dental check in East Timor as part of the in-country specialist support the ADF provides through the International Stabilisation Force (Defence)

What are the Weaknesses of Expeditionary Operations when Compared with Continental Defence?

Squadron Leader Lewis Frederickson

As an island nation geographically isolated, most military operations that Australia has mounted since Federation have invariably been expeditionary in nature, resulting in the projection of force off shore. Australia's geo-political and military ties during the last century have ensured that this has been perpetually so. Indeed, for nearly sixty years now the ANZUS alliance has been the mainstay of Australia's military foreign policy. This driving force stems back to the fall of Singapore, when it became unequivocally clear that Britain was no longer capable of underwriting Australia's security. At the time, Prime Minister John Curtin was succinct in his appraisal of Australia's circumstances in saying:

> Australia regards the Pacific struggle as primarily one in which the United States and Australia must have the fullest say in the direction of the democracies' fighting plan. Without any inhibitions of any kind, I make it quite clear that Australia looks to America, free of any pangs as to our traditional links or kinship with the United Kingdom.[1]

Notwithstanding, such concepts were not new to Australia. Nearly four decades earlier, when the Japanese defeated a Russian fleet in the Straits of Tsushima in 1905, it signified the arrival of a new Asian oceanic power. In many ways this earlier development was just as significant for Australia. At the time, the Battle of Tsushima and the emergence of a powerful Asian nation was a perceived threat to Australian security, and Australia's projection of power into the region has become an enduring theme in the nation's history ever since. It is, in fact, impossible to view Australian defence policy since Federation as distinct from our regional interests, for although 'Australia's 'declared' defence policy has oscillated between continental and various forms of regional defence, [it] has consistently focused on the defence of Australia's northern approaches'.[2]

The corollary of this focus leads to a question of distinguishing between regional, or expeditionary, and continental forms of defence; and further, an understanding of why expeditionary operations have largely predominated in the Australian experience. Indeed, the distinction between Australian expeditionary operations and continental defence can only be understood in the context of Australia's continued reliance on bigger powers in the region. Further, projecting power in an expeditionary sense has always presented its own set of unique challenges, even weaknesses, to the Australian

military, from the strategic down to the tactical level of operations, and such factors have also played their part in the conduct of offshore deployments. To this end, the first question for Australia has always been whether its military should be sent abroad under the protective mantle of a 'great and powerful friend', or should it concentrate on the direct defence of the continent?

Since Federation, Australia has variously cooperated with either Britain or the United States (US) to underpin the nation's security. Even in the 21st century, this is clearly manifested in ongoing defence agreements and treaties and in Australia's continued involvement in regional affairs. Within this context, Australian expeditionary operations have clearly predominated, particularly in the thirty years after World War II (WWII) under a declared policy of forward defence. Forward defence provided for the projection of force offshore to ostensibly halt any potential threat, particularly communism, before it reached Australian territory. In 1965, when Prime Minister Menzies stated that 'the takeover of South Vietnam would be a direct military threat to Australia and all the countries of South and Southeast Asia' the policy resulted in Australia's expanded commitment to the conflict there.[3] In fact, under forward defence:

> Australia would be the southern support base for operations in the Asia-Pacific area. Its armed forces were to be developed and maintained to operate as an adjunct to much larger Allied armies in Korea, Malaya and Vietnam.[4]

Australia's commitment to Vietnam aside, the nation's expeditionary contributions to foreign wars in the last 100 years have also included both World Wars, Korea, Malaya, Borneo and recently, the Middle East and Afghanistan. In fact, during World War I (WWI) more than 20,000 troops had left Australia by the end of 1914, and in the following four years another 280,000 further volunteers would follow on active service with the Australian Imperial Force (AIF).[5] Just under 65 per cent of these troops were killed or wounded, the great majority in the northern hemisphere.[6] Although such conflicts have been costly, one consequence of projecting force has been the ostensible guarantee from alliance partners to assure Australia's security should it ever be directly threatened. However, it is debatable whether such expeditionary campaigns have truly secured Australia or whether they have constituted an inherent weakness in foreign policy.

Conversely, continental defence focuses solely on the defence of Australia independent of reliance on other nations. Interestingly, the *Defence Act 1903* enshrined this policy which resulted in the formation of expeditionary forces during both World Wars. The militia, as Australia's permanent military force, was forbidden to serve outside Australian territory.[7] The aftermath of WWI and the economic climate of the inter-war years saw a return to Australia's continental defence strategy, however the policy was largely superseded by world events in the late 1930s. Australians subsequently fought in expeditionary campaigns during WWII and post-war in Korea and Southeast Asia. By 1972, the Whitlam government believed that Australia must take a more independent

outlook in regional affairs and defence policy. Accordingly, during the 1970s and 1980s 'Australia pursued a number of multilateral policy initiatives in Asia, and cultivated stronger bilateral ties with regional actors such as China and Indonesia'.[8]

At this time, Australian defence policy again shifted to continental defence, focusing solely on the defence of Australian territory and its immediate maritime surrounds. The concept of continental defence and self-reliance was most clearly articulated in the Hawke government's 1987 White Paper.[9] *The Defence of Australia 1987* stated that Australia's fundamental security interest lay in the promotion of regional stability. Self reliance indicated that Australia's defence policy 'must be set firmly within the framework of [Australian] alliances and regional associations'.[10] In fact, former Minister for Foreign Affairs Gareth Evans believed that Australian foreign policy had historically languished under a 'restrictive dependency: that its first task was to attract the attention of great and powerful friends'.[11] In articulating the Defence of Australia concept, former Minister for Defence Kim Beazley explained that Australian military capability developed for the defence of Australia additionally provided an ability to promote regional security.[12]

Yet, during the 1990s, Australia's defence policy again shifted offshore. Australia's involvement in the 1999 East Timor crisis, and its immediate commitment of combat forces to Afghanistan in the aftermath of the 9/11 attacks and the 2003 invasion of Iraq have resulted in a massive increase of overseas deployments for the Australian Defence Force that are likely to continue into the foreseeable future.[13] Nevertheless, such force projection has traditionally been physically and fiscally costly to Australia, and highlights inherent weaknesses in expeditionary campaigns at all levels of operations. A review of the results of the last 100 years simply underscores this point. Historically, 60,000 Australian deaths on expeditionary operations during WWI though rightly enshrined by Charles Bean as establishing the Australian identity, provided no guarantee to Australia 25 years later when Britain could not assure the defence of Australia against a militant Japan. WWII and Australia's expeditionary deployments into the South-West Pacific during this conflict ensured the nation's survival, and are perhaps the only time in which an Australian force projection has been successful in securing national interests.

Since this time the return for Australia's commitment of expeditionary forces overseas has been poor. Moreover, it is questionable as to whether any overseas Australian military expedition since has achieved success. In 1950, Australia immediately despatched an expeditionary force on the outbreak of the Korean War, and in 1951, Australia, New Zealand and the US signed the ANZUS security treaty.[14] ANZUS provided security for Australia under the mantle of protection from a larger power; this is particularly due to perceptions of an emerging and expansionist communist China, or the threat of a resurgent Japan.[15] While the ANZUS treaty signified a substantial shift away from Australia's traditional links with Britain, it equally indicated that the

nation sought to maintain the influence of a more powerful and influential Western ally in the region. In 1955, Australian troops joined with Britain and New Zealand to form a brigade under the Australia, New Zealand and Malayan Area (ANZAM) pact. In the same year, Australia additionally joined with the US, Britain, France, New Zealand, Pakistan, Thailand and the Philippines to form SEATO. This pact provided for defence against communist aggression directed at any member state, and was later expanded to include the democracy in South Vietnam.[16]

Yet, the trade off for securing such treaties with larger and more powerful friends invariably meant an expeditionary commitment, all of which yielded little for Australia's national interests. Australia's decade long expeditionary commitment to the Vietnam War resulted in an ignominious withdrawal of western support for South Vietnam in the mid 1970s.[17] None of the foreign armies involved could achieve success despite a massive and continually increasing commitment of soldiers and firepower; millions of young Vietnamese combatants and non-combatants, and American and Australian troops were killed; untold destruction was inflicted on Vietnam; and enormous damage was done to Western standing. Indeed, as academic Alan Stephens indicates, in the conduct of such endeavours one man's 'expedition' is another man's 'invasion'.[18] Further, Australia's scorecard for such operations reads as follows: one disaster (Vietnam), one fiasco (Iraq), one disaster-in-waiting (Afghanistan), and a few blunders (East Timor, the Solomons).[19] Such sentiments indicate the core weaknesses of expeditionary campaigns at all levels of operations.

At the coalface, the claim is regularly made that boots on the ground are the answer to defeating insurgents and guerrillas.[20] There is a perception that these are the only combatants whom Australian troops are currently facing. Yet the empirical results of Australia's military commitments overseas indicate no truth in this notion. Indeed, the major challenge for Australian troops on contemporary operations offshore today lies in the very environment, cultural and physical, in which they serve. More than ever before, the work of deployed personnel requires a certain intellectual breadth outside that associated with a traditional military role; this invariably including humanitarian, diplomatic and governance building duties. Sailors, soldiers and airmen at all levels must be educated on the environments into which they deploy, and, more importantly, they must be tolerant and well versed. They must possess knowledge and understanding of the context of events, geography, and how different the political and moral standards of other societies may be from Australia.[21] Failure to impart such fundamental education builds an inherent weakness into a contemporary expeditionary operation before it even commences. George Lucas is succinct in his appreciation for educating this understanding. Indeed, it:

> Might be understood as a new moral requirement of just war doctrine … the moral responsibility for preparing present and future warriors … for the moral challenges and ethical responsibilities incumbent upon them in combat.[22]

At an operational level, force projection in an expeditionary sense is compounded by logistical and administrative challenges. The *Air Power Manual* defines an expeditionary operation as 'the projection of military power over extended lines of communication into a distant operational area to accomplish a specific objective.'[23] Australian maritime and land doctrine espouse similar concepts. Accordingly, Australian forces must be capable of being tailored to conducting decisive action over the complete spectrum of operations, including: humanitarian, security, peace and stability and counter insurgency operations. Planning for such operations in a coalition force, the environment in which Australia is likely to continue to deploy, creates an inherent burden for the supply chain of the Australian Defence Organisation. Quick access to infrastructure, rapid deployment, rapid employment and immediate sustainment of deployed forces are also the hallmarks of successful expeditionary operations.[24] However, contentious issues like entry and exit points, customs, over flight authorisations, blanket diplomatic clearances and facility access agreements create administrative overheads with the potential to delay or affect force projection.[25] Such factors indicate the importance of establishing agreement among multinational partners, including host nation endorsement, during the conduct of expeditionary operations.

At the strategic level, Australia's current expeditionary commitments are beset by even greater difficulties. The problems facing near neighbours including East Timor, the Solomon Islands and Papua New Guinea include weakness in the social, political and governance fabric of the nations themselves. In order to foster regional stability and cooperation, Australia faces the difficult prospect of institutional root and branch reform in these countries with no template on how to do so. Such assistance goes well beyond the traditional concept of providing developmental aid, and Australia's expeditionary engagement in such places during the last decade has led to a regional perception of Australia acting as the US's deputy sheriff in the Asia-Pacific. Australia's involvement in the 1999 East Timor emergency simply underscored this perception. Although the US played no direct part in the intervention in East Timor, Australian lobbying successfully resulted in America tacitly warning Indonesia that any Indonesian military opposition to Australian forces in Timor would result in massive economic ramifications.[26] When interviewed by *The Bulletin* magazine in 1999, Prime Minister John Howard aggravated circumstances by concurring that Australia was the US deputy sheriff when dealing with regional trouble spots.[27] The obtuse analogy damaged Australia's key relationships throughout Asia and Australia was condemned for the patronising manner of its expeditionary practices.[28]

To compound this, in the aftermath of the 11 September 2001 attacks, Australia's alliance with the US resulted in further critical scrutiny from its closest neighbours. In fact, 'in some parts of the region at least, Canberra [was] viewed as the ally that cannot say ''no''', and the goal of defeating potential threats offshore has seen a return to policies akin to forward defence.[29] Today, there are ever increasing Australian expeditionary commitments to the Middle East and Afghanistan. Professor Hugh White

has described this policy as an intrinsically Australian 'way of war'. Drawing on the experience of the two World Wars, Korea, Vietnam, and now Iraq and Afghanistan, a pattern emerges. The Australian 'way of war' is to therefore 'send armed forces to support our allies in major land operations anywhere in the world in which our shared interests (often described as our values) are threatened'.[30]

The context of this history is hard to overcome. Since the 1940s, Australia has consistently sought leverage from the regional presence of a 'big and powerful friend' in order to promote security and stability in the region. The manifestation of such relationships, predominantly with the US, are to be found in Australia's ongoing treaties and involvement in expeditionary operations that stem back to the Korean War. Yet, expeditionary operations of a purely military nature, and all major Australian operations have been arguably that, are inherently weak. In comparison to continental defence, expeditionary operations are costly in terms of force preparation and projection, sustainment, diplomacy, legitimacy, and this to say nothing of the casualties that are incurred. The invidious position for Australia is that the nation's 'geographic position combined with its Western heritage make it uniquely placed for supporting US interests in the region'.[31] While Australia is a predominantly European based society geographically placed in an Asian and Pacific Islander demography, the argument that Australia's security is reinforced by expeditionary policies is debatable. The Rudd government's 2009 Defence White Paper recognises this and is an historic document in this regard.[32] In general, the paper articulates a gradual melding of all forms of continental and regional defence to a whole of government approach to defence and military engagement. The White Paper acknowledges that there is a role for Australia in leading military coalitions in the region, and in contributing to other military operations in the Asia-Pacific region and the wider world; this, in essence, being an expeditionary orientation. However, such efforts require balance, and an effort to engage regional neighbours as equal, sovereign states. It is only through such methods that the inherent weaknesses in Australia projecting expeditionary force (in all its forms) will be negated.

Notes

[1]   Curtin quoted in FG Clarke, *Australia: A Concise Political and Social History*, Harcourt Brace Jovanovich, Sydney, Australia, 1992, p. 254.

[2]   G Cheeseman, 'From Forward Defence to Self-Reliance: Changes and Continuities in Australian Defence Policy 1965-90', *Australian Journal of Political Science*, vol. 26, Canberra, 1991, p. 429.

[3]   Commonwealth Parliamentary Directive, vol. H of R45, 29/04/65, p. 1061, cited in Ian MacNeil, *To Long Tan: The Official History of the Australian Army and the Vietnam War 1950-1966*, Allen & Unwin, Sydney, 1993, p. 68.

[4]   Cheeseman, 'From Forward Defence to Self-Reliance', p. 430.

[5]   Figures taken from Charles EW Bean, *The Official History of Australia in the War of 1914-1918: Vols. I, II, V*, Australian War Memorial, Canberra, 1941, (various editions are available). The Official Histories may also be read online at <www.awm.gov.au/histories/first_world_war/> (20 February 2010).

[6]   Ernest Scott, *The Official History of Australia in the War of 1914-1918: Vol. XI*, Australian War Memorial, Canberra, 1941, Appendix 8, p. 874. By the end of World War I, the AIF, along with its Dominion counterparts from New Zealand and Canada, had earned a reputation as a highly effective and professional component of a coalition army, the British Expeditionary Force (BEF). Arguably, the development of the legend of Anzac during this period still permeates the Australian Defence Force's mindset today and has an influence on expeditionary operational activity.

[7]   During World War II the policy ostensibly resulted in Australia fielding two separate armies - the AIF, which initially deployed to the Middle East, Malaya and the islands to our north - and the militia, which fought against the Japanese in Australia's then New Guinea Territories. Interestingly, both forces were expeditionary in nature.

[8]   W Tow, 'ANZUS: Regional versus Global Security in Asia?', *International Relations of the Asia Pacific*, vol. 5, 2005, p. 201.

[9]   Department of Defence, *The Defence of Australia 1987*, Australian Government Publishing Service, Canberra, 1987.

[10]   Cheeseman, 'From Forward Defence to Self-Reliance', p. 438.

[11]   G Evans & B Grant, *Australia's Foreign Relations*, Melbourne University Press, Melbourne, 1995, pp. 29-30.

[12]   K Beazley, Minister for Defence, *Selected Speeches 1985-89*, Directorate of Defence Publications, Canberra, 1989.

[13]   Paul Dibb, 'Australia-United States', in Brendon Taylor (ed), *Australia as an Asia Pacific Regional Power: Friendships in Flux?* Routledge Publications, New York, 2007, p. 38.

[14]   Details of Australia's commitment to the ANZUS and other security treaties and arrangements during the 1950s and 1960s are well articulated in McNeil, *To Long Tan*.

[15]   Dibb, 'Australia-United States', p. 34.

[16]   Dibb, 'Australia-United States', p. 5.

17   In a presentation to the Expeditionary Operations elective a presenter articulated in a very real sense that, the South-West Pacific during World War II aside, every operation ever mounted by Australia offshore, irrespective of time or distance, has been expeditionary in nature.

18   A Stephens, 'The Defence of Australia and the Limits of Land Power', *Security Challenges*, vol. 3, no. 4, November 2007, p. 30.

19   Stephens, 'The Defence of Australia and the Limits of Land Power', p. 32.

20   G Mills, *Ten Counterinsurgency Commandments from Afghanistan*, Foreign Policy Research Institute, Washington DC, 2007, quoted in Stephens, 'The Defence of Australia and the Limits of Land Power', p. 32.

21   Williamson Murray, 'Thoughts on Military History and the Profession of Arms', in Williamson Murray and Richard Sinnreich (eds) *The Past as Prologue: The Importance of History to the Military Profession*, Cambridge University Press, Melbourne, 2006, p. 83.

22   George R Lucas, 'This is not your Father's War - Confronting the Moral Challenges of Unconventional War', *Leadership & Ethics Papers*, 2/2009, Australian Defence College, Canberra, 2009, p. 9.

23   Royal Australian Air Force, *AAP 1000-D, The Air Power Manual*, Air Power Development Centre, Canberra, 2008, p. 169.

24   Australian Defence Force, *Amphib 2014: Australia's Amphibious Concept*, Canberra, 14 October 2009, p. 7.

25   Sanu Kainikara, 'NATO in Operation ALLIED FORCE', in Keith Brent (ed), *Air Expeditionary Operations from World War II until Today*, Proceedings of the 2008 RAAF History Conference, Air Power Development Centre, Canberra, 2008, p. 108.

26   Kainikara, 'NATO in Operation ALLIED FORCE' p. 108.

27   F Brenchley, 'The Howard Defence Doctrine', *The Bulletin*, 28 September 1999.

28   Tow, 'ANZUS: Regional versus Global Security in Asia?' p. 210.

29   Dibb, 'Australia-United States' p. 33.

30   H White, 'Anzac, our Achilles heel?', *The Age*, Melbourne, 24 May 2007.

31   Tow, 'ANZUS: Regional versus Global Security in Asia?' p. 199.

32   Department of Defence, *Defending Australia in the Asia Pacific Century: Force 2030*, Canberra, 2009.

Is the Australian Defence Force too Stove-Piped to Effectively Undertake Expeditionary Operations?

Major Damien McLachlan

> Our expansive strategic geography requires an expeditionary orientation on the part of the ADF at the operational level, underpinned by requisite force projection capabilities.
>
> *Defending Australia in the Asia Pacific Century: Force 2030*[1]

The recent purchase of four C-17's and upgrades to the C-130 fleet combined with the impending introduction into service of two new *Canberra* class amphibious ships (LHD) will give the Australian Defence Force (ADF) unprecedented force projection capabilities.[2] The question now is whether the ADF has the required expeditionary orientation to make maximum use of these capabilities. Many would argue that the recent operational success of the ADF, particularly in East Timor in 1999 and 2006, and current operations in Iraq and Afghanistan, demonstrate that the ADF is expeditionary. Being expeditionary, however, is not the same as having an expeditionary orientation and others would comment that the ADF has been extremely lucky in these deployments, with the exception of deployments to East Timor; the ADF has not deployed joint forces.[3] An analysis of recent expeditionary operations conducted by Western nations: the United Kingdom in the 1982 Falklands war, Operation PALLISER in Sierra Leone 2000, and the United States led 1990-91 Gulf War and 2003 Iraq War; demonstrate that joint forces are essential for successful expeditionary operations.[4] Operation ALLIED FORCE in Kosovo 1999, on the other hand, demonstrated that an operation conducted without expeditionary ground forces took substantially greater time and resources to achieve a quasi-successful result.[5] Therefore, this essay will first examine the joint interoperability of the ADF and show that this joint approach is only skin-deep. The second section will look at the stove-pipes in the ADF; in particular focusing on the influence and control each of the Services has and how this is inhibiting the move towards a joint organisation. The last section will determine if the ADF has an expeditionary orientation and why this orientation is essential. In conclusion, this paper will demonstrate that the ADF has the facade of a joint approach, yet with the pending introduction into service of the LHDs, the ADF is unprepared for the expeditionary orientation required to maximise this capability.

The Joint Australian Defence Force

> Our military strategy is crucially dependent on our ability to conduct joint operations in the approaches to Australia – especially those necessary to achieve and maintain air superiority and sea control in places of our choosing. Our military strategic aim in establishing and maintaining sea and air control is to enable the manoeuvre and employment of joint ADF elements in our primary operational environment, and particularly in the maritime and littoral approaches to the continent.[6]

As shown above, the Defence White Paper 2009 clearly defines the requirement for the ADF to be able to conduct joint operations in order to maintain sea and air control in our Primary Operational Environment (POE).[7] This section will examine the current ADF and determine if it is truly a joint organisation, or if the ADF's joint capabilities are limited to specific trades or skills. The establishment of the Vice Chief of the Defence Force (VCDF) Group, Joint Operations Command (JOC), Capability Development Group (CDG) and the Defence Materiel Organisation (DMO) highlight the joint approach that the ADF is adopting. These groups have representation from all three Services and are responsible for increasing the interoperability of the ADF. CDG and DMO facilitate the procedure of equipment procurement for the individual Services as well as trying to ensure the interoperability of this equipment. VCDF Group facilitates the higher-level joint training requirements for the ADF; this includes the Australian Defence Force Academy, Australian Command and Staff College and the Centre for Defence and Strategic Studies. Unfortunately, VCDF Group is also responsible for one of the obvious failures of this joint interoperability, the Australian Defence Force Warfare Centre (ADFWC). In recent years, the ADFWC has been re-roled and renamed to Joint Warfare, Doctrine and Training Centre (JWDTC) and has had the majority of positions outsourced. ADFWC was the repository of joint doctrine for the ADF, however, it quickly lost posting priority from all three Services and as such was unable to fulfil its potential. ADF doctrine instead of being driven from the top down has become a bottom up approach. This has resulted in joint doctrine conforming to service requirements, and not joint requirements driving the single Service doctrine. JOC, on the other hand, is responsible for the command and control of forces deployed on operations or conducting major joint and/or combined exercises. In this role, JOC has been successful, but the failure to co-locate the environmental commands with JOC does limit its planning capability.[8] The creation of these groups has resulted in the Services being able to focus solely on the raise, train and sustain (RTS) function and not on integration with the other Services. No organisation; however, has been identified and resourced to conduct the RTS function for joint expeditionary capabilities and this is a failure of the current structure.

An MRH-90 approaches the forward flight deck of HMAS Manoora *(II)* (Defence)

Another sign of a budding joint approach is the 'single Service equipment management process' now operated by the ADF. Air Force, for example, is responsible for technical regulation of all ADF aircraft. This ranges from technical management of aircraft maintenance and modification processes to the training authority for all aviation technicians. This process has a number of key benefits including, one central agency responsible for technical regulation, and therefore safety levels are consistent across all three Services. There is now consistent training, for example, Army aviation technicians trained for Army multi role helicopters (MRH-90), will have completed the same course and to the same standard as the Navy aviation technicians for Navy MRH-90s.[9] Therefore, when Army MRH-90s aircraft deploy onto a LHD with Navy MRH-90s aircraft, workforce savings and efficiencies are possible. The other obvious advantage is cost, as there is one technical regulatory organisation, one principal training authority and one management process so there is no overlap of responsibilities and no duplication of services. The critics argue loss of control for the non-principal Services; however, the advantages of single Service equipment management heavily outweigh the few disadvantages.

Joint training extends further than just maintenance technicians, telecommunications, catering and medical trainees are all trained at joint training schools.[10] Again, this training process is extremely cost effective, as the number of trainees from each Service makes single Service training inefficient. Joint training also ensures standard processes and procedures across all three Services. In an expeditionary sense, forces embarked onto the current *Kanimbla* class amphibious ships and the heavy landing

ship are required to provide cooks and stewards on a pro rata basis to the ship's messes.[11] The joint training ensures that catering staff are able to integrate effortlessly and this produces greater efficiencies. Currently this joint training is limited to a small number of trades, but expansion to include a larger range of common trades is possible. Additionally, other advantages of this joint training are yet to be recognised by the ADF.[12] The Canadian Forces (CF) has taken this joint training and skills to a new level, mainly due to the contracting of base positions in their new super bases.[13] In particular, navy personnel are filling catering and aviation fire fighter positions in Afghanistan.[14] This flexibility of workforce is one thing that the ADF could also benefit from.

Other organisations such as Joint Logistics Command (JLC) and Joint Health Support Agency (JHSA) also highlight the joint approach of the ADF. Over the past 20 years or so, the ADF has attempted to reduce its logistics tail. This has resulted in the need to combine logistics elements for effectiveness and efficiency. Unfortunately, that does not mean that the ADF uses one logistics information system for all three Services.[15] Further interoperability in this area will lead to improvements in the efficiency and effectiveness of the ADF logistics system. Additionally, the Strategic Reform Program and the Pappas Review into the Defence Budget have both identified the concept of super basing as an efficiency measure that the ADF needs to examine.[16] Super basing is likely to lead to further efficiencies in logistics, support service and the interoperability of force elements. Further, this concept may also lead to increases in the readiness of joint task elements, for example co-locating the Ready Parachute Group with the C-130s would reduce the response time of this organisation.[17] As mentioned earlier the CF has undergone a shift to super basing and combined with civilianisation of base services this has resulted in critical shortages in some trades. The ADF needs to consider this lesson in its move towards super basing.

The ADF has been moving towards joint interoperability for a number of years. The current high operational tempo and pressure on the ADF's combat elements is focusing training onto units and Service specific requirements. Due to time limitation, schedule clashes and lack of higher-level direction, joint training is decreasing in unit training programs. Where joint interoperability has occurred, it has freed up resources and allowed for a closer working relationship between the Services. Unfortunately, this joint training and interoperability seems to be limited to logistics and higher-level command and control elements. Only via the extension of this to combat elements will the ADF truly become a joint force.

The Stove-pipes

Since the creation of the Australian military in 1901, initially two and now the three Services have largely defined how the Australian military forces have operated. As a result, the ADF is built upon the stove-pipes of the three Services. Even today, over 30 years after the creation of a single Department of Defence, these stove-pipes still largely control the ADF.[18] This section will examine the reasoning behind this and how these stove-pipes will be difficult to remove.

In accordance with current direction by the Chief of the Defence Force, each of the Service Chiefs is responsible for the RTS functions of their Service. The JOC Operational Preparedness Requirement (OPR) provides guidance to the Services as to the required quantity and skill level of forces; however, as the JOC OPR serials are not linked to resources, Service Chiefs have some flexibility in training requirements.[19] In this respect, the Service Chiefs decide what skills, tasks, and roles personnel from their Service will perform. The effect of this is that there is no incentive to conduct joint training or maintain joint skills. Service Chiefs are therefore able to focus on 'The War' and not 'A War' as required by the JOC OPR.

When examining the current forces elements deployed, the majority are single Service based. In Afghanistan the Mentoring and Reconstruction Task Force, Special Operations Task Group and Rotary Wing Group are all majority Army units. Most naval fleet assets deploy without personnel from other Services and AP-3Cs and the Control and Reporting Centre when deployed to Afghanistan are essentially Air Force only units. Only HQ Hoint Task Force (JTF) 633, the Force Support Unit and Force Communications Unit are joint organisations. What makes this situation more obviously stove-pipe deployments is that these units, with the exception of the joint units, are assigned to separate NATO commands and do not generally support each other. Although HQ JTF633 is the National Command Element for all of these units, it has no tactical responsibility and provides only administration and reporting functions. This single Service deployment environment encourages the Services to continue with their single Service mentality and does not facilitate joint interoperability.

There are a number of key drivers that show if a force has a joint orientation, including doctrine, equipment procurement process and personnel management. An examination of the doctrine process shows that the ADF has a disparate structure. Ideally, doctrine is designed top down; that is the capstone concepts are developed, followed by the generalised concepts then the specific concepts and finally the training, techniques and procedures. Yet an examination of the ADF doctrine process shows that the three Services develop doctrine independently. As mentioned earlier, the ADF doctrine organisation, ADFWC is now non-existent and its replacement, JWDTC ineffectively manned and tasked to control this process; the result is that the Services control doctrine and joint interoperability is not the guiding principle. So if this is the case for doctrine what about the other elements?

In the resource constrained environment that the ADF currently finds itself in, the three Services are competing against each other for finite resources to maintain current equipment and purchase new equipment. There are two possible solutions, compromise with the other Services and agree to reducing one's own capability, or 'fight the fight' and risk being told what to lose.[20] A look at 2009 Defence White Paper and current equipment acquisition projects demonstrates that fights had been fought and won.[21] Although there have been some minor compromises and loses, and the fact that the majority of major

projects remained in the project schedule for the White Paper without major modification indicates that the Services won their main battles.[22] A look at Army's projects shows the purchase of heavier equipment, yet an expeditionary orientation would identify the requirement for light more easily transportable equipment.[23] Heavier equipment reduces the size of the force that is rapidly deployable by air and/or sea and this indicates that Army has a focus on the conventional land battle and not on expeditionary operations.

An analysis of how the Department of Defence manages personnel shows two different systems. For the Australian Public Service (APS) manning numbers are allocated to each group within the department, known as the Full Time Equivalence - Average (FTE-A). Currently, each group is responsible to ensure that their APS workforce numbers are below the FTE-A level. A second system applies to military personnel, known as Average Funded Strength (AFS). Each Service is required to manage the AFS for personnel from their Service. The key difference is that Navy Strategic Command, for example, manages the Navy AFS regardless of which group personnel are working in, whereas they only manage the FTE-A for APS within Navy group. The problems occur when there are vacancies in the workforce, for example, if Navy was below their AFS they could fill the positions in Navy first and leave the vacancies in the other groups. The flow on effect is that if a Group within the Department of Defence requested extra military personnel to develop joint capabilities, for example VCDF or JOC, the Services know that without a corresponding increase in their AFS, this transfer of personnel would result in vacancies within their Service. This process encourages the Services to look after their own interests first and not the joint organisation. An AFS system where personnel numbers managed on a group basis would assist in alleviating Service control.

The ADF began life as two stove-piped organisations over 100 years ago, and shortly after World War I, the third stove-pipe was created. After looking at the current requirements of the single Services with their RTS requirements and a look at the operational process for deploying force elements, it is clear that the ADF is still stove-piped. When looking to see if the ADF has a joint orientation, the doctrine process, equipment procurement process and personnel management practices all indicate that the Services are more concerned with looking after themselves, than acting in a joint manner. This section has indicated that unless the influence and control of the Services is reduced, the ADF is unlikely to become a truly joint organisation in the immediate future.

Expeditionary Orientation

Before deciding if the ADF has an expeditionary orientation, one must first clarify what is meant by an expeditionary orientation. Asking the three Services produces three different answers. The Navy mindset is that the world's oceans are its POE and therefore it is expeditionary. The Air Force seems to define expeditionary as a deployment to the bare bases of RAAF Base Curtin or RAAF Base Scherger, or a pre-established overseas

airfield. For Army, the answer is unclear and the following examples demonstrate this, the first by Lieutenant General Peter Leahy in 2006 and the second by Major General John Caligari in 2009:

> A glance at Australian battle honours – from the Sudan in the 1880s, through South Africa, both World Wars, Korea, Vietnam, Afghanistan as well as both the wars against Iraq – reveals an expeditionary military culture that in turn supports a grand strategy built on an alliance with the dominant liberal democratic power de jour.[24]

> Given the dispersed nature of the Army and the large distances between its bases and the areas it is expected to deploy forces to, all Land Force operations require an expeditionary mindset which is not currently encapsulated in Army's doctrine or concepts. The formal development of an Expeditionary Orientation Concept is required to mitigate the gap.[25]

These two quotes by senior Army officers seem to contradict each other – although three years separate the quotes and they are given under different federal governments, they raise the question – does the Army have an expeditionary culture yet not an expeditionary orientation? If the Services cannot agree, how can the ADF define what is an expeditionary orientation? Recent history shows the ADF can operate jointly and undertake expeditions but this does not mean that the ADF has an expeditionary orientation or a joint culture.

The 2009 Defence White Paper clearly states that the ADF must be prepared to conduct operations in all parts of the world.[26] The White Paper also identifies the roles of the ADF as ranging from major conflict to humanitarian assistance and disaster relief.[27] The White Paper indicates that the conduct of operations on Australian territorial soil is priority 1, regardless of how unlikely this may be. The priority 2 zone for the ADF is in the Southwest Pacific and the archipelago to Australia's north and it is clearly in this environment that at least some part of the ADF should be structured. An examination of this region shows the lack of infrastructure available to the ADF. Airfields capable of facilitating operations for C-130s are limited, and for C-17s even more so and this is without considering the effect of a major disaster. Therefore, the most likely entry means for the ADF is by amphibious ships. Although most islands in the region have port facilities, these are limited and when the result of a major disaster is considered, these may be unusable. As such, the ADF needs to be prepared to lodge humanitarian teams by sea over an austere beach. The Australian Amphibious Concept considers permanently assigning a high-readiness combat team to the amphibious ships, if so the land forces will be required to complete amphibious competencies.[28] Given the likely scope and duration of this training regime, it is likely that this training requirement will have a major impact on the Army's Brigade rotation cycle.

An expeditionary force will be required to train regularly together. A review of amphibious training activities over the last ten years would indicate that the Army's 3rd Brigade has provided the land force component.[29] Yet surprisingly, when short notice operational tasking has occurred, such as Operation PADANG ASSIST, elements of the 1st Brigade were deployed, even though no recent joint training had occurred between the Brigade and naval elements. In addition, operational tempo and maintenance cycles are limiting the ability to conduct individual and collective training.[30] What is of more concern is that work-up exercises between the amphibious ships and other elements likely to make up the Amphibious Ready Element (ARE) and Amphibious Ready Group (ARG) is not occurring at all.[31] If the ADF was required to deploy an ARE and ARG at short notice to conduct a potentially contested operation in the region, the current training regimes do not provide sufficient time for familiarisation between elements of the task group. Due to operational tempo, the situation is worse for the C-17s and C-130s and the air deployable elements in the ADF.

Although the ADF has a history of conducting expeditionary operations, and is currently conducting them, the ADF does not have a structured, programmed training regime to develop and maintain the skills required to conduct expeditionary operations. This implies that the ADF does not have an expeditionary orientation and unless changes are made to the ADF's training and exercise schedule in the immediate future, it is unlikely to be able to fully exploit the capability provided by the LHDs in 2014.

Conclusion

This paper has examined the ADF to determine if it is truly a joint force with an expeditionary orientation. The command and control function and the equipment procurement process of the ADF are clearly designed to facilitate a joint, interoperable ADF. Combined with this the joint training for logistics and support trades is ensuring that common process and procedures are employed across the three Services. The single Service equipment management agencies and organisations like JLC and JHSA are not only saving resources, but also improving the interoperability of the ADF. Unfortunately, this interoperability does not extend into the combat elements, where real savings for the ADF are possible.

The current single Service stove-pipes of the ADF still maintain a strong influence and control over the employment of the ADF. The JOC OPR should dictate to the Services the quantity and type of forces required by the ADF, however, as resources are not assigned with the JOC OPR serials, the Services control the force structure of the ADF. In addition, the doctrine process of the ADF is broken as it is not being directed by higher-level joint concepts. Even the process of managing the ADF workforce is controlled by the Services, thereby not allowing effective and efficient management of the total workforce. This is particularly relevant to those trades and skills necessary to ensure that the ADF has a balanced workforce necessary for expeditionary operations.

The ADF does not seem to have an expeditionary orientation and the concept is interpreted differently by the three Services. In less than five years, the first of the LHDs will provide the ADF with an unprecedented expeditionary capability. Yet the ADF does not have the training or exercise regime in place to ensure that the appropriate competencies are developed. Given the lack of infrastructure in the region and the likely ADF tasks, unless a training regime is developed now, the ADF will be unable to make maximum use of this capability. The current single Service stove-pipes are inhibiting the ability of the ADF in moving towards a truly joint expeditionary force. Unless these stove-pipes are broken down, it is unlikely that the ADF will be able to undertake effective expeditionary operations in the immediate future.

Notes

[1]   Department of Defence, *Defending Australia in the Asia Pacific Century: Force 2030*, Canberra, 2009, p. 52. This document is also known as the 2009 Defence White Paper.

[2]   The first of the new amphibious ships (LHDs), HMAS *Canberra*, is scheduled for introduction into service in 2014, with the second ship, HMAS *Adelaide*, scheduled for 2015. Defence Material Organisation, Projects - JP 2048 Phase 4A/B - Amphibious Ships, <www.defence. gov.au/dmo/msd/jp2048/jp2048ph4AB.cfm> (1 November 2009).

[3]   In his autobiography, General Peter Cosgrove highlights a number of near misses for the force that deployed to East Timor in 1999. General Peter Cosgrove, *My Story*, HarperCollins Publishers, Sydney, 2006. Dr Bob Breen provides similar examples, in 'Problems of an Expeditionary Force: First Battalion, The Royal Australian Regiment in 1965', *Australian Defence Force Journal*, No. 60, September/October 1986, pp. 29-38; *Struggling for Self-Reliance: Four Case Studies of Australian Regional Force Projection in the late 1980s and the 1990s*, ANU E-Press, Canberra, 2008.

[4]   The US led 1990-91 Gulf War and 2003 Iraq War were both joint operations, conducted with sufficient warning to ensure that forces were able to build up sufficient logistics supplies to easily complete the assigned tasks. The clearly defined chain of command and joint forces commander ensure clear direction for the combat elements. Major William D Dries Jr, *Future Counterland Operations: Common Lessons from Three Conflicts*, United States Army Command and General Staff College, Fort Leavenworth, Kansas, 2003, pp. 6-11; Operation PALLISER effectively employed troops trained and prepared for joint operations and with a clearly defined joint task force commander. This operation is a good example of the benefits of establishing a joint headquarters and conducting joint training. Larry J Woods and Colonel Timothy R Reese, *Military Interventions in Sierra Leone: Lessons from a Failed State*, The Long War Series Occasional Paper 28, Combat Studies Institute Press, Fort Leavenworth, Kansas, May 2008, pp. 60-5; The British operation to retake the Falkland Islands proved to be successful, however, the failure of the force to be prepared for long range amphibious operations and

major command and control issues between the Amphibious Task Group Commander and the Land Component Commander identified the lack of joint command and control in the British Armed forces.

5   Operation ALLIED FORCE was one of the first post-Cold War operations conducted by NATO. The operation required 38,004 air missions over 78 days to force the Serbian military to withdraw from Kosovo. The limitations placed on NATO forces, the lack of land forces to clearly identify targets resulted in the operation taking longer than expected as well as not halting the ethnic cleansing that was occurring in Kosovo. M Lamb, *Operation Allied Force: Golden Nuggets for Future Campaigns*, Air War College Maxwell Paper No. 27, Air University Press, 2002, pp. 22-3.

6   Department of Defence, *Defending Australia in the Asia Pacific Century*, p. 53.

7   The Primary Operational Environment (POE) extends into the Indian and Pacific oceans from the main Australian ports - Sydney, Melbourne, Brisbane, Cairns, Darwin and Perth; Australia's amphibious concept states that the ADF must be prepared to conduct independent amphibious missions within the POE, see Australian Defence Force, *Amphib 2014: Australia's Amphibious Concept*, Canberra, 14 October 2009, pp. 6-7.

8   Headquarters Joint Operational Command (HQJOC) is inherently joint, although it includes a Director General Air, a Director General Maritime and three force assigned organisations (air and space, submarine and Special Forces). The lack of a dedicated Director General Land may limit some aspects of the planning and force design ability of HQJOC. [Editor: the Commander 1st Division in Brisbane currently performs many functions which might be associated with those of a Director General Land located within HQJOC].

9   Both Navy and Army are using the new Multi Role Helicopter (MRH-90). The aircraft provided to each Service is the same with the exception that the Navy aircraft have blade folding and Army aircraft have an Infrared suppression system.

10   The Joint Telecommunications School at Cabarlah, QLD, trains communications operators from all three Services. The ADF School of Catering at HMAS *Cerberus*, Victoria, conducts joint training for ADF catering personnel; the Services conduct single Service modules during the course. The Army School of Health, Wodonga, Victoria, conducts joint basic medical training for the ADF.

11   This is from the author's personal experience and is a preferred requirement for the ships as the catering component of the ship's crew is only sufficient for the permanent crew.

12   These advantages include retention initiatives; for example, this may involve increasing the posting opportunities for Navy catering personnel to Army units to allow additional shore time, and Army catering staff to non-amphibious ship positions.

13   The Canadian Forces was formed in 1968 after the unification of the three traditional Services. This unification was suppose to result in a more joint force that was more responsive to the Government, arguably after 40 years this has not occurred. Major General Daniel Gosselin, 'Hellyer's Ghost: Unification of the Canadian Forces is 40 Years Old', two parts, *Canadian Military Journal*, vol. 9, nos. 2 & 3, 2009, <www.journal.forces.gc.ca/> (15 October 2009).

14   This information is based on the personal experience of a Canadian Forces member of ACSC in 2009.

15   Attempts have been made to simplify the logistics information systems; however, recent equipment purchases, such as the C-17, come with their own additional logistic information systems, this further exacerbates this issue. It can be argued that creating joint commands

at the two-star level with the subordinate directorates retaining their single Service focus, is not a recipe for jointness.

16   Department of Defence, *The Strategic Reform Program 2009: Delivering Force 2030*, Canberra, 2009 and Mr George Pappus, 2*008 Audit of the Defence Budget* - Executive Summary, p. 12. <www.defence.gov.au/publications/ DefenceBudgetAudit.pdf> (12 February 2010). There are already examples of super basing in the ADF with the Multi-User Depots (MUD) at HMAS *Harman* and Leeuwin Barracks.

17   The Parachute Ready Group is currently based in Holsworthy in Sydney's South West, the C-130s are based at RAAF Richmond in Sydney's West. Any short notice deployment of the Parachute Ready Group requires the transportation of forces from Holsworthy to RAAF Richmond and this normally occurs by road.

18   Following the Tange Review in 1973.

19   The JOC Operational Preparedness Requirement (OPR) is a classified document that specifies the readiness requirements of the ADF. In theory, all units in the ADF are linked to one or more serials in the JOC OPR.

20   The reduction in capability is a perception issue. Taking the Joint Strike Fighter for example, there are essentially two models available, a conventional model and a vertical take-off model, that could potentially land on the LHDs. The vertical takeoff model would have greater time-on station for an amphibious force as if it was unable to refuel it could land on the LHD.

21   Department of Defence, *Defence Capability Plan 2009*, *Public Version*, Canberra, 2009.

22   The large amount of equipment provided in the 2009 Defence White Paper, and in particular the reduction of some capabilities to minimum sustainable levels, indicates that the Services did not lose capabilities. The size of the savings required as part of the Strategic Reform Program, further indicated that large savings in the Defence Budget was preferred to cutting capabilities.

23   This trend for heavy equipment applies to our allies, including the US Marine Corps, which recently had its first case of weighing out a ship, prior to bulking out, due to the increasing weight of vehicles. One of the vehicles under consideration for the Army's new Light Protected Vehicle, the Hawkei by Thales, weighs seven tonnes. This would place the vehicle at the upper limit of the CH-47 lift capability. Therefore, the deployment of large numbers of these vehicles can only occur via waterborne landing craft and even then, this will probably be limited to two vehicles at a time.

24   From an address by Lieutenant General Peter Leahy AO, then Chief of the Australian Army, to the Royal United Services Institute of the United Kingdom at the Royal Palace of Whitehall on 8 June 2006. Reproduced in Lieutenant General Peter Leahy, 'The Medium Weight Force: Lessons Learnt and Future Contributions to Coalition Operations', *Australian Army Journal*, vol. 3, no. 2, winter 2006, p. 22.

25   From Head Modernisation and Strategic Planning - Army (HMSP-A) Directive 24/09, 'Army's Next Step - The Land Force: Expeditionary in Orientation', 22 October 2009. Endorsed by ACMC (Army Capability Modernisation Committee) on 14 August 2009.

26   The four operational areas provided, in priority order are: the Australian territorial area, the South Pacific and East Timor, the Asia-Pacific region and the rest of the world. Department of Defence, *Defending Australia in the Asia Pacific Century*, p. 13.

27   Other tasks include intra-state conflict, threats from non-state global actors, domestic security and emergency response. Department of Defence, *Defending Australia in the Asia Pacific Century*, pp. 21-5.

28   Australian Defence Force, *Amphib 2014,* pp. 15-16. These competencies are likely to include sea survival training, emergency station drills, Helicopter Underwater Escape, Nuclear Biological Chemical and Damage Control (NBCD) training as well as additional driver training for driving on and off the ship and onto beaches.

29   This is based on the author's personal experience, having served in both the 1st and 3rd Brigades over the past ten years.

30   Collective involves work-up exercise between the amphibious elements, the land force and the landing craft.

31   The Amphibious Ready Element (ARE) and the Amphibious Ready Group (ARG) are both outlined in Australian Defence Force, *Amphib 2014.*

What are the Shortfalls of MOLE in light of the 2009 White Paper and Joint and Single Service Doctrine Concepts?

Lieutenant Commander Catherine Hayes, RAN

> From a land-centric view our region is a mixture of jungle, mountains, grasslands, lightly timbered plains and urban sprawl. It looks ill-suited to high-tempo manoeuvre operations but step back far enough to see the blue bits on the map and it is perfect. The objectives may usually be on land but the manoeuvre medium is the sea.
>
> Paul Hendley, 2004[1]

'MOLE [Manoeuvre Operations in the Littoral Environment] is one of the [Australian] Army's lead warfighting concepts. It describes how land forces fight as part of an integrated joint force within the littoral environment'.[2] The MOLE warfighting concept stems from the Army's desire to understand its role in Australia's maritime strategy and the complexities of the 'Australian Defence Force's (ADF) Primary Operational Environment [POE]'.[3] MOLE focuses on the conduct of operations in the littoral environment, which it identifies as:

> That area defined by the close proximity of the land, sea and air, where operational effects of land, sea and aerospace power would overlap. It encompasses areas on land that can be influenced by JTF [Joint Task Force] elements operating at or from the sea and those areas of sea that can be influenced by JTF elements operating on or from the land.[4]

MOLE claims to be a joint manoeuvrist warfighting concept which provides an insight into how Australia's military power should be applied.[5] It endeavours to tackle the complexities of operations within the ADF's intrinsically littoral POE, and the scale mismatch between the ADF and regional military powers by applying a manoeuvrist approach to provide a means for our small defence force to achieve disproportionate effects.[6] While MOLE claims to be underpinned by the concept of multidimensional manoeuvre, when viewed from a joint maritime perspective, it has the flavour of an expeditionary continentalist strategy which has failed to exploit the joint nature of multidimensional manoeuvre.[7] In this sense MOLE is a concept which reflects the lack of maturity of the ADF's joint culture and inter-Service understanding. Originally drafted in 2003 MOLE is a forward looking concept, demonstrating an awareness of the ADF's strategic focus and future capability procurements which in light of the 2009 Defence White Paper makes the MOLE concept worthy of further development as a part of a future joint ADF littoral manoeuvre or expeditionary doctrine.

This essay will bring a Navy single Service perspective to the Army's MOLE warfighting concept; however it will also endeavour to view littoral operations in the true context of a joint maritime operation to identify any shortfalls in the concept. In conducting this analysis this essay will draw upon the White Paper, the *Future Joint Operations Concept* (FJOC), the *Future Maritime Operating Concept - 2025* (FMOC), *Adaptive Campaigning - Future Land Operating Concept* (AC-FLOC), and current and developing joint and single Service concepts and doctrine. Furthermore, this analysis will focus on the joint idiosyncrasies of the littoral environment and the decisive actions or multidimensional manoeuvre aspects of MOLE and postulate about the future relevance of the MOLE concept.

The Littoral Environment – Intrinsically Joint

> Although MOLE is predominantly about the use of land forces, it is a joint warfighting concept.[8]

MOLE makes the claim of being a joint warfighting concept, however, from a Navy single Service perspective the concepts of manoeuvre and operations in the littoral environment are intrinsic to a maritime force. At face value the MOLE concept does not break conceptual ground. Utilising the sea and the littoral as a manoeuvre space to support and influence land operations has been a feature of military operations for centuries. For example, in the Second Punic War of 218-201 BCE, control of the sea and the use of the adjacent Mediterranean as a manoeuvre space was employed to avoid the terrain ashore. This was a decisive factor employed by the Romans to defeat the Carthaginians who were forced to undertake a perilous march through Gaul in which more than half their troops wasted away, weakening the Carthaginian army and leading to a Roman victory.[9] In a modern context the Allied island hopping campaign through the Pacific in World War II (WWII) was a prime example of a joint littoral manoeuvre operation. The Pacific campaign of WWII laid the foundation for the concepts of Littoral Manoeuvre and Operational Manoeuvre from the Sea which have become the *raison d'être* of marine forces worldwide.[10] While in a more recent Australian context the basic tenets of littoral manoeuvre have been utilised in recent operations in the Solomon Islands, East Timor, Sumatra and Fiji, albeit in benign and extremely limited discretionary operations.[11]

Despite a long history of military forces using the littoral environment as a manoeuvre space in the ADF, the Navy, Army and Air Force all continue to look at the littoral environment through very different single Service lenses. The nature of operations in the littoral environment however, requires a vision beyond a simplistic single Service perspective, because littoral operations necessitate an interdependence of maritime, land and air forces of an order of magnitude more intimate than any other type of operation.[12] Successful littoral operations require cross-domain planning, training and effects like no other environment. In the absence of an ADF marine force, whose primary role it is to operate in the littoral environment, the ADF has developed concepts for manoeuvre operations in the littoral in a piecemeal and single Service stove-piped fashion. This is

primarily because littoral manoeuvre and amphibious operations in particular have been secondary to what the individual Services perceive as their traditional roles.[13] MOLE has been an early exploration, by the Army, into littoral operations which ambitiously aims to fill a gap arising from the lack of a coherent joint warfighting concept applicable to the ADF's littoral POE.[14] However, MOLE also suffers from a single Service myopia which stems from the ADF's lack of maturity as a joint organisation. The ADF's joint focus and restructuring did not commence until the end of the 20th century and Headquarters Joint Operations Command has only been formed under a Commander Joint Operations since 2008. Fundamentally, the ADF is a joint organisation which articulates joint concepts but has yet to realise the full potential of a joint culture and as a result operations in the littoral pose a considerable challenge to the ADF.

MOLE reflects the ADF's long term warfighting aspirations articulated in the capstone concepts such as FJOC, FMOC and AC-FLOC, all of which identify the requirement for the conduct of operations in the littoral environment based on the ADF's POE. Furthermore, MOLE embraces the tenets of Effects Based Operations, Network Centric Warfare (NCW) and multi-dimensional manoeuvre articulated in FJOC.[15] The MOLE concept is essentially a whole of campaign concept, from initiation and shaping through to transition which aligns with each phase of an ADF operation.[16] Essentially, MOLE passes the joint test when compared to these higher level governing concepts and doctrine. However, when analysed from an operational (and tactical) perspective MOLE lacks joint operational depth and 'has the flavour of an expeditionary continentalist strategy'.[17] From a joint maritime perspective MOLE is a mile wide and an inch deep. It tacitly acknowledges the joint complexity of littoral operations, but then fails to fully exploit the concept of joint and multidimensional manoeuvre which underpins MOLE.[18]

Joint or Multidimensional Manoeuvre

> Traditional manoeuvre theories at the operational (and tactical) level were largely conceived for the land environments of a bygone era.[19]

'MOLE consists of three actions that define certain events – shaping actions, decisive actions and transition actions'.[20] While shaping and transition are inherent elements of all operations the true operational idiosyncrasies of the littoral environment and the multidimensional manoeuvre complexity of the MOLE concept lies in its decisive actions. The decisive actions of MOLE are divided into entry and manoeuvre phases. MOLE's exploitation of multidimensional manoeuvre is primarily focused on the insertion of forces during the entry phase of the operation which 'involves simultaneous deployment of forces by air, land and/or sea' via a 'combination of parachute, air landing, by either fixed or rotary wing assets, or amphibious insertion by landing craft or other sea based transport'.[21] Although MOLE tacitly refers to 'the air and sea as manoeuvre space rather than a transport medium to deploy joint forces,' it fails to identify the full utility of this manoeuvre space and maritime asset beyond the entry phase of the operation.[22]

Modern amphibious or littoral manoeuvre doctrine espouses seamless multidimensional manoeuvre by projecting force from the sea directly to the objective without stopping at the beachhead. Furthermore, modern littoral manoeuvre concepts aim to increase force flexibility and mobility by limiting the force footprint ashore and basing components at sea to enable the force 'to move freely between objectives, poise as required and engage and disengage at will'.[23] MOLE has failed to fully realise or exploit these modern manoeuvrist characteristics of amphibious warfare.[24] Moreover, MOLE lays the continental manoeuvrist foundations to which the globally accepted littoral manoeuvre concepts of Ship to Objective Manoeuvre (STOM), Distributed Operations (DO) and sea basing could be a major force multiplier and/or critical enabler.

Ship To Objective Manoeuvre

MOLE's entry methodology seeks to insert forces close to or onto objectives in order to achieve decisive outcomes, exact surprise upon the adversary and avoid the pause associated with securing and establishing a point of disembarkation.[25] This is not conceptually new as it is a key feature of the existing littoral or amphibious warfare concept known as STOM:

> STOM emphasises focus on the projection of force by both surface and air means directly to the objective from the sea, to dislocate the adversary in time and space. STOM balances high impact with a smaller footprint and offers freedom of manoeuvre to achieve surprise and maintain tempo.[26]

If fully exploited joint or multidimensional manoeuvre and the concept of STOM could offer the MOLE concept a more seamless transition between the entry and manoeuvre phases of the operation. Within the entry phase MOLE articulates a requirement for a sub-phase called exploitation to set preconditions for the manoeuvre phase, however modern joint manoeuvre can negate the requirement for a pause for exploitation.[27] The concept of exploitation appears to reflect the establishment of a beachhead concept or 'the *break in then pour it all ashore* approach that characterised many historical amphibious operations'.[28] This is evidenced by MOLE's specific reference to the establishment of 'an FOB [Forward Operating Base] or force maintenance area for combat support and combat service support (CSS) elements' in the exploitation sub-phase.[29] With the acquisition of the Amphibious Deployment and Sustainment (ADAS) System the ADF will have the capacity to execute STOM inserting 'two company groups by air in two waves and concurrent insertion of two company groups by surface means in multiple waves' thus allowing rapid generation of combat power ashore (potentially to multiple objectives) to facilitate seamless transition between the entry phase and manoeuvre phase with limited requirement for a pause for exploitation.[30] Furthermore, the concept of STOM is conducive to the deployment of small combined arms teams to which the Army's Joint Land Combat and MOLE concept refer.[31] These small combined arms teams are suited to fighting in a complex littoral environment and insertion into a number of dispersed entry locations.[32]

Distributed operations

One of the six requirements for MOLE to be successful is 'the ability to conduct simultaneous landings in a number of dispersed locations'.[33] This multidimensional manoeuvre element of MOLE is akin to the concept of Distributed Operations which is an underpinning tenet of the Australian approach to amphibious operational concepts:

> Distributed Operations refer to discrete tactical activities in separate locations, which maybe dispersed throughout the AOA [Amphibious Operating Area]. Distributed Operations exploit the potential of air and surface assets to manoeuvre directly to objectives providing the potential for synchronised operations.[34]

Although MOLE does not utilise the term Distributed Operations, they are an inherent element of MOLE, as is the Joint Land Combat concept of distributed manoeuvre.[35] MOLE identifies that Distributed Operations require highly flexible and responsive support, joint fires, tactical mobility and command and control (C2), but fails to identify that in the littoral environment this enabling and support capability can be provided by the joint maritime manoeuvre element of a force via the concept of sea basing.

Sea basing

Sea basing aims to keep command, administrative and logistics functions at sea and save the movement and build up of bulk equipment and personnel ashore. This enables the agile manoeuvrist force to which MOLE refers, facilitating rapid deployment, re-embarkation, reconstitution and redeployment of small combined arms teams, and enabling STOM and DO.[36] Whilst MOLE makes fleeting reference to sea basing as a logistics concept which specifically involves CSS and medical, it fails to identify the potential operational advantage offered by sea based C2, rotary wing aviation, maintenance, fuel, and force reconstitution. The introduction into service of the ADAS System will increase the ADF's ability to employ sea basing, MOLE is ideally suited to the sea basing concept and should further exploit the littoral manoeuvre advantage provided by sea basing.

MOLE's Future Relevance

The ADF's 'expeditionary orientation', maritime strategy and POE espoused in the 2009 Defence White Paper, combined with the acquisition of new capabilities such as the ADAS System are the impetus for the ADF to develop joint concepts and doctrine for littoral operations.[37] The reference to an expeditionary orientation in the White Paper is really about strategically setting the future direction of the ADF, shaping public and political decision making regarding the deployment of the ADF outside of Australia, and therefore legitimising force structure and capability acquisition decisions. While

the MOLE warfighting concept was written in 2003 with reference to the 2000 White Paper, it generally aligns with the expeditionary orientation articulated in the 2009 White Paper as it focuses on the ADF's ability to deploy and fight in the ADF's POE. MOLE could be used as the foundations for a joint littoral manoeuvre concept because it is able to accommodate the new ADF capabilities outlined in the 2009 White Paper such as the ADAS System. Furthermore, while MOLE is predicated on the ADF's POE and is a warfighting concept, the elements of the MOLE concept could be utilised in all four of the ADF's principal tasks and in more benign operations such as the non-combatant evacuation and humanitarian aid operations outlined in the 2009 White Paper.[38]

The recently released AC-FLOC 2009 states that:

> Given the littoral character of the POE and the vast spaces between areas of human habitation, Land Force can only be applied in concert with maritime and air forces. The Land Force will need to have an expeditionary orientation, seeing itself increasingly as an air and sea borne force that is almost completely reliant on the other Services for its reach and its ability to shape, manoeuvre, and sustain itself within the POE and beyond.[39]

AC-FLOC recognises the littoral character of the ADF's POE and the requirement for a joint expeditionary focus to ADF operations. Accordingly, the future success of MOLE requires further joint consideration, validation and revision in light of single Service and joint concepts and doctrine if it is to represent a coherent and valid joint concept and successfully exploit the true joint nature of littoral operations. This challenge requires the application of intellectual rigour, inter-Service understanding and dialogue and the appointment of a joint sponsor to give a joint littoral manoeuvre or expeditionary doctrine the requisite joint operational depth and clout. As a starting point, from a single Service or joint maritime perspective, MOLE should be reviewed to include the tenets of maritime manoeuvre in the littoral, STOM, DO and sea basing.

In addition to developing a robust joint concept to enable the ADF to operate seamlessly in the littoral environment, considerable changes to the ADF's structure, procedures and culture will be needed. Such changes align with the joint aspirations in the ADF's capstone concepts (FJOC, FMOC and AC-FLOC), including: common C2 architectures as an enabler to NCW, tailored and integrated logistics systems and processes to facilitate reachback, developments in joint fires to meet emerging capabilities such as the 'maritime-based land-attack cruise missiles', individual training to develop corporate knowledge of amphibious and littoral warfare, and joint collective training and preparedness evaluation to enable critical joint capabilities.[40] The MOLE concept accurately identifies some of the ADF's weaknesses and vulnerabilities in trying to make the concept operationally executable. In that sense MOLE is a starting point, but requires a joint driver to achieve the required structural, procedural and cultural change, and for this reason can only work as a joint concept with a high level joint sponsor, and buy-in from each of the three Services. The requirement for accelerated development in these areas is currently being

driven by the acquisition of the ADAS System which will constitute the largest and most sophisticated amphibious and littoral warfare capability that the ADF has ever had in its inventory. Failure to address these elements of the fundamental inputs to capability will result in a high end warfighting capability which can only be used in low end warfighting scenarios or operations other than war. For this reason a joint littoral warfare or expeditionary doctrine which underpins the development of training and procedures for the employment of the ADF's future amphibious and littoral warfare capabilities is required. The fundamental tenets of the MOLE could lay the foundations for such doctrine.

Conclusion

While the Army's MOLE warfighting concept does not break conceptual ground it has provided a platform for the Army to explore its role in littoral warfare, the ADF's maritime strategy and an expeditionary orientation. If MOLE is to become the 'unifying warfighting concept' it aspires to be, it requires further conceptual revision and development.[41] This will require considerable intellectual rigour, and inter-Service understanding and dialogue to provide MOLE with some joint conceptual clout. In the ADF one of the greatest stepping stones to achieving a truly joint operating concept for littoral operations will be overcoming single Service stove-pipes. This is primarily because littoral operations necessitate cross-domain planning, training and effects like no other environment, which requires a joint culture that the ADF has yet to fully attain.

Despite the cultural challenges MOLE has the potential to be the foundations for a joint littoral warfare doctrine. MOLE accords with the 2009 White Paper and the ADF's capstone concepts, however from the operational (and tactical) perspective it lacks joint depth. In particular, the multidimensional manoeuvre tenets of MOLE fail to fully exploit joint maritime manoeuvre. From a single Service or joint maritime perspective, MOLE needs to be reviewed to include the tenets of maritime manoeuvre in the littoral, STOM, DO and sea basing. These joint maritime manoeuvre concepts could be a major force multiplier and/or critical enabler to the MOLE concept.

Given the ADF's strategic focus outlined in the 2009 Defence White Paper and future capability acquisitions such as the ADAS System there are considerable driving factors for the development of an ADF littoral warfare or expeditionary concept. The Australian Army's MOLE warfighting concept is a good starting point, however, the only future for such a littoral warfare or expeditionary concept is through joint collaboration, development and implementation.

Notes

1   Paul Hendley, 'Archipelagic Manoeuvre Warfare for the ADF', *Defender*, winter 2004, p. 33, <www.ada.asn.au/ defender/Winter2004/ArchipelagicManoeuvreWarfarefortheADF(Defender,Winter2004).pdf> (9 October 2009).

2   Australian Army, *Land Warfare Doctrine LWD 3-0-0, Manoeuvre Operations in the Littoral Environment (MOLE)* (Developing Doctrine), 2004, p. 1–2.

3   Australian Army, *LWD 3-0-0, MOLE*, p. 1–1. The ADF's Primary Operational Environment is defined by Department of Defence, *Defending Australia in the Asia Pacific Century: Force 2030*, Canberra, 2009, p. 51, 'from the eastern Indian Ocean to the island states of Polynesia, and from the equator to the Southern Ocean'.

4   Australian Army, *LWD 3-0-0, MOLE*, p. 1–6.

5   Australian Army, *LWD 3-0-0, MOLE*, p. 1–3.

6   Australian Army, *LWD 3-0-0, MOLE*, p. 1–5.

7   Robert Moyse 'Manoeuvre Operations in the Littoral Environment', in Glenn Kerr (ed) *Peter Mitchell Essays 2003*, Papers in Australian Maritime Affairs No. 14, Sea Power Centre - Australia, Canberra, 2003, p. 73.

8   Australian Army, *LWD 3-0-0, MOLE*, p. 1–3.

9   Alfred Thayer Mahan, *The Influence of Sea Power upon History, 1660-1783*, Little, Brown and Company, Boston, 1890, p. v, available electronically via <www.gutenberg.org> (26 October 2009).

10 Littoral Manoeuvre is the Royal Marines operational level concept. Operational Manoeuvre from the Sea is a United States Marine Corps concept.

11 Alan Hinge, 'Defence Self-Reliance or Free Riding? Lessons of Black September', Paper provided to the ACSC, 2009, p. 20.

12 Hendley, 'Archipelagic Manoeuvre Warfare for the ADF', p. 32.

13 Hendley, 'Archipelagic Manoeuvre Warfare for the ADF', p. 34.

14 Australian Army, *LWD 3-0-0, MOLE*, p. 1–4.

15 Department of Defence, *Joint Operations for the 21st Century: The Future Joint Operating Concept*, Defence Publishing Services, Canberra, 2007, pp. 11-3, available online at <www.defence.gov.au/publications/ FJOC.pdf> (28 September 2009).

16 For example, an operation may be organised into six phases: shaping and force protection, preliminary operations, deployment operations, decisive manoeuvre, stabilisation operations and transition operations.

17 Moyse, 'Manoeuvre Operations in the Littoral Environment' p. 73.

18 Australian Army, *LWD 3-0-0, MOLE*, p. 1–13.

19 Hendley, 'Archipelagic Manoeuvre Warfare for the ADF' p. 32.

20 Australian Army, *LWD 3-0-0, MOLE*, p. 1–13.

21 Australian Army, *LWD 3-0-0, MOLE*, pp. 3–4 & 1–15.

22 Australian Army, *LWD 3-0-0, MOLE*, p. 3–4.

23 Hendley, 'Archipelagic Manoeuvre Warfare for the ADF' p. 33.

24 Hendley, 'Archipelagic Manoeuvre Warfare for the ADF' p. 33.

25 Australian Army, *LWD 3-0-0, MOLE,* p. 1–4.

26 Australian Defence Force, *Australian Defence Doctrine Publication (ADDP) 3.2 Amphibious Operations*, Defence Publishing Services, Canberra, 2009, pp. 1-8.

27 Exploitation being 'On landing, entry forces rapidly expand from the point(s) of disembarkation to conduct a decisive manoeuvre. This expansion provides space for follow on forces and a protective buffer for any support forces', as per Australian Army, *LWD 3-0-0, MOLE,* p. 1–16.

28 Hendley, 'Archipelagic Manoeuvre Warfare for the ADF', p. 33.

29 Australian Army, *LWD 3-0-0, MOLE,* p. 3–10.

30 Amphibious Deployment and Sustainment (ADAS) is being acquired under Joint Project 2048. ADAS is a system of capabilities including two *Canberra* class amphibious ships (LHD), ship-to-shore connector watercraft and one strategic lift ship. Australian Defence Force, *ADDP 3.2 Amphibious Operations*, pp. 1-8.

31 Australian Army, *Adaptive Campaigning: Army's Future Land Operating Concept (AC-FLOC)*, Canberra, 2009, pp. 43-8, see <www.defence.gov.au/publications/AC-FLOC.pdf> (28 September 2009).

32 Australian Army, *LWD 3-0-0, MOLE,* p. 3–2.

33 Australian Army, *LWD 3-0-0, MOLE,* p. 1–19.

34 Australian Defence Force, *ADDP 3.2 Amphibious Operations*, pp. 1-8.

35 Australian Army, *Adaptive Campaigning 2009*, p. 45.

36 Paul Hendley, 'Archipelagic Manoeuvre Warfare for the ADF' p. 33.

37 Department of Defence, *Defending Australia in the Asia Pacific Century*, p. 52.

38 Principal tasks for the ADF include: deterring and defeating attacks on Australia; contributing to stability and security in the South Pacific and East Timor; contributing to military contingencies in the Asia-Pacific region; contributing to military contingencies in support of global s ecurity. See Department of Defence, *Defending Australia in the Asia Pacific Century*, pp. 54-7.

39 Australian Army, *Adaptive Campaigning 2009*, pp. 43-4.

40 'Reachback enables deployed forces to access military and non-military support from the most appropriate source outside the battlespace', Australian Army, *LWD 3-0-0, MOLE,* p. xx.

41 Australian Army, *LWD 3-0-0, MOLE,* p. 1–7.

*Ships of the US Maritime Prepositioning Squadron 2, led by the
MV* Captain Steven L Bennett *(T-AK 4296), manoeuvring near their
home station of Diego Garcia* (Military Sealift Command)

Supporting Power Projection from the Sea: What Sea Basing Means to Australia

Commander David E Mazur, CF

> Seabasing provides … a secure, joint capable, agile, and scalable power projection platform free from the restrictions normally associated with traditional land based installations … a seabase will enable rapid deployment, assembly of combat forces, command and control, precise power projection, reconstitution and redeployment of joint combat power from the sea.
>
> Colonel Armon A Cioppa, US Army[1]

Although the term 'sea basing' may be somewhat new in today's military vernacular, the general concept is far from original. Moving military forces and their supporting elements across the sea was done during the ancient battle of Carthage all the way through to present day military operations. However, the sea was generally used only as a means of transporting personnel, equipment and supplies to a foreign shore to be landed and reassembled prior to conducting an operation. The modern concept of sea basing is significantly different from this as it bypasses the need to land and build-up personnel, equipment and supplies on land. Sea basing allows a land operation to be launched, commanded and supported directly from the sea.

In this essay, I will be looking at the concept of sea basing to determine if it is truly a power projection platform or just a pipe dream for Australia. As the United States (US) conceived the concept, I will first explain sea basing from their perspective. From there I will look at the importance of the littoral environment where sea basing is conducted, and then review Australian policy and doctrine to see if sea basing supports current doctrine. I will then review the pros and cons of sea basing and look at how Australia is, or might modify the American concept. Finally, I will make recommendations regarding the way ahead for Australia prior to concluding. As my focus is sea basing, it is not my intent to define or discuss expeditionary or amphibious operations in detail beyond demonstrating how sea basing may or may not support them. Neither will I attempt to explain the doctrine that drives these operations, although I will introduce some concepts and doctrine that may be impacted by sea basing.

The History behind Sea Basing

The modern concept of sea basing stems from US Navy and US Marine Corps doctrinal reviews brought about by the end of the Cold War. The US Marine Corps developed doctrine that culminated in Operational Manoeuvre from the Sea (OMFTS). This doctrine treats the

sea as a manoeuvre space to be exploited rather than it being thought of as an obstacle.[2] In 2003, to blend the national military policy of forward presence and the US Marine Corps doctrine of OMFTS, the US Navy developed the concept known as Sea Power 21. This vision combines Sea Strike (precise, persistent offensive power), Sea Shield (global defence), and Sea Basing (supporting joint operational independence) as a means to explain how the US Navy will organise, integrate and transform to meet future requirements.[3] This answers the question of how sea basing evolved, but what does it mean? The US Navy and US Marine Corps concept of sea basing is vast in nature. A sea base consists of amphibious ships, an embarked combat force, and maritime prepositioning ships (MPSs). Proponents of the sea base concept believe that fixed land bases are usually in the wrong place, they are difficult to establish or move, and that they are vulnerable to attack.[4] Due to its inherent manoeuvrability and scalability, sea basing could alleviate these land base deficiencies. The typical US amphibious force normally includes three major ships.[5] When amphibious ships are married with a land force of 2200 Marines, along with their rotary and fixed wing elements, it is called an Expeditionary Strike Group (ESG). An ESG is capable of self-sustained mid intensity operations far from home for a period of 15 days.[6] In order to extend the sustainability period, and to expand the ESG force strength to a full battalion size, a fleet of MPSs are employed. Sixteen pre-loaded MPSs are prepositioned around the globe in three squadrons of five or six ships each.[7] These MPSs are capable of supplying and sustaining a full Marine Expeditionary Brigade (MEB) of 15,000 Marines for 30 days. However, there is currently a need to secure a port or major beachhead to allow the MPSs to unload their equipment. The additional Marines that make up the MEB then join their equipment and carry-on with their operation. Removing this need for the MPSs to land their cargo, and allowing the follow-on forces to join their equipment at sea for immediate operations ashore, forms the core of the sea basing concept for the US.

Obviously, the US sea basing concept is on a scale that Australia should not even consider. However, the requirement and underlying concepts that are driving this capability are directly applicable to Australia.

Current Australian Policy and Doctrine

Government policy and the littoral environment

Australia's 2009 Defence White Paper identifies four principal tasks for the Australian Defence Force (ADF) as follows:

- to deter and defeat attacks on Australia

- to contribute to stability and security in the South Pacific and East Timor

- to contribute to military contingencies in the Asia-Pacific region

- to contribute to military contingencies in support of global security.[8]

The 2009 Defence White Paper further defines a Primary Operational Environment (POE) that stretches from the Indian Ocean, up through the island states of Polynesia into the South Pacific, which encompasses all Australian territories. The White Paper clearly recognises the archipelagic and littoral nature of Australia's POE and states that the ADF must have 'an ability to operate within this environment with decisive military effect'.[9] The Navy defines the littoral as 'the areas to seaward of the coast which are susceptible to influence or support from the land and the areas inland from the coast which are susceptible to influence or support from the sea'.[10] Although a specific distance is not clearly defined, a range of between 50 to 250nm is generally understood.[11] The significance of the littoral to ADF operations can be seen in the following facts:

- 71 per cent of the world's surface is covered by the ocean making it the largest manoeuvre area on the planet.

- 95 per cent of the world's population lives within 500 miles of the ocean with over half living within 120 miles of the ocean.

- 95 per cent of the population and infrastructure within Australia's POE are within 100 miles of the coast.[12]

Australia's overall defence policy remains founded on the principle of self reliance.[13] In light of where the population and infrastructure are located within the POE, it is clear that the ADF must be able to conduct and sustain maritime, land and air operations within this littoral environment. Consequently, concepts such as sea basing, which may increase the ADF's ease of deployment, sustainability and operational effectiveness in the POE, must be investigated seriously. To properly frame the concept of sea basing, it is necessary to quickly look at the ADF's current doctrine for operating in the littoral environment. Since air operations, as conducted by the Royal Australian Air Force, cannot be conducted from the sea, I will focus on land and maritime doctrine.

Land warfare doctrine

Within the Australian Army, manoeuvre theory shapes contemporary concepts and doctrine. Manoeuvre theory seeks to shatter the enemy's morale and physical cohesion through a series of actions orchestrated to a single purpose: creating a turbulent and rapidly deteriorating situation with which the enemy cannot cope. In short, the ability to match one's own force strengths with an enemy's weakness at a time and place of one's own choosing is a key component of achieving success. Furthermore, littoral land warfare doctrine developed over the last decade focuses on Manoeuvre Operations in the Littoral Environment (MOLE) and Entry by Air and Sea (EAS).[14] MOLE explained how Australia's land force would exploit the concept of manoeuvre warfare and project military power in the littoral environment. EAS explained how land elements would deploy into an operational theatre by parachute, air-land or by an amphibious

operation.[15] A sea base is inherently manoeuvrable and fully supports the concept of land manoeuvre warfare. Also, it shortens the time required to establish capability ashore prior to conducting an operation. Thus, it enhances current army doctrine and is in no way at odds with it.

Maritime doctrine

Maritime doctrine does not differentiate between blue water and littoral operations in any significant way. It simply identifies the increased complexities of the littoral environment such as operating closer to navigational hazards.[16] The concepts of securing the sea lines of communication, establishing sea control and sea denial are enduring in maritime doctrine, although more complex in the littoral environment.[17] As a result, adopting the sea base concept does not change maritime doctrine. It is simply something the Navy would have to crew, operate and protect by establishing a level of sea control around it.

Amphibious doctrine

Australia's amphibious doctrine defines the littoral differently than that of *Australian Maritime Doctrine: RAN Doctrine 1*, and is as 'those regions relating to or existing on a shore or coastal region, within direct control of, and vulnerable to, the striking power of a maritime expeditionary force'.[18] It is within this environment that the ADF can expect to conduct amphibious operations. Amphibious operations are:

> Military operations launched from the sea by a naval and landing force embarked in ships, landing craft or rotary wing aircraft, with the principle purpose of projecting the landing force ashore tactically in an environment ranging from permissive to hostile.[19]

Although an amphibious force, its equipment and immediate support infrastructure are embarked in a ship, the force's continued logistical sustainment over a beach or through a port is known as sealift.[20] Often, the means of projecting an amphibious force and the sealift required to sustain operations can become blurred. Regardless, sea basing can support both amphibious operations and sealift requirements for a limited period in the littoral environment.

Current amphibious doctrine is attempting to move away from the idea that it is necessary to secure a beachhead or port to provide support prior to commencing operations. At its core, Australian amphibious operations are supported by three key concepts:

- Ship to Objective Manoeuvre (STOM)
- Distributed Operations (DO)
- Sea basing.[21]

STOM focuses on projecting force from the ship by either surface craft or aircraft and delivering them directly to the objective. Helicopters support the quick deployment of light forces, while landing craft allow for the landing of heavier elements. DO takes STOM one step further and supports the ability of projecting force ashore to multiple locations in order to conduct discrete tactical activities. These concepts fully support Army's doctrine of manoeuvre warfare, EAS and MOLE. However, as STOM and DO project force directly to the objective, sea basing is required to provide support as no beachhead or logistical site is secured ashore.

Sea basing is the third tenet that underpins Australia's approach to amphibious operations. The sea basing concept as defined in Australian terms is 'a technique of basing certain land force support elements aboard ship which decreases shore based presence'.[22] *ADDP 3.2 Amphibious Operations* expands on this and discusses:

> Basing force projection, C2 and logistic assets at sea … to reduce the operational pause associated with the build-up of combat power ashore prior to the break out to secure objectives.[23]

In most cases there is simply no reason to introduce a time delay or pause in operations to establish a large logistical footprint ashore. Again, sea basing supports both maritime and land warfare doctrine to a great extent as it facilitates support and enhances maritime and land manoeuvre doctrine.

The Benefits of Sea Basing

There are significant benefits that can be realised by exploiting the concept of sea basing. Simply put, the high sea is a massive space that no one owns or exercises sovereignty over. When operating beyond 12nm from land, the ocean provides freedom of manoeuvre throughout the largest manoeuvre area on the earth.[24] There is no need to seek another nation's approval to use the ocean and it can be exploited 365 days a year.[25] A sea base alleviates the need to deploy forces to a host nation, removes the complexity and delay involved with securing a status of forces agreement, and prevents any diplomatic pressure that allies may experience with basing a foreign military on their soil. This, combined with the ability of ships to quickly embark and carry heavy loads, significantly reduces the time lag required to mount an overseas operation.[26] Also, a sea base is manoeuvrable and defendable which lessens the risk to the deployed force. The attack on the US Marine Corps barracks in Lebanon, the Scud attacks of the 1990-1 Gulf War and the 1992 attacks on the Khobar Towers in Saudi Arabia demonstrate how vulnerable land bases can be.[27] As well, sea basing improves persistence and sustainability of the force during the pre-conflict, conflict and post-conflict period.[28] These qualities support the entire spectrum of littoral operations from the provision of humanitarian aid up to combat operations. Finally, should the operational situation dictate, the sea base can withdraw or redeploy on extremely short notice.

Specific to the ADF's requirement, as Australia's POE has limited port and airfield infrastructure to support the landing of heavy forces, sea basing will reduce the challenge of deploying and sustaining forces within this area.[29] As the majority of Australia's population resides near the coast, and in view of the limited infrastructure in many costal areas in the north, sea basing will be as advantageous for domestic operations as it is for foreign operations. Arguably, the greatest benefit of sea basing is that it improves logistical efficiency, including the provision of supplies, transport, medical, and maintenance support.[30] Sea basing provides for more efficient storage, repair and distribution of equipment and supplies.[31] Maintenance of aviation assets afloat allows for a dedicated, secure and clean workspace with increased repair capability that results in increased aircraft availability.[32] Similarly, dedicated equipment and medical facilities allow for enhanced provision of medical support. All of these benefits back the adoption of the sea basing concept as it supports current doctrine and increases operational flexibility and efficiency. Unfortunately, even with these great benefits, there are still some major drawbacks that must be considered.

The Drawbacks of Sea Basing

Depending on the scale of sea basing being considered, it can be prohibitively expensive. The cost of specialised ships, the price of modifying systems and procuring equipment to facilitate logistic delivery ashore, and the expense of procuring extra land force equipment that can be pre-embarked on the ships could be a major barrier. Specifically designed sea base logistic ships cost upwards of US$1 billion each.[33] On top of this, extra rotary wing assets and landing craft would be required to fulfil a dedicated just in time logistic function. Lastly, true sea basing requires pre-loaded and pre-positioned ships necessitating the procurement of an extra brigade's worth of heavy armour, protected mobility vehicles, artillery and support equipment.

A second challenge to be overcome is the development of new doctrine and the requirement to change military culture. A significant amount of time and staff horsepower would be expended to re-write documentation, conduct experimentation and to convince ADF personnel that sea basing enhances operational capability. Finally, sea basing requires reliable and secure communications. Effective command and control of troops ashore from onboard a ship and the management of just in time logistic support from ship to shore and back, relies heavily on communications. Should communications fail, even for a short period, effective C2, the timely supply of ammunition, rations, spares and the quick response to medical cases would cease.

The Australian Sea Basing Concept

Far from mimicking the US Navy and US Marine Corps large-scale concept, Australia has started to tailor and scale their sea basing concept to exploit its advantages while avoiding the significant costs. Australia's sea basing concept does not fully replace shore basing, but seeks to limit the requirement to build massive stockpiles ashore. Recognising the size and resource restrictions of the ADF, it is not focused on the development and deployment of a pre-positioned maritime force with an extra brigade's worth of equipment.[34] Current sea basing concepts are focused on 'three elements: C2, joint fires and logistics'.[35] In support of STOM and DO, the command element of a brigade or battalion sized force can remain onboard ship, eliminating the need to move headquarters staff and their equipment ashore. With modern communications and situational awareness tools, joint fires can be coordinated and executed from the sea based force. Similarly, shipboard land attack missile systems, long-range naval guns and armed reconnaissance helicopters can provide necessary joint fires for smaller operations, negating the need to move guns, ammunition and personnel ashore. Again, doing this lessens the size of the landing force and subsequently the logistic demand placed on the larger amphibious force. Logistically, keeping advanced medical support and aircraft maintenance personnel onboard ship will again further reduce the logistical burden of landing a force ashore. Finally, the reduction in stockpiling ashore by providing spares, fuel, ammunition and stores directly to the end user from the ship will facilitate supportability and enhance land manoeuvre.

Recommendations

As Australia's sea basing concept develops, I believe there are a few shortcomings that need to be addressed. First, the sea basing concept needs to be developed in a joint environment that includes senior logistic and combat representatives from both the land and maritime elements. This will ensure that each force element selected to remain onboard the ship is acceptable to Army, while also ensuring Navy is able to properly support it onboard ship. Also, consideration must be given as to when it is appropriate to sea base, when a sea base should transition ashore, and when the availability of amphibious ships will not support sea basing. I believe that the duration of some operations requiring sea based support from amphibious ships will be of a length that does not support sea basing. Also, the ability of Navy to establish and maintain a suitable level of sea control to support and protect sea based operations for several weeks needs to be confirmed. Finally, although the strategic sealift capability resident in Joint Project 2048C will go a long way to supporting a sea basing capability, I believe the strategic sealift/resupply that is needed to support sea basing for a large amphibious operation will require the procurement of further shipping. The need to provide sealift to areas where commercial ships do not go, the carrying of specialised cargo, the requirement to loiter on station for extended periods, and the risk of operating in an area of conflict could

cause the reliance on commercial contract to fail. Due to the global financial crisis, there are over 450 container and hybrid Ro/Ro containerships sitting idle worldwide.[36] There are 1550 new ships on order for construction over the next few years. In some cases shipping companies have paid a large deposit and had to walk away from partially built ships.[37] Although not specifically designed to support amphibious lift, for the cost of 20 to 30 crew and under A$50 million, Australia could procure dedicated, new or relatively new commercially designed strategic lift ships. With minor modifications, these ships could greatly enhance the supportability of the sea basing concept.

Conclusion

This essay explained the US concept of sea basing, looked at the littoral environment that makes up Australia's POE and reviewed Australian land, maritime and amphibious doctrine to determine if sea basing is a power projection platform or just a pipe dream for Australia. It is clear that the US Navy and US Marine Corps concept of sea basing is unachievable for the ADF as its size, scope, and global reach are neither affordable nor required. However, this does not mean that the concepts and benefits of sea basing should be ignored, it just needs to be appropriately scaled to fit the ADF's requirements. Sea basing is not a power projection platform but it is actually a power projection concept as it supports existing doctrine and capability. In the Australian context, sea basing simply improves current effectiveness. Furthermore, Australia should develop a sea basing capability as it supports existing land and maritime doctrine while improving deployment timelines, force protection capability, force supportability and manoeuvrability. The only outstanding area of concern is the supportability of the sea basing concept when faced with an enduring operation. This will be addressed somewhat by the procurement of an amphibious strategic sealift capability. However, a lack of traditional sealift capabilities could cause the sea base concept to be unsustainable beyond a few weeks. Although there are other minor areas that should be addressed, as the sea basing concept is further developed, the joint and doctrinal obstacles will be overcome.

Notes

[1]   Colonel Armon A Cioppa, S*eabasing: A Joint Projection Platform*, US Army War College, Pennsylvania, 27 March 2007, p. 1.

[2]   Cioppa, *Seabasing: A Joint Projection Platform*, p. 8.

[3]   Admiral Vern Clark, USN, 'Sea Power 21', *Proceedings*, US Naval Institute, vol. 128, no. 10, October 2002, p. 1, available online at <www.navy.mil/navydata/cno/proceedings.html> (4 November 2009).

[4]   Ronald O'Rourke, *Navy-Marine Amphibious and Maritime Prepositioning Ship Programs: Background and Oversight Issues for Congress*, Congressional Research Service, Washington DC, 15 November 2004, p. 9.

[5]   Each Expeditionary Strike Group usually includes a 40,000 tonne Landing Helicopter Assault or Dock LHA/LHD, a 16,000 tonne landing ship dock, and a 17,000 tonne landing platform dock.

[6]   O'Rourke, *Navy-Marine Amphibious and Maritime Prepositioning Ship Programs*, p. 3.

[7]   O'Rourke, *Navy-Marine Amphibious and Maritime Prepositioning Ship Programs*, p. 4.

[8]   Department of Defence, *Defending Australia in the Asia Pacific Century: Force 2030*, Canberra, 2009, pp. 53-6.

[9]   Department of Defence, *Defending Australia in the Asia Pacific Century*, p. 51.

[10] Royal Australian Navy, *Australian Maritime Doctrine*: *RAN Doctrine 1*, Sea Power Centre - Australia, Canberra, 2000, p. 154.

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[17] Royal Australian Navy, *The Navy Contribution to Australian Maritime Operations: RAN Doctrine 2*, Sea Power Centre - Australia, Canberra, 2005, p. 88.

[18] Australian Defence Force, *Australian Defence Doctrine Publication (ADDP) 3.2, Amphibious Operations*, Defence Publishing Service, Canberra, 2009, pp. 1-3.

[19] Australian Defence Force, *ADDP 3.2, Amphibious Operations*, pp 1-2.

[20] Australian Defence Force, *ADDP 3.2, Amphibious Operations*, pp 1-5.

21   Australian Defence Force, *ADDP 3.2, Amphibious Operations,* pp 1-8.

22   Royal Australian Navy, *The Navy Contribution to Australian Maritime Operations,* p. 251.

23   Australian Defence Force, *ADDP 3.2, Amphibious Operations,* pp. 1-9.

24   Clark, 'Sea Power 21', p. 6.

25   Clark, 'Sea Power 21', p. 8.

26   Clark, 'Sea Power 21', p. 7.

27   Geoffrey Till, *Seapower: A Guide for the Twenty-First Century*, Frank Cass, London, 2004, p. 260.

28   Clark, 'Sea Power 21', p. 8; and Australian Army, *Land Warfare Doctrine LWD 1, The Fundamentals of Land Warfare,* Defence Publishing Service, Canberra, 2006, p. 22.

29   Australian Defence Force, *Amphib 2014: Australia's Amphibious Concept*, Canberra, 14 October 2009, p. 3.

30   Australian Defence Force, *Australian Defence Doctrine Publication (ADDP-D), Foundation of Australian Military Doctrine*, Defence Publishing Service, Canberra, 2005, p. 6.

31   Australian Defence Force, *Amphib 2014*, p. 18.

32   Australian Defence Force, *Amphib 2014,* p. 23.

33   O'Rourke, *Navy-Marine Amphibious and Maritime Prepositioning Ship Programs*, p. 9.

34   Australian Defence Force, *ADDP 3.2, Amphibious Operations,* pp. 1-9.

35   Australian Defence Force, *Amphib 2014*, p. 11.

36   Alexander Jung, Thomas Schulz and Wieland Wagner, 'Shipping Industry Fights for Survival', *Spiegel Online International*, <www.spiegel.de/international/business/0,1518,641513-3,00.html> (4 November 2009).

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What were the Key Lessons for Conducting Expeditionary Operations to Emerge from the 1982 Falkland Islands Campaign?

Lieutenant Commander Malcolm A Ralston, RAN

> The Australian Prime Minister has recently said that Australia would not yield a foot of its territory to another power - he was referring specifically to the Cocos Islands.
>
> Commodore JA Robinson, RAN (Rtd)[1]

On 1 April 1982 the 1813 inhabitants of the Falkland Islands lived on the most remote colony of the British Empire. By 2 April 1982 they had become captives of Argentina in its invasion to reclaim what they refer to as the Malvinas Islands.[2] The Argentinean invasion started one of the most ambitious military operations ever undertaken by Britain in modern history: a war of necessity to retake the Falkland Islands. This was an expeditionary operation that culminated in the Falklands War and ended some 120 days later on 12 July 1982 when the British government considered active hostilities to have ceased.[3] Whether the Falklands War was what either Britain or Argentina had anticipated as the result of their actions is not the subject of this essay, but rather the lesson of how important a maritime capability and strategy with a joint focus is for an island nation.[4] This was a lesson that Britain learnt as the result of war, hopefully Australia will not require the same level of conflict to move forward and realise a truly joint maritime strategy.[5]

Expeditionary in the Australian Context

> So expeditionary deployments were in no sense precluded by the 'defence of Australia' policies of the 1980s. Nonetheless, they did place much less emphasis than previous policies on operations to defend Australian interests beyond the continent, and it is worth asking why.[6]

The 1982 Falklands War provided the world with its first taste of modern conventional war between two states armed with ships, aircraft missiles and land forces. It was a war that consisted of naval battles, amphibious operations, strategic lift, and air and land warfare. Furthermore, for Britain it was an expeditionary operation of enormous undertakings considering the distances involved.[7] A war that was conducted over 7000 miles from home base and 3300 miles from the closet support base, the Ascension Islands.[8] Once committed to war the British had four operational objectives: establish a

sea blockade around the islands, recapture South Georgia, gain sea and air supremacy around the Falklands and recapture the Falkland Islands.[9] These are the type of objectives that could be expected in an Australian context if Australia deemed it necessary to protect its sovereignty or that of one of its regional neighbours.

The importance that the Australian government places on the Australian Defence Force's (ADF) ability to conduct such operations is at the core of the 2009 Defence White Paper, *Defending Australia in the Asia Pacific Century: Force 2030*, where expeditionary is referred to four times in the 140 page document. The White Paper explains the need to take into account the importance of both the '"continental" or "defence of Australia" approach and the "global" or "expeditionary" approach', when considering defence planning.[10] Furthermore, it describes it in terms of our geography, that 'our expansive strategic geography requires an expeditionary orientation on the part of the ADF at the operational level, underpinned by requisite force projection capabilities'.[11] In an operational sense if the ADF is to have an expeditionary orientation it must adopt a joint maritime strategy to ensure that it can exploit its true potential and make use of the capability enhancements coming online over the next two decades.

The Falklands War provides insight into why a maritime strategy is important for an island nation and also the many difficulties Australia might expect to encounter in its own regional neighbourhood if it was forced to conduct expeditionary operations far from its shores. Additionally, and more closely related to the Falkland's campaign, Australia may be required to protect its sovereignty in remote regions such as the Heard/McDonald Islands or the Cocos Islands.[12] Although unlikely in the short to medium term the increased global appetite for ever decreasing resources may see these islands and the surrounding exclusive economic zones become more attractive for exploitation by uninvited parties. Nevertheless, more likely will be the necessity for Australia to continue to react to security, instability and humanitarian issues within the South Pacific region and East Timor.[13] The security, instability and humanitarian issues that currently affect the region require a force capable of conducting and sustaining expeditionary operations over long distances. Our ability to undertake such operations with a relatively small force and the vast logistics supply chain that are required mean that Australia should focus on a maritime strategy that is joint in nature. Britain's single focus on continental defence prior to the Falklands saw it move away from a maritime strategy to the point that had the Nott Defence Review been realised its ability to launch, let alone win the Falklands campaign, would have been doubtful.[14]

Expeditionary Orientation as a Maritime Strategy

> The British could have won the war with nothing more than superiority
> in sea control.[15]

Australia relies almost entirely on the sea lines of communication for trade, it also relies on this medium to conduct and sustain expeditionary operations offshore and to a lesser extent on the mainland. Yet Australia's ability to conduct such operations was severely reduced during the late 1970s and into the early 1990s where the strategic policy focused on 'defence of Australia'.[16] Although this concept was not the fortification of the continent as some commentators believe, it did see a shift away from the requirement to conduct expeditionary operations.[17] During this period our maritime force capability was reduced significantly with the loss of the aircraft carrier and fixed-wing Fleet Air Arm and the retirement of the guided missile destroyers without replacement in the late 1990s which left another major maritime capability gap, that of a maritime air warfare capability. With only HMAS *Tobruk* (II) and the six heavy landing craft, our ability to conduct amphibious operations was also very limited. Capability gaps as significant as these take a long time to replace. Although Australia's maritime capability started to improve in the late 1990s with the introduction into service of the *Kanimbla* class amphibious ships and continued into the 2000s with the guided missile frigate upgrade program, these were, and continue to be, stop gap measures. Significant maritime capability enhancements will not be seen until the arrival of the *Canberra* class amphibious ship, *Hobart* class destroyers, strike weapons and additional submarines which are to be introduced over the next two decades.[18]

Similarly, the Royal Navy (RN) suffered significant maritime capability in the 1960s when British governments adopted a continental ground strategy which favoured the Army and Air Force at the expense of the Navy.[19] The Falklands War proved the importance and worth of a capable maritime force that was able to: conduct amphibious operations, provide the supply chain required to sustain the ground forces, and gain and maintain sea control.[20] Britain established sea control very early in the war, although the constant threat of Argentinean submarines meant that it was not totally one sided; Britain had a significant advantage.[21] Sea control was such an important element of the Falklands campaign for both sides that the side without it had very little chance of ever winning the war, regardless of how proficient their land forces were.[22]

The importance of sea control, amphibious operations and sea lift during the Falklands War provides a key lesson for Australia in future planning. If Australia wants an ADF that is capable of undertaking its principle and secondary tasks 'to deter and defend armed attacks on Australia independently [and] to contribute to stability in the South Pacific and East Timor' it must continue to be outward looking and adopt the maritime strategy articulated in the 2000 Defence White Paper and reiterated in the 2009 version.[23]

Defending Australia in the Asia Pacific Century addresses what are substantial deficiencies in Australia's current force structure, that of the ability to independently conduct and sustain expeditionary operations and implement effective sea denial and control. However, there continues to be considerable debate over the type of maritime force structure that Australia should have. A few, like Hugh White, are focused on sea denial through the use of submarines and strike aircraft and opposed to 'wasting' our limited defence budget on expensive surface ships such as the AWDs.[24] Paul Dibb on the other hand argues that Australia should not neglect any of the elements of a capable maritime force such as mine and anti-submarine warfare through the use of both sub-surface and surface ships.[25] Furthermore, Dibb asks the question:

> Have we moved away from the defence of Australia and our regional commitments as the primary drivers of the force structure to an expeditionary force primarily designed for operations alongside our US ally in places such as the Middle East?[26]

I would argue that 'expeditionary' is not the issue and that the ADF should have an expeditionary orientation. However, Paul Dibb may be correct when he questions whether our force structure is being influenced by current operations (conflicts of choice) and the need to maintain our alliance with the US. But more to the point the strain that the current counter-insurgency operations in Middle East are placing on the ADF may be hampering its ability to make the necessary changes in structure and culture that are required to meet the challenges of *Defending Australia in the Asia Pacific Century*.

Air Capability as Part of a Maritime Strategy

> For the British, lack of host nation accessibility excluded participation of the Royal Air Force fighters. They had not envisioned a situation in which responsibility for air superiority would rest solely upon the shoulders of their jump jets.[27]

Neither Britain nor Argentina had air forces that were capable of meeting the geographic challenges of the Falklands War. The Royal Air Force (RAF) was structured to meet NATO commitments in Europe and the Argentinean Air Force for possible conflicts with its South American neighbours.[28] For Britain the predominant issue was the lack of a friendly air base which could be used to attain air control over the Falkland Islands. This meant that it had to rely on organic air power provided by the Harriers on board the carrier groups. For the Argentineans their main strike aircraft had to operate at the boundaries of their fuel limits and rely on two tankers, which further restricted their ability to sustain operations. This meant that both sides lacked the required air forces to establish air superiority. Furthermore, Britain's lack of an airborne early warning platform, which severely limited their ability to intercept; resulted in the force being subjected to low flying attacks from both aircraft and missiles.[29] Above all,

geography was the primary limiting factor that affected both sides' ability to achieve air superiority. Geography is particularly relevant to Australia's strategic regional interests and important for the government and military planners to remember that 'crises do not always occur within the range of a friendly air base'.[30]

If Australia was to conduct an expeditionary operation of the same or similar magnitude it would most likely experience the type of air power limitations that the Argentineans endured during the Falklands War. Even though many of the Royal Australian Air Force's current force structure deficiencies should be rectified in the next two decades, with the introduction of air-to-air refuelling, Airborne Early Warning and Control capability, new joint strike fighters and airborne electronic attack, there remains one common limiting factor; all of these platforms are land based. Given that air power is fundamental to sea control and close air support for ground troops, Australia's ability to conduct opposed expeditionary operation against a formidable force will be restricted to regions where land-based air power can reach and be sustained.[31] The importance of being able to project air power at long distances from home base was a lesson the British learnt during the Falklands. A lesson that has seen the British maintain a fixed-wing capability on her carriers even though the Sea Harrier was decommissioned 2006.[32] It has achieved this by using RAF GR7/7As Harriers which are now flown by both the RAF and the RN under Joint Force Harrier, an organisation stood up in 2000.[33] Perhaps if the threat to Australia from a formidable force becomes more apparent the Australian government may realise the important role that the carrier-based aircraft played in the Falklands War and once again consider this capability.

A Maritime Strategy is Joint

> This entails a fundamentally maritime strategy, for which Australia requires forces that can operate with decisive effect throughout the northern maritime and littoral approaches to Australia, and the ADF's primary operational environment more generally.[34]

The 1982 Falklands War proved to Britain that an island nation that wants a true expeditionary capability must have a maritime strategy. Furthermore it demonstrated the importance of joint operations where: 'land, sea and air forces can operate in harmony to exploit mobility and fire power in pursuit of national objectives'.[35] The importance of joint operations saw the United Kingdom establish a Joint Force Operations staff and develop doctrine for a Joint Headquarters and Joint Force Headquarters.[36] However, for many years they lacked true joint doctrine regarding the operational-level planning and integration of air/land/maritime operations.[37] The ADF is currently grappling with this concept and although there is a plethora of doctrine and concepts developed by project teams and the single Services; such as *Army's Next Step The Land Force - Expeditionary in Orientation* and *Amphib 2014: Australia's Amphibious Concept* these are not owned by a joint authority at the appropriate level.[38] The development and ownership of joint

doctrine by a joint organisation, such as Headquarters Joint Operations Command (HQJOC) or the Vice Chief of the Defence Force Group would be an important step forward in moving the ADF's joint culture to the next level. Once joint ownership of doctrine is clearly established at the operational and tactical level collective training and certification can be addressed.

The single Services' collective training and certification regimes for the relevant levels of preparedness are well documented and conducted as required to meet preparedness levels for operations. However, when it comes to preparing and maintaining a joint maritime force for amphibious operations the system is not as efficient or effective as it could be. This is because the workup and certification regime relies on the single Services to prepare the elements to the appropriate level and does not employ an effective collective training or certification regime for the joint force. The main issue that is hampering the effectiveness of the current system is the lack of a joint agency that is able to coordinate and conduct joint collective training and then certify the capability. Under the current ADF organisation this function should reside in the J7 branch of HQJOC and even though it may need significant staff increases to undertake the role this could be achieved by rationalising the individual Services' collective training and certification bodies. An important element of the J7 branch role would be the development of competency standards required to be achieved during the collective certification of a joint capability. The competency standards could be published in a joint tactical publication in a similar vein to the Royal Australian Navy's Australian Fleet Tactical Publication - *AFTP 4(H), Australian Fleet Training Instructions*.[39] These changes will enable the ADF to further embrace the joint nature of its business and implement an improved joint preparedness and certification model before the new capabilities are introduced over the next two decades. If the development of a joint maritime culture languishes then the ADF is going to have a very large inventory of under utilised capability.

Conclusion

> A maritime concept of strategy belongs essentially to the realm of joint military operations. Only through understanding the joint nature of maritime strategy can the role of the Australian land forces be fully appreciated.[40]

Unlike Britain, arguably Australia has not faced a war of necessity since World War II and, although this should be considered fortunate, it has perhaps seen the ADF focus on niche single Service operations to the deterrent of adopting a joint maritime strategy. A strategy that should be fundamental to the ADF given Australia's geography, its reliance on the sea for trade and the significant role it is expected to play in the stability, security and development of its regional neighbours.

Although the Falklands War ended over 27 years ago, the important lessons that it provided for an island nation then are just as relevant today. Lessons such as the importance of a maritime fixed-wing air capability that is not limited to land-based aircraft, the need to be able to conduct amphibious operations and establish and maintain sea control at a great distance from home base. More importantly it demonstrated the need for land, air and maritime forces to operate as a joint force. It is this last point that the ADF will need to further embrace if it is to fully exploit the considerable joint capability enhancements that will be delivered over the next two decades under the 2009 Defence White Paper. The next step forward for the ADF is to build upon the joint maritime strategic culture that has already begun within the single Services and grow the joint organisation to the point that it is able to coordinate, train, sustain and certify the joint maritime force.

Finally, for Australia the 1982 Falklands War should be a noteworthy reminder that regardless of strategic forecasts, an island nation needs a joint maritime strategy at its strategic centre. Why? Because what may appear to be a situation that can be solved diplomatically on one day, could on the next day be a war of necessity.

Notes

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20   Turner, 'The Unobvious Lessons of the Falklands War', p. 54.

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32   '–-'Falklands' veteran Sea Harriers decommissioned', *Merco Press*, <en.mercopress.com/2006 /03/29/falklands-veteran-sea-harriers-decommissioned> (9 March 2010).

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[34] Department of Defence, *Defending Australia in the Asia Pacific Century*, p. 59.

[35] Gueritz, 'The Falklands: Joint Warfare Justified', p. 46.

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[37] Thompson, 'Post-Cold War Development of United Kingdom Joint Air Command and Control Capability', p. 1.

[38] HMSP-A Directive 24/09, 'Army's Next Step - The Land Force: Expeditionary in Orientation', 22 October 2009.

[39] Royal Australian Navy, *Australian Fleet Tactical Publication (AFTP) 4(H), Australian Fleet Training Instructions*, is the RAN's publication that details the competency standards that Fleet units are required to achieve including Mariner Skills Evaluation, Unit Readiness Evaluation and Mission Readiness Evaluation.

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HMAS Kanimbla *crew members stand ready on the flight deck waiting for a Sea King Helicopter to land. The ship was leaving Sydney for Exercise TALISMAN SABER 2009* (Defence)

PART V:
SEMAPHORES

PLAN Song *class submarines* (sinodefence)

China's Re-Emergent Sea Power

Mr Matt Linfoot

The traditional Western view of Chinese history has treated China as a continental power with only a sporadic concern with maritime affairs. In part, this view originated due to the European imposed maritime dominance of China starting in the late 18th and early 19th centuries. China's seaborne achievements, perhaps most well known are the 'treasure fleets' of Zheng He, are all too often overlooked in the face of her capitulation at the hands of mercantilist Western powers.[1] In fact, international sea trade has contributed significantly to China's prosperity for over two thousand years, so when discussing the modern People's Liberation Army Navy (PLAN), it is important to recognise China as a re-emerging sea power.

Soon after the establishment of the People's Republic of China (PRC) in 1949, the need for a maritime defence was well understood as the nascent nation faced a hostile regional outlook. The threat of invasion by the Chinese nationalists from the island of Taiwan was foremost in the minds of the PRC leadership, as was the strong United States (US) military presence, especially after witnessing the effective use of joint and combined sea power during the Korean War. The few littoral craft the PRC operated were no match for either of these more powerful navies. Planning to counter these threats, the infant PLAN was modelled to become a force essentially dedicated to sea denial and coastal defence.

During the 1980s the PLAN received increased attention from military policy makers in Beijing, as the utility of modern, efficient navies became much more visible. This turn to the sea also owed much to the ability of Chinese Navy leader Liu Huaqing to cast off land-centric strategic philosophies and bring credibility to the concept of offshore defence and protecting the 'first island chain'.[2] This new generation of Chinese visionaries promoted the growth of the PLAN, but their task was helped by the strengthening Chinese economy and increased liberalism within the PRC.

The last decade has seen a concerted push by China to modernise and consolidate its naval capability. A strong focus has been the promotion and development of indigenous capabilities, while bridging any capability gaps with acquisitions of foreign platforms and technology. In many instances, reverse-engineering has been used to develop in-country expertise which in turn generates an even greater self reliance in naval capabilities. Significant updates to naval combat and weapon systems have resulted. The Chinese fleet of ten years ago might not have been significantly different in size, but it did not have many of the important technologies that the PLAN now fields. These include an effective indigenous nuclear submarine program, stealth enhancement technologies, advanced indigenous sensor suites and an increasingly sophisticated command and control infrastructure. The PLAN's modernisation is backed by a robust and ever-growing manufacturing base and an increasingly capable design, research and development sector.

Human factors, such as improved military training and professionalism, have also made major contributions to PLAN advancement. China's sailors and officers are increasingly well trained and educated; they are regularly at sea and continually practicing their trade. Any analysis of the PLAN must recognise the professional and technical proficiency of Chinese naval personnel.

China's nuclear deterrent capability is being supplemented by the new *Jin* class nuclear ballistic missile submarines. Meanwhile, the PLAN's next generation of nuclear attack submarines, the *Shang* class, will improve its long range submarine capability. Complementing this has been the further development of conventional submarines including the *Yuan* class, which reportedly uses air-independent propulsion. The PLAN has also acquired 12 *Kilo* class submarines from Russia, an example of covering a perceived capability gap by importing foreign platforms.

The PLAN maintains a large and diverse surface fleet. Significantly, it has removed from inventory many of its aging, shorter endurance vessels, whose effectiveness in modern maritime conflict was somewhat questionable. Instead, the PLAN is developing its next generation of surface combatants, with new indigenous and Russian built warships rapidly replacing those which are obsolete.

Type	Number (building)	
	1997-98	2007-08
Nuclear ballistic missile submarines	1	1 (4)
Nuclear attack submarines	5	5 (1)
Conventional attack submarines	55 (3)	53 (1)
Aircraft carriers	0	0 (1)
Guided missile destroyers	18	27 (2)
Guided missile frigates	35 (2)	47 (4)
Fast attack catamaran	0	40+ (15)
Fast attack and patrol craft	426 (11)	169
Amphibious warfare vessels	107 (5)	269
Supply ships	111+ (3)	90+
Replenishment ships	3	5
Hospital ships	0	3

Changes in the PLAN's existing and planned force structure 1997-2008
(reserve numbers not shown)[3]

Arguably, the most impressive jump in PLAN capability can be seen in the destroyer force. The acquisition of the Russian designed and manufactured *Sovremenny* class destroyer marks a great leap forward. Similarly, the *Luzhou* and *Luyang* classes represent a 'coming of age' in indigenous destroyer design and construction. The development of the destroyer force, especially air warfare capable destroyers, is suggestive of the PLAN's determination to protect its seaborne trade further afield than was previously possible.

Like the destroyers, Chinese frigates have also been the focus of recent attention. Indigenous design has advanced significantly with the advent of the *Jiangkai* class. Larger and more robust than its predecessors, the newest frigate in the PLAN boasts improved air defences and stealth enhancing technologies as well as an organic helicopter for anti-submarine warfare.

The sharp decline in the numbers of active fast attack and patrol craft (FAC) over the last ten years (a 60 per cent reduction), clearly reflects the Chinese shift away from coastal defence towards offshore defence. The PLAN's remaining FACs are generally less capable than comparable vessels in other modern navies. However an exception to this is the *Houbei* class of fast attack catamaran; the PLAN is the only navy to operate an advanced, heavily armed, vessel of this type.

Amphibious warfare vessels are an important PLAN capability with large numbers of ships and watercraft in service. While many of these vessels are restricted to coastal or limited duration operations, they do provide China with a number of strategic options. Indeed, the recent development of the 20,000 tonne *Type 071* assault ship may be an early step towards a much more flexible and perhaps expeditionary PLAN. Also noteworthy are the fleet auxiliaries, which are essential for naval operations in the Pacific. The PLAN maintains an increasing number of tankers and replenishment ships giving Chinese warships far greater endurance and hence reach. The three hospital ships might also suggest that the PLAN is willing to contemplate conducting 'soft power operations', such as humanitarian tasks outside home waters.

Notwithstanding these varied developments, the PLAN continues to rely upon land based air support and does not appear to be developing forces similar to the US Navy's aircraft carrier battle group. This does not mean that such a capability can be ruled out in future. China has been studying carriers for a number of years and has acquired three non-operational carriers for disposal; HMAS *Melbourne* (II) and the ex-Soviet Navy's *Varyag* and *Minsk*. *Varyag* has been under conversion at the Dalian shipyards for some years, and despite a repaint and repairs to the superstructure, seems unlikely to be recommissioned any time soon. Until recently, it was doubtful that Chinese shipbuilding industry had the facilities or technical expertise to build an indigenous carrier. The newly completed Changxing shipyards, however, could be used to construct a carrier from the keel-up, if desired.[4]

Even if China does not pursue the construction of carriers, the PLAN is fast becoming a more capable and credible force. The last decade has seen much consolidation and refinement in the fleet. Sea denial operations, to protect home waters from maritime incursions, no doubt remain an important part of Chinese naval doctrine, but the emphasis has most certainly changed. During the 1980s and 1990s the PLAN developed a capability to defend the 'first island chain'. More recently, the desire to protect China's maritime approaches has led to the development of a fleet for operations further afield into the Pacific, and into a 'second island chain'.[5] In fact, elements of the PLAN have already demonstrated a capability for effective operations in the Indian Ocean.

China's next generation nuclear attack submarines and air defence destroyers are equally capable of providing a defensive 'bubble' around commercial shipping, military sea-lift ships, or a sea control force. This need not, however, suggest that the PLAN is developing an aggressive power projection and sea control force to dominate the Pacific, or planning to challenge other regional navies for sea supremacy in a Mahanian sense. Indeed, the 2008 PRC Defence White Paper states the Navy has been striving to 'gradually develop its capabilities of conducting cooperation in distant waters and countering non-traditional security threats'.[6]

The growth and modernisation of the PLAN is a fascinating insight into how a modern China sees its place in the world and deals with its geo-strategic realities. The PLAN now has the potential to play an important and stabilising role in the region and, in partnership with other navies, across the globe.

Notes

1   G Till, *Seapower: A Guide for the Twenty-First Century*, Frank Cass, London, 2004, p. 22.

2   JR Holmes & T Yoshihara, *Chinese Naval Strategy in the 21st Century: The Turn to Mahan*, Routledge, London, 2008; BD Cole, *The Great Wall at Sea*, Naval Institute Press, Annapolis, 2001, pp. 165-9.

3   These figures come from R Sharpe (ed), *Jane's Fighting Ships 1997-98, and 2007-08*, Jane's Information Group, Surrey, 1997 and 2007.

4   Sinodefence, 'New facility offers carrier building capability', <www.sinodefence.com/research/ new-facility-carrier-building/> (13 February 2009).

5   TM Kane, *Chinese Grand Strategy and Maritime Power*, Frank Cass, London, 2002, p. 73.

6   See China's National Defence in 2008: part v. the Navy, <www.china.org.cn/government/whitepaper/2009-01/21/content_ 17162859.htm> (13 February 2009).

The Chinese destroyer Harbin *in Sydney Harbour* (RAN)

Rear Admiral WR Creswell (RAN)

The Australian Naval Shipbuilding Program of 1909

Dr Gregory P Gilbert

> Should war occur and the imperial squadron be ordered to rendezvous elsewhere, the commonwealth will be naked of sea defence. The whole trade and business life of the commonwealth, property worth many millions, will be at the mercy of any raider, even the weakest, which would be able to carry out any [operation] with the most perfect immunity, and it must be kept in mind that not one penny of the present expenditure on defence will avail to prevent it.

Captain WR Creswell, 4 February 1909[1]

This desperate plea by Captain (later Vice Admiral Sir William) Creswell, the Director of Commonwealth Naval Forces, was yet another of his attempts to convince Australian politicians to act upon their previous pledges to adequately fund a credible local navy.[2] Having described the rundown and dilapidated state of the naval forces inherited from the former State navies, Creswell then pointed out that the Commonwealth had been established to ensure sound defence, and reiterated why naval defence was so important to the new Australian nation. Despite the relatively large expenditure on land forces, Australian sovereignty could only be directly threatened at or from the sea. In the existing climate any raiding enemy cruiser might easily shell the major ports and cities, capture all incoming and outgoing trade, and make prizes of coastal traffic.

Creswell further explained that since the former colonial governments had established their own naval defences the volume of overseas trade and the interests at stake had doubled or even tripled: 'Today under the Commonwealth the defence is not a tithe of the old States' organisation in war value, though it has to defend interests probably three times as great'.[3] Naval defences, he declared, 'are at the front doors of the Commonwealth. It is proper, if only as an indication of what lies behind, that even if small they should be up to date and of high order of effectiveness'. To this end Creswell argued that Australia should first acquire torpedo armed craft because they would furnish her with the best defence value commensurate with the young nation's means and resources. Not only would these craft have the greatest deterrent effect, and the greatest power in return for expenditure but, just as vital, they would be within Australia's capabilities to build, 'and to achieve self-sufficiency in their production is a strong factor in our defence'.

It is clear that from the beginning the Australian Navy was to be much more than just a squadron of ships operating as a sub-set of the Royal Navy and under the direction of the British Admiralty. Creswell's vision for a local navy included its development as an independent organisation; one that controlled its own administration, finances, personnel, training and bases, and was capable of building and sustaining its own ships. He well understood that maintaining effective sea power involved much more than possessing a fleet. He saw that the Australian Navy must be a national endeavour, involving many, and in some ways all, aspects of government and society.

The development of suitable naval infrastructure was a priority, but Creswell and his supporters did not envisage Australia becoming a world leader in naval shipbuilding overnight. They recognised that ship design, research and development, technical standards and many specialist systems remained beyond the Commonwealth's near-term abilities. They understood that it was better to adopt the world's best practices and modify them as necessary to meet local conditions. In the early 20th century, there was only one logical source for such skills, and the Australian Navy would need to capitalise on the deep experience of the Royal Navy. This had the concurrent advantage that Australia could also use the Royal Navy's command, operational, training, and support instructions with only slight amendment. All that was needed was the application of political will and the allocation of sufficient resources to develop local facilities to meet Australian naval needs.

Much of Creswell's frustration grew from the slow progress and changing nature of previously agreed schemes. These appeared subject as much to political calculation as strategic need. In September 1906, Prime Minister Alfred Deakin had announced an initial three year acquisition program of eight coastal destroyers and four torpedo boats, but by December 1907 nothing had been ordered and the force structure had evolved to include nine small submarines and just six coastal destroyers. Two senior Australian naval officers, Commander William Colquhoun and Engineer Commander William Clarkson were already in the United Kingdom.[4] They had been ordered to obtain plans, specifications and cost estimates for the construction of various warships, and in view of the complexity of the task had engaged the services of Professor John Biles, an eminent naval architect.

Biles developed the basic design for a fast, 700 ton, oil burning destroyer especially suitable for Australian conditions and, even before Deakin's December 1907 announcement, agreement had been reached with Scottish builders Messrs. Denny Brothers and the Fairfield Shipbuilding Company for a joint tender. This foresaw the following stages of construction:

(a) a portion to be built completely in England and steamed to Australia

(b) A portion to be cut out and set up in England, then taken apart and shipped to Australia to be put together here

(c) a plant and shipbuilding yard to be established in Australia, and to be taken over at a valuation by the Commonwealth; to be followed by

(d) complete building in Australia.[5]

Deakin lost office in November 1908 and Creswell's plea was instead directed at Andrew Fisher's new Labor administration. It did not fall on deaf ears. Creswell argued in his letter that an order should be placed immediately for three destroyers and on 5 February 1909 Fisher did just this; two to be completed in Britain and one to be prefabricated before being shipped to Australia for assembly. A sum of £250,000, previously set aside for harbour and coastal defences, was allocated to the destroyer purchase and tenders were called for in Great Britain on 13 March 1909.

The broader picture was not lost, and Parliament also allocated money to establish a government shipyard in Australia for the purpose of additional construction. In fact, one of the more important conditions of the tender documents declared that the purchased vessels were to be patterns or models upon which others would be designed and built in Australia. Moreover, the successful tenderer was required to accept from the Commonwealth a number of picked artisans who, during the term of the building of the vessels, were to be employed by the builder in the actual work of construction. By sending these men from Australia and familiarising them with the technical work of naval construction, they would be well fitted subsequently for positions in local building yards.

The launch of HMAS Warrego *(I) at Cockatoo Dockyard, 4 April 1911*
(JC Jeremy Collection)

Fisher authorised the Australian High Commissioner in London, Sir Robert Collins, to accept tenders, and Engineer Commander Clarkson, still serving in Britain, was directed to assist in the analysis and assessment of the tender proposals. Not surprisingly, Clarkson recommended the design previously provided by Professor Biles, and declared that these ships would be superior to any other then in service worldwide. In March 1909 the Denny/Fairfield consortium was announced as the successful tenderer and Clarkson acted as Australia's naval engineering representative in Britain throughout the build.[6]

Such was the genesis of the successful River class destroyers, the first vessels acquired specifically for the modern Australian Navy. HMAS *Parramatta* (I) was launched in February 1910 while its sister ship *Yarra* was launched in April 1910. Both ships were commissioned in Scotland in September and made the long trip to Australia as Royal Navy vessels until they reached Broome in Western Australia. On 15 November 1910 they were formally transferred to the Commonwealth. Meanwhile, work continued on the third destroyer, HMAS *Warrego* (I), which had been laid down in Glasgow in May 1909. By mid 1910 the work was complete and the vessel was then dismantled and shipped to Sydney.

Shortly after the Government's plans were announced in February 1909, the superintendent of Cockatoo Dockyard, Mr Cutler approached the Minister for Defence to express the New South Wales Government's interest in building the new destroyers, and after some discussion it was agreed that the third ship should be reassembled at Cockatoo.[7]

At the time Cockatoo Island was the foremost shipbuilding establishment in Australia with an experienced work force and extensive facilities. Notwithstanding this legacy, and despite a modernisation program undertaken between 1904 and 1908, new facilities for modern naval construction would take another 12 to 15 months to complete. In the meantime, nine men were sent to Britain to gain experience in the construction of the new destroyers of whom six were from Cockatoo.

Warrego's keel was laid for a second time at Cockatoo Island on 1 December 1910 with the destroyer finally completed on 1 June 1912. Actual reassembly took six months longer than initially planned and had not been without problems. By necessity warships are built to the most advanced designs and require robust performance and high reliability. The workers at Cockatoo were certainly not the last in Australia to discover that there are significant differences between commercial and naval shipbuilding techniques. The experience nevertheless proved invaluable, and with the federal government eager to acquire a suitable site for a naval dockyard, Cockatoo was transferred to the Commonwealth on 13 January 1913. The need was indeed urgent, for on 25 January the Minister for Defence, Senator Pearce, arrived for the laying of the keels of the light cruiser HMAS *Brisbane* (I) and two additional River class destroyers HMA Ships *Derwent* (later *Huon* (I)) and *Torrens* (I). Australia had embarked on the first major shipbuilding program in its history.

Whether by logical design or fortunate circumstance, Australia had adopted a single naval shipyard policy. In modern parlance, Cockatoo was the Commonwealth's sole shipbuilding entity. Australia at last had not only its own fleet but also, and more importantly in the long term, its own naval dockyard.

Notes

[1]   GL Macandie, *The Genesis of the Royal Australian Navy*, Government Printer, Sydney, 1949, p. 217. Creswell's emphasis in the original document reinforced his frustration after six years of advocacy without discernible result.

[2]   A biography of William Creswell may be found in G Gilbert (ed), *Australian Naval Personalities*, Papers in Australian Maritime Affairs No. 17, Sea Power Centre - Australia, Canberra, 2006, pp. 53-7.

[3]   Macandie, *The Genesis of the Royal Australian Navy*, pp. 216-8.

[4]   For a biography of William Clarkson see *Australian Naval Personalities*, pp. 35-6.

[5]   Macandie, *The Genesis of the Royal Australian Navy*, p. 218.

[6]   See C Coulthard-Clark, *Without Peer: Sir William Clarkson*, The Warren Centre, Sydney University, Sydney, 2002.

[7]   J Jeremy, *Cockatoo Island: Sydney's Historic Dockyard*, University of New South Wales Press, Sydney, 1998, pp. 22-6.
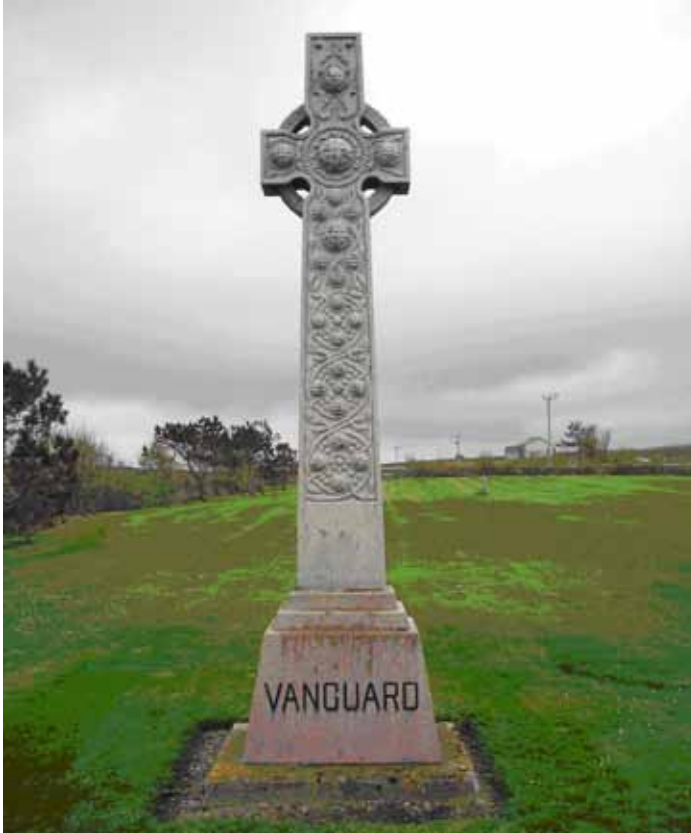
The Vanguard *Memorial in Lyness cemetery is dedicated to all those who died in the disaster, including the two men from HMAS* Sydney *(I)* (D Hobbs)

Those They Left Behind - RAN Memorials in the Lyness Naval Cemetery in Orkney

Commander David Hobbs, MBE, RN (Rtd)

> The atmosphere was always one of monotony and frustration at not being involved in the exciting things that were happening in other spheres of the war. … We did spend a fair amount of time at sea, usually on a sweep as far as the Norwegian coast, but after four or five days we returned to Scapa, or to Rosyth (which we much preferred).
>
> Andrew C Barrie[1]

> Dec 27th 1916. At anchor. I may say here also that one of our two chief stokers died in hospital on the 22nd, and we buried a stoker at the naval cemetery at Kirkwall [sic]. He took bad suddenly on Christmas Eve, and died on Christmas Day. Both chief stoker and stoker were fine fellows and well liked by all.
>
> Stoker Peter Nelson Faust, HMAS *Australia* (I)[2]

Scapa Flow is a large, natural harbour protected on all sides by the landmasses of the Orkney Islands. It has been used as a base by the Royal Navy (RN) since the 18th century and during World War I (WWI) it was the principal base of the Grand Fleet, the largest and most powerful fleet in the world at the time. It included three of His Majesty's Australian Ships; the battle-cruiser *Australia* (I) which served for much of the war as flagship of the Second Battle-Cruiser Squadron and the cruisers *Sydney* (I) and *Melbourne* (I) which formed part of the Second Light Cruiser Squadron between 1916 and 1919.

The Grand Fleet was served by a large shore depot at Lyness on the Island of Hoy, the land-mass on the western side of Scapa Flow (Hoy is the Norse, or Viking, word for 'high' and accurately describes this hilly island. The nearby island of Flotta, which means 'flat', is also accurately described). The base was built up after 1914 to provide fuel, stores and administrative support for the fleet and to act as a base for the boom defence organisation and the large number of drifters that supported the warships when they were in harbour. It continued in use until after World War II (WWII) but was reduced to 'Care and Maintenance' status in July 1946. Most of the accommodation buildings were dismantled in 1957 and, subsequently, eleven of the twelve big oil storage tanks have been emptied and dismantled. The last one has been retained and restored to house large exhibits which, together with the pumping station and its preserved machinery, forms part of a museum which tells the story of the naval presence in Orkney. The base waterfront is still quite recognisable and continues in use for ferries and oil rig support vessels. The boom defence and stores buildings have been refurbished for industrial use.

The Royal Naval Cemetery is situated a few hundred yards to the west of the depot, on a gently sloping hillside that is strikingly silent except for the calls of sea birds. It looks out across the Flow to the east. The small road that leads past it carries on to the empty Port War Signal Station higher up the hillside. The cemetery is beautifully maintained by the Commonwealth War Graves Commission and contains the graves of sailors from both World Wars. There is a Cross of Sacrifice at the centre, between two shelters, in one of which there is a visitors' book and the site is surrounded by a low wall of local stone. It contains the graves of 445 Commonwealth sailors from WWI, 109 of which are unidentified. The majority are from the cruiser HMS *Hampshire*, which struck a mine while carrying Lord Kitchener from Scapa to Russia in 1916; the battleship HMS *Vanguard* which blew up at its mooring in 1917; and the destroyers HM Ships *Narbrough* and *Opal* which were wrecked when they ran onto the Pentland Skerries at high speed in fog in 1918. The cemetery also contains the graves of 14 German sailors who died while their fleet was interned in Scapa Flow between 1918 and 1919. Two hundred WWII burials include 26 men from the battleship HMS *Royal Oak*, which was sunk during a bold raid by *U-47* on 14 October 1939.

Australians were closely involved with the loss of the *Vanguard* which suffered a massive internal explosion on the night of 9 July 1917 caused, it is believed, by faulty cordite charges, incorrectly stowed. HMAS *Sydney* (I) was the nearest ship, anchored about half a mile away; her boats were the first on the scene and rescued the only two men to survive the disaster. Unfortunately two of her own sailors were on board the battleship and were lost.

Both men, Stoker Robert Thomas Houston and Stoker Leslie William Roberts, were unlucky enough to have been sentenced to seven days in cells on 3 July, and appear to have been serving their sentence in *Vanguard* as no other cells were available. They would have spent their last week with little or no bedding and daily picking two pounds of oakum, which was weighed when given to them and then again when received back. Like most of the 804 men who were lost in *Vanguard*, they have 'no known grave but the sea'.

Aged 36, Houston was a veteran of the SMS *Emden* action in November 1914. He was the son of William and Annie Houston of Strabane, County Tyrone in Ireland but his mother had later re-married becoming Annie Peebles of Paisley in Scotland. He is commemorated on the Naval War Memorial on Plymouth Hoe in Devon and on the Roll of Honour at the Australian War Memorial in Canberra. His service certificate survives in the National Archives of Australia showing that, like many others, he transferred to the Royal Australian Navy (RAN) from the RN in 1914.

Roberts, aged 31, was born in England, but his family had moved to Australia and at the time of his death, his father, William, lived in Drummoyne, Sydney. Like Houston he is commemorated on the Naval Memorial in Plymouth and at the Australian War Memorial.

Stoker McCarthy's grave at Lyness (D Hobbs)

When the RAN ships left Scapa Flow to return to Australia in 1919 they left behind the graves of four of their own, who reflect the varied backgrounds of sailors of that time:

- Stoker Rowland Edward Bond is buried in area B just inside the main entrance and to the east of the path. He served in HMAS *Australia* (I) and died on Christmas Day 1916 of acute inflammation of the kidneys, having been transferred to the Hospital Ship *Soudan*. He was the son of Charles and Catherine Bond of Kensington Park, Adelaide, South Australia.

- Able Seaman Arthur Stacey served in HMAS *Melbourne* (I) and is buried in area B. He died of pneumonia on 18 October 1916 aged 38 after being transferred to the Hospital Ship *Plassy*. He had transferred to the RAN from the RN before the war and was the son of James and Eliza Stacey of Shepton Mallet, Somerset.

- Stoker William George Henry McCarthy is buried in area F near the Cross of Sacrifice. He served in HMAS *Sydney* (I) and died of heart failure on 30 August 1918, aged 44, while the ship was engaged in operations in the North Sea. He was the son of William and Mary McCarthy and left a wife Laura, who lived in Plymouth, Devon. He was another who had transferred from the RN, joining *Sydney* prior to her initial delivery voyage in 1913.

- The youngest of the four was Boy 1st Class Frank David Tavender who served in HMAS *Sydney* (I) and died in an accident on 26 January 1918 aged just 16. His father, David, lived in Angaston, South Australia. Like two of the others, he is buried in area B.

RAN casualties for World War I, including RN serving with the RAN and RAN serving with the RN amounted to 171, of whom 13 were killed in action; 13 were accidentally killed; 36 were missing presumed dead; 86 died of illness; 4 died as prisoners of war and 19 were drowned. For a war best known for its huge death toll, the RAN figures are relatively small, but each in its own way represents a tragic loss. Moreover, although it might seem that the sea, accidents and influenza were a greater threat than German guns, the Grand Fleet's role remained essential.

The war could not have been won if the Allied countries had not been supplied with adequate quantities of food for their people and raw material for their industries. Credit to pay for these materials needed also to be maintained. Neither could the Allied armies have been sustained in the field without adequate munitions, logistic supplies and regular reinforcements. Everything needed to travel by ship, and it was only the power of the Grand Fleet which prevented German interference with Allied exploitation of the seas.

The spirit of the Grand Fleet and the naval presence is still tangible in Orkney. The island populations were moved by the losses suffered by the ships based in their midst and the present generation continue to care, ninety years on, for the graves of men who never went home and the memorials to men who were lost without trace, among them six Australians. They have the respect of the people they came so far to defend.

Notes

[1] M Brown & P Meehan, *Scapa Flow*, Penguin, London, 1968, p. 115.

[2] The Diary or Log Book of Peter Nelson Faust, '36 Mess', Stoker, HMAS AUSTRALIA FLAGSHIP, copy held by Sea Power Centre - Australia.

Rudyard Kipling (1865-1936) (RAN)

The Spirit of the Navy

Mr Andrew Forbes

In October 1908 Rudyard Kipling gave a speech at a naval club in which he made some enduring points concerning sea power, the importance of navy people, and the poor public knowledge of naval matters.[1] Although the speech reflects the situation and attitudes of the time, Kipling's words still offer substantial food for thought:

> They say in the Navy, I believe, that a man is often influenced throughout the whole of his career by the events of his first commission. The circumstances of my early training happened to throw me among disciplined men of action - men who belonged to one or other of the Indian Services - men who were therefore accustomed to act under orders, and to live under authority, as the good of their Service required.

> My business being to write, I wrote about them and their lives. I did not realise, then, what I realised later, that the men who belong to the Services - disciplined men of action, living under authority - constitute a very small portion of our world, and do not attract much of its attention or its interest. I did not realise then that where men of all ranks work together for aims and objects which are not for their own personal advantage, there arises among them a spirit, a tradition, and an unwritten law, which it is not very easy for the world at large to understand, or to sympathise with.

> For instance, I belonged then to a Service where the unwritten law was that if you gave a man twice as much work to do in a day as he could do, he would do it; but if you only gave him as much as he could do, he wouldn't do half of it. This in itself made me sympathise with the tradition of other Services who have the same unwritten law, and with the spirit which underlies every service on land and sea - specially on the sea.

> But as you yourselves know well, Gentlemen, the spirit of the Navy is too old, too varied, and too subtle, to be adequately interpreted by any outsider, no matter how keen his interest, or how deep his affection. He may paint a more or less truthful picture of externals; he may utter faithfully all that has been given him to say, but the essential soul of the machine - the spirit that makes the Service - will, and must, always elude him. How can it well be otherwise? The life out of which this spirit is born has always been a life more lonely, more apart than any life there is. The forces that mould that life have been forces beyond man's control; the men who live that life do not, as a rule, discuss the

risks that they face every day in the execution of their duty, any more than they talk of that immense and final risk which they are preparing themselves to face at the Day of Armageddon. Even if they did, the world would not believe - would not understand.

So the Navy has been as a rule both inarticulate and unfashionable. Till very recently - till just the other day in fact - when a fleet disappeared under the skyline, it went out into empty space - absolute isolation - with no means visible or invisible of communicating with the shore. It is of course different since Marconi came in, but the tradition of the Navy's aloofness and separation from the tax-payer world at large still remains.

Isn't it possible that the very thoroughness with which the Navy has protected the nation in the past may constitute a source of weakness both for the Navy and the nation? We have been safe for so long, and during all these generations have been so free to follow our own devices, that we tax-payers as a body to-day are utterly ignorant of the facts and the forces on which England depends for her existence. But instead of leaving the Navy alone, as our ancestors did, some of us are now trying to think. And thinking is a highly dangerous performance for amateurs. Some of us are like the monkeys in Brazil. We have sat so long upon the branch that we honestly think we can saw it off and still sit where we were. Some of us think that the Navy does not much matter one way or the other; some of us honestly regard it as a brutal and bloodthirsty anachronism, which if it can't be openly abolished, ought to be secretly crippled as soon as possible. Such views are not shocking or surprising. After four generations of peace and party politics they are inevitable; but the passengers holding these views need not be encouraged to talk too much to the man at the wheel.

There remain now a few - comparatively very few - of us tax-payers who take an interest in the Navy; but here again our immense ignorance, our utter divorce from the actualities of the Navy or any other Service, handicaps us. Some of us honestly think that navies depend altogether on guns, armour, and machinery, and if we have these better or worse than anyone else, we are mathematically better or worse than anyone else. The battle of Tsushima - in the Sea of Japan - has rather upset the calculations; but you know how they are worked out.[2] Multiply the calibre of a ship's primary armament by the thickness of her average plating in millimetres; add the indicated horse-power of the forward bilge-pumps, and divide it by the temperature of the cordite magazines. Then reduce the result to decimals and point out that what the country needs is more *Incredibles* or *Insuffortables* or whatever the

latest fancy pattern of war-canoe happens to be. Now nobody wants to undervalue machinery, but surely, Gentlemen, guns and machinery and armour are only ironmongery after all. They may be the best ironmongery in the world, and we must have them, but if talking, and arguing, and recriminating, and taking sides about them is going to react unfavourably on the men who have to handle the guns and sleep behind the armour, and run the machinery, why then, the less talk we have on Service matters outside the Service, the better all round. Silence is what we want.

Isn't the morale of a Service a thousandfold more important than its material? Can't we scratch up a fleet of *Impossibles* or *Undockables* in a few years for a few millions; but hasn't it taken thirty generations to develop the spirit of the Navy? And is anything except that spirit going to save the nation in the dark days ahead of us?

I don't know what has happened since the days of Trafalgar to make us think otherwise. The Navy may bulk larger on paper - or in the papers - than it did in Nelson's time, but it is more separated from the life of the nation than it was then - for the simple reason that it is more specialised and scientific. In peace it exists under conditions which it takes years of training to understand; in war it will be subjected to mental and physical strains three days of which would make the mere sea-fight of Trafalgar a pleasant change and rest. We have no data to guide us for the future, but in judging by our thousand-year-old past, we can believe, and thank: God for it, that whatever man may do, or neglect to do, the spirit of the Navy, which is man-made, but which no body of men can kill, will rise to meet and overcome every burden and every disability that may be imposed upon it - from without or within …

The context for Kipling's speech was the continuing importance of sea power to Britain. As an island nation and the centre of a global Empire, Britain relied heavily on seaborne trade for both economic power and sustenance.[3] The Royal Navy was instrumental in protecting this trade, maintaining good order at sea, and transporting the British Army where needed. But there was growing unease that British sea supremacy was slowly being challenged, not least by the naval shipbuilding plans of Germany in the lead up to what became World War I. For Australia in a contemporary setting, there are similar concerns over changing power relationships in the Asia-Pacific region. Notwithstanding a level of protection provided by the *Pax Americana* in the Pacific Ocean, successive Australian governments have adopted a self-reliant posture, with the new White Paper foreshadowing a stronger Royal Australian Navy (RAN) to protect Australia's maritime interests and seaborne trade in an uncertain Asia-Pacific.[4]

Kipling devotes a significant proportion of his speech to the importance of people to the development of naval capabilities, decrying the traditional focus on equipment. Manpower (as it then was) and people (today) are a critical factor in naval power but too often they have been ignored or their importance downplayed. Historically this may have been due to ready acceptance of class status and notions of duty. But today with volunteer professional forces, much greater effort is required to recruit and retain people. As Kipling notes, life at sea is uncomfortable and inherently risky, and it is no longer enough to accept a situation simply because 'it has always been done this way'.

Over the past few years, the RAN has introduced a range of initiatives under the Sea Change program to improve general conditions for its people at sea and for them and their families ashore. The RAN has taken advantage of the Gap Year, whereby school leavers can spend a year with the Australian Defence Force (ADF), and many have then signed up on completion. Furthermore, the RAN has also altered its training continuum to get recruits to sea as soon as possible allowing them to make an early assessment of their own suitability for life at sea. From July 2009, the RAN under its New Generation Navy program will also be restructured to better focus on its raise, train, sustain role, with a greater emphasis on personnel than there may have been in the past. Implicit in these changes are a priority focus on leadership and cultural behaviour to reinforce the importance of people to the RAN.

Where there has been a major change since the era of Kipling's speech is the role of women in a navy. It is only relatively recently that navies have 'allowed' women to go to sea. The implementation of such a policy has not always been easy and navies have grappled with messing and accommodation arrangements and some did not give enough consideration to overcoming long-held cultural attitudes of a traditionally all male working environment. In the RAN's case, these problems have long been overcome. Women assume an equal place at sea and the fact that a commanding officer is female is no longer remarkable.[5]

Kipling further noted the isolation when fleets deploy, and notwithstanding the range of technologies currently available, such as mobile phones, satellite communications and the internet, many restrictions on communication still apply. There is also no avoiding the fact that lengthy deployments still mean long absences from family and friends.

While these remain difficult issues, there are a number of long running programs that help inform people about life at sea and give them a better understanding of the RAN. Under the *Young Endeavour* Youth Scheme, Australians aged between 16 and 23 undertake an 11 day voyage to learn both self reliance and teamwork skills, while also experiencing life under sail.[6] Meanwhile, as part of the ADF Parliamentary Program, many members of parliament have been attached to a variety of warships to not only gain an understanding of that ship's mission and role, but to also experience service life and gain a greater appreciation of naval capabilities, personnel and management issues.

The more contentious aspects of Kipling's speech relate to the general lack of knowledge and understanding of naval matters at that time, leading to an uninformed, and in his mind, dangerous debate about the need for the Royal Navy; his solution was to suggest there be no debate. Fortunately, today it is recognised that informed public debate on defence is not only constructive but an important part of the democratic process. As a demonstration of this public debate, the development of the last two Defence White Papers included extensive public consultation. This is also one reason why the Sea Power Centre - Australia exists; to research, analyse and publish on naval and maritime issues. The increased maritime focus in defence policy outlined in the recently released *Defending Australia in the Asia Pacific Century: Force 2030* is hopefully an indicator of a better understanding of naval issues and the importance of sea power and the Royal Australian Navy to Australia.

Notes

[1]   R Kipling, *A Book of Words: Selections from Speeches and Addresses delivered between 1906 and 1927*, MacMillan, London, 1928, pp. 55-9.

[2]   At Tsushima in 1905 the Imperial Japanese Navy destroyed most of Russia's Second Pacific Squadron.

[3]   During the late 19th century food became a major British import.

[4]   Department of Defence, *Defending Australia in the Asia Pacific Century: Force 2030*, Canberra, 2009.

[5]   See 'Women in the RAN: The Road to Command at Sea', *Semaphore*, issue 19, November 2006.

[6]   'Building skills onboard STS Young Endeavour', *Defence Magazine*, issue 2, 2008-09, pp. 12-3.

HMS Hood*: a symbol of British sea power for two decades* (RAN)

The Yachtsmen and the Mighty Hood

Mr John Perryman

In September 1940 four young Australians, John Shannon, Ian Startup, George Hall and David Hall (not related) joined the Royal Australian Naval Volunteer Reserve (RANVR). They were among a larger group of men from around the continent who answered the call of a recruiting initiative known as the dominion yachtsmen scheme. This scheme was introduced following an appeal to the dominions from the British Admiralty in June 1940 to surge 'gentlemen' with yachting experience into service with the Royal Navy (RN).

At that time the war at sea in the northern hemisphere was being hotly contested between the RN and the German *Kriegsmarine* and men with any amount of sea-going experience were in high demand. Two streams of entry were available within the yachtsmen scheme. The first, stream 'A', catered for men aged between 30 and 40 years who possessed mariner skills and who met the Navy's physical fitness standards for officers of the executive branch. The second, stream 'B' was introduced for yachtsmen aged between 20 and 30 years who were considered to have the academic qualities required for advancement to commissioned rank and who might be promoted following a period of training and sea service as ordinary seamen.

It was in stream 'B' that Shannon, Startup and the two Halls signed up, and within days of their enlistment they found themselves taking passage to England in the liner *Strathnaver*. Unbeknown to them, they were destined to make the ultimate sacrifice in one of the best known naval battles of World War II. Arriving in England in October 1940 the four recruits joined hundreds of RN 'Hostilities Only' ratings undertaking basic training at HMS *Collingwood* situated in Fareham near Portsmouth. The training consisted largely of instruction in seamanship accompanied by the usual 'square bashing' that is synonymous with service life.[1] Wartime conditions at *Collingwood* were austere but from all accounts the Australian yachtsmen took to their training with a will and integrated well with their RN counterparts.

On 23 January 1941, the four Australians were drafted to the battlecruiser HMS *Hood* for consolidation training. At that time, *Hood* was arguably the most famous warship in the world. Displacing almost 45,000 tons and equipped with a main armament of eight 15-inch guns she had been the symbol of British sea power since her commissioning in 1920.

Hood had visited Australia as the flagship of the RN's Special Service Squadron (SSS) when it travelled around the globe on an epic 38,000 mile good will cruise lasting ten months during 1923-24. The six ship squadron visited almost every major Australian port where its 4600 officers and men were warmly received by tens of thousands of well wishers. *Hood* was without doubt the centrepiece of the SSS and the visit firmly cemented

a place for her in the hearts and minds of an adoring Australian public. Naturally the prestige associated with joining such a famous warship was an exciting realisation for the four yachtsmen, reporting for duty in Rosyth, where *Hood* was undergoing urgent mechanical repairs.

Hood's refit lasted two months and during this period both King George VI and Britain's Prime Minister, Winston Churchill, visited the battle-cruiser and addressed her ship's company. Again the esteem in which the ship was held was reinforced when Churchill commented that he hoped that 'after her insides had been put right they would continue to uphold the traditions and maintain the reputation of the famous ship'.[2]

On 17 March 1941 *Hood* threw off the shackles of the Rosyth dockyard, ammunitioned and sailed into the North Sea. There she joined the battleship HMS *Queen Elizabeth* and the cruiser HMS *London* on a blocking mission to intercept the German battleships *Scharnhorst* and *Gneisenau*. The enemy ships were attempting to return to port following a successful two month operation during which they had sunk 22 allied ships totalling 115,622 tons.[3] Frustratingly for the British, the raiders skilfully evaded contact and successfully made their way to the relative safety of the German-occupied French port of Brest.

Following this sortie *Hood* returned briefly to Scapa Flow before proceeding on her next patrol. By then the four Australian yachtsmen would no doubt have found their sea legs and settled down into the familiar pattern of watch-keeping, coupled with the daily routine of closing up at dawn and dusk action stations. This patrol work continued into April when intelligence was received concerning a possible breakout into the North Atlantic by Germany's newest and biggest battleship *Bismarck*.

Commissioned in August 1940, *Bismarck* was considered by many to be the last word in German battleship design. Displacing 50,000 tons at full load, she was armed with a main battery of eight 15-inch guns and a secondary armament of twelve 5.9-inch guns. On 18 May 1941 *Bismarck* sailed under the flag of Admiral Gunther Lütjens from Gotenhafen (Gdynia) in company with the heavy cruiser *Prinz Eugen*. Designated Operation RHEINÜBUNG, their mission was to attack allied convoys, and disrupt British sea lines of communication.[4]

Within days of sailing, the German force was detected at anchor in Kors Fjord near Bergen on the west coast of Norway. Consequently *Hood* and the newly constructed battleship *Prince of Wales* sailed from Scapa Flow with orders to proceed to Iceland to cover a possible breakout through the northern approaches. Meanwhile other units of the British Home Fleet were dispersed to cover areas further south. The British did not know that the German ships had already sailed and were steering a course that would take them to the north of Iceland and through the Denmark Strait.

Ordinary Seaman Ian Startup on board HMS Hood *in Scapa Flow. He was one of four RANVR sailors lost when the battlecruiser was sunk on 24 May 1941*
(Courtesy of John McCutcheon, HMS *Hood* Association)

Onboard *Hood* her crew prepared for the onset of cold weather and went about their normal duties. There had been many alerts in the preceding weeks and it was felt by some that even if the current situation resulted in action the *Hood* was more than capable of handling any 'jumped-up German pocket battleship'.[5] On 22 May, orders were received for *Hood, Prince of Wales* and their attendant destroyers to cover the area to the south west of Iceland in anticipation of a German transit through the Denmark Strait. The following day the British cruisers *Suffolk* and *Norfolk* each made visual contact with the enemy. *Norfolk* was spotted and came under accurate fire from *Bismarck*, necessitating her withdrawal to a safer shadowing position. This contact was quickly communicated to *Hood* which was then some 300 miles distant.

With *Norfolk*'s report there was a perceptible change of mood in the battlecruiser as she increased speed and adjusted her course to intercept the enemy.[6] At midnight on 23 May, *Hood*'s ship's company closed up at action stations where they waited patiently until 0535 the next morning when the two enemy ships were spotted. The two forces were closing rapidly on each other and at 0552 *Hood* opened fire at a range of 25,000 yards. The

Germans were quick to reply, straddling *Hood* with their opening salvos. Moments later the battlecruiser was hit on her boat deck causing a fire to erupt amongst her ready-use ammunition. At 0555 *Hood* signalled an alteration of course to *Prince of Wales* in order to bring their aft turrets to bear. This was followed by a second manoeuvring signal at 0600 at which time *Bismarck*'s fifth salvo struck *Hood* behind her mainmast causing a catastrophic magazine detonation and breaking the ship in two. With her bow pointing skyward and her after part shrouded in dense smoke, the pride of the RN was no more. Minutes later she had disappeared altogether leaving only three members of her ship's company clinging to life in the icy North Atlantic waters.

With *Hood* vanquished the German ships turned their attention to the *Prince of Wales* which was hit repeatedly and forced to retire from the action behind a smoke screen. Although victorious, *Bismarck* had not escaped unscathed. She had received two severe hits. One had pierced a fuel tank leaving a tell-tale trail of oil in her wake, while the other had caused flooding in her bows. Notwithstanding this damage she was still able to make good 28 knots as she and her consort steamed steadily south.

*HMS* Hood *commemorative plaque* (Blue Water Recoveries)

The loss of *Hood*, with 1415 of her crew, stunned the English speaking world and sent a shockwave throughout the RN. In the days that followed every resource available to the Admiralty, including the Australian destroyer HMAS *Nestor*, was committed to the hunt for the *Bismarck* which, having successfully detached *Prinz Eugen* during the evening of 24 May, was steaming independently for Brest to carry out repairs.

Over the next two days *Bismarck* was hounded by a navy intent on revenge. On the evening of 26 May she was crippled by torpedo bombers from HMS *Ark Royal* and with her steering gear jammed and speed reduced it became obvious to Lütjens that it was only a matter of time before the battleships of the British home fleet would overhaul her and close in for the kill. *Bismarck*'s end came on the morning of 27 May when the battleships HMS *Rodney* and HMS *King George V* were directed to the stricken battleship by the *Norfolk*. At 0847 they opened fire and by 1015 *Bismarck* had been reduced to a blazing wreck. Scuttling charges were fired by her crew and a torpedo attack from the cruiser *Dorsetshire* delivered the coup de grace, causing *Bismarck* to heel over and sink at 1040.

In 2001 *Hood*'s wreck was discovered by renowned shipwreck investigator David Mearns. A commemorative plaque was placed on it recording the names of all who were lost in her. Among these were the names of John Shannon, Ian Startup, George Hall and David Hall, four of the young Australian yachtsmen who answered Britain's call in her hour of need.

Notes

[1]   Square bashing is a naval and military term used to describe parade ground training and marching.

[2]   RG Robertson, 'HMS Hood/Battle-Cruiser 1916-1941', *Warships in Profile*, vol. 2, Profile Publications, Windsor, Berkshire, 1973.

[3]   Naval Staff History, *Second World War, Battle Summary no. 5: The Chase and Sinking of the Bismarck*, Admiralty, London, 1948, p. 1.

[4]   Naval Staff History, *Second World War*, p. 2.

[5]   Alan Coles and Ted Briggs, *Flagship Hood: The Fate of Britain's Mightiest Warship*, Robert Hale, London, 1996, p. 199.

[6]   Coles, *Flagship Hood*, pp. 204-5.
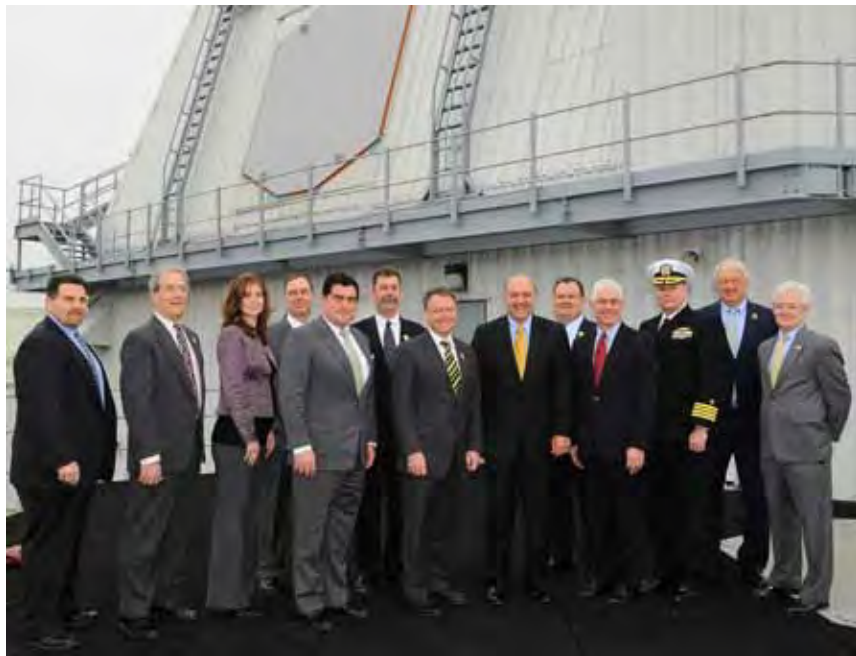
The former Minister for Defence, Joel Fitzgibbon, pictured underneath one of the four SPY-1D(V) arrays destined for HMAS Hobart *(III) at Lockheed Martin's Production Test Facility* (Defence)

The Navy's New Aegis

The 2009 Defence White Paper has reiterated the importance of the three *Hobart* class destroyers (DDGH), which are to be delivered to the Royal Australian Navy (RAN) from 2014.[1] When eventually equipped with transformational weapon systems such as the sm-6 anti-air missile and a long-range land-attack cruise missile, these vessels will greatly extend the at sea and overland reach of the Australian Defence Force (ADF). Even on delivery, however, the DDGH's will be among the world's most capable all purpose warships; effective across the full spectrum of joint maritime operations, from area air defence and escort duties, right through to peacetime national tasking and diplomatic missions.

The heart of any modern warship is its combat system and the DDGHs are to receive the most advanced technology and capability available with the seventh generation of the Aegis command and weapon control system. Developed by the United States (US) Navy in the 1970s and first deployed at sea in 1983, Aegis is a continuously evolving family of weapons systems, and is now fitted in almost 100 platforms in five navies. The world's first complete combat management system, Aegis seamlessly integrates powerful computers, radars and weapon systems to provide simultaneous defence against advanced air, surface and subsurface threats.

The DDGH Combat System (CS) consists of the integration of the Aegis Weapon System (AWS) with other combat system equipment including the Australian Tactical Interface. Five 'cornerstones' make up the Aegis capability:

- **Reaction Time**. Aegis processing is specifically designed to counter high speed 'pop-up' threats. It supports contact detection and tracking, threat evaluation, engagement decision support, and automatic queuing and firing sequences.

- **Coverage**. Multiple sensor arrays provide overlapping coverage, allowing for a 360° picture at beyond horizon range. This offers a single integrated tactical picture, significantly longer engagement ranges and protection against pop-up targets.

- **Firepower**. Fire control illuminators are only needed in a missile's terminal phase allowing for simultaneous engagement of multiple targets, automatically adjusted launch rates and scheduling of mixed weapons types and target/weapon pairing.

- **Environmental/Electronic Countermeasures (ECM) Immunity**. Weapon and fire control systems have special processing to deal with ECM targets and environmental conditions such as surface/rain clutter and ducting.

- **Continuous Availability**. All AWS equipment and auxiliary support systems are designed for redundancy, built for high reliability and include automatic fault detection and isolation.

The AWS to be fitted in the DDGH is known as Baseline 7.1 Commercial-Off-The-Shelf (COTS) Refresh 2 (BL7.1CR2) and is based on the US Navy's Aegis Capability Baseline 2008 (ACB08) which is currently undergoing sea trials. The Australian program has continued the RAN down a path of open architecture and COTS procurement that will significantly change the way in which technology is introduced into the maritime military environment. With COTS refresh cycles occurring at faster and faster speeds, this Aegis architecture will allow major upgrades in capability to occur every 4 to 8 years without the need for extensive special refit opportunities.

The following 'core Aegis' components are contained in the CS:

- Aegis Weapon System
    - Command and Decision (C&D)
    - Weapons Control System (WCS)
    - Aegis Display System (ADS)
    - Aegis Combat Trainer System (ACTS)
    - Operational Readiness and Test System (ORTS)
- SPY-1D(V) Radar
- Mk 99 Fire Control System (FCS)
- Mk 41 Vertical Launch System (VLS)

Other US Navy-based combat system elements to be integrated with AWS include:

- Mk 15 Blk 1B Phalanx Close-In Weapon System (CIWS)
- SPQ-9B Horizon Search Radar (HSR)
- Mk 160 Gun Fire Control System (GFCS)
- Mk 45 Mod 4 Light Weight Gun Mount (LWGM)
- Navigation Sensor System Interface (NAVSSI)
- Common Data Link Management System (CDLMS)
- Cooperative Engagement Capability (CEC)
- Global Command Communication System – Maritime (GCCS-M)
- Naval Fires Control System (NFCS)

- Identification Friend or Foe (IFF)

- WSN-7 Ring Laser Gyro Navigator (RLGN)

- Shipboard Gridlock System (SGS)

- Secure Voice System (SVS)

- Maritime Information Distribution System (MIDS) on Ships (MOS)

- Battle Force Tactical Trainer (BFTT)

Australia's Hobart *class DDGH* (Defence)

From the outside, the DDGH's most obvious Aegis feature will be the four SPY-1D(V) Radar arrays mounted relatively high on the forward superstructure. SPY is a three-dimensional phased-array, fire control quality radar with hemispheric coverage that automatically and adaptively allocates resources to maximise efficiency and minimise horizon/above horizon search frame times. As a tracking and fire control radar, SPY concentrates its resources, as required, to detect and track targets, and support missile guidance. As an anti-ship missile defence radar, SPY provides rapid and timely search for sea-skimming targets. Radar resources are adaptively designated to counter a changing and hostile environment. Thus resources will be dynamically allocated between mission-specific activities, volumetric search and self-diagnostics. The SPY radar computer program is a flexible system design with automated doctrine features to enable rapid emission control and sectoring of radio frequency emissions according to

user-defined parameters. The system's automatic electronic protection measures allow it to operate effectively in high clutter situations and the most challenging electronic warfare and environmental conditions.

AWS automates many functions in the ship's operations room such as picture compilation, tracking, identification, target-weapons pairing, 'quick reaction' or 'late detect' procedures and tactical data link management. These automated functions reside within 'AWS Doctrine'; a set of standard operating procedures that allow the ship's command to adapt to changing operational situations with a series of user-defined 'doctrine statements'. AWS Doctrine is thus adaptable to various rules of engagement and compatible with different tactical control structures. Because the interface controls are easily understood, watchkeepers can adjust as necessary to best exploit the system's reaction time and firepower.

Aegis tactical doctrine can be implemented in either automatic, semi-automatic or manual modes. The first two modes reduce delays introduced by required operator actions. Doctrine statements are essentially 'standing orders' to the CS collated in different types of 'if <expectation>, then <action>' statements that are created/modified and activated/deactivated, one at a time or in sets, by authorised sub-modes. Doctrine statements combine operator and system automation strengths. Principal Warfare Officers and Combat System Operators will use them to allow the combat system to make tactical decisions under human supervision.

The Aegis system procured for the DDGHs will also contain a CEC function. This generates a common and very high quality 'air picture' allowing it to act as part of a wider 'grid' of sensor and weapon platforms. By fusing the track data of all participating units CEC allows any of those units (even one that has not actually detected the target) to engage targets.

CEC will fundamentally change the RAN's approach to air warfare, driving it from a within horizon air defence approach to a beyond radar horizon offensive counter air capability. The ramifications of implementing this technology, in cooperation with related equipment acquisition programs – notably the SM-6 extended range active missile, the F-35 Joint Strike Fighter and the Wedgetail Airborne Early Warning and Control (AEW&C) aircraft – will greatly enhance the ADF's force level air warfare capability, and require some significant reconsiderations of traditional environmental and Service boundaries.

SM-6 combines the SM-2 warhead, the Standard Missile extended range airframe and the AMRAAM (Advanced Medium-Range Air-to-Air Missile) active seeker (Raytheon)

SM-6 for example, uses the AWS, CEC and AEW&C systems to provide an integrated, extended range, detect to engage capability. Fully exploiting the potential of a networked system, SM-6 functions as a node on the net, being cued to a target that can come from the launch ship or a remote sensor (airborne, sea based or land based). Although, like earlier versions of the Standard Missile, SM-6 uses semiactive homing – requiring the AN/SPG-62 radar (in the MK 99 Fire Control System) for terminal guidance – SM-6 also incorporates an active radar capability. It can thus be brought into a homing basket on the basis of CEC and then complete the engagement using its own active seeker, thereby allowing the operator to make best use of the SM-6's more than 200 nm range.

Progress of building and testing the SPY1D(V) radar and Aegis system for the DDGH is on track. Testing on the first Aegis shipset is underway at the Lockheed Martin Production Test Centre in Moorestown New Jersey and is due to complete in November 2009.

Notes

[1] Department of Defence, *Defending Australia in the Asia Pacific Century: Force 2030*, Canberra, 2009, p. 71.

Colonel the Honorable JFG Foxton, CMG, and Captain WR Creswell, CMG, CNF
(National Library 24231804 & RAN)

The Australian Navy and the 1909 Imperial Conference on Defence

Dr David Stevens

A century ago, Australia's Navy, such as it was, seemed in poor shape. The Commonwealth's economy might have depended absolutely on ocean-going trade, but with the seas protected by the Royal Navy there had been little political interest in supporting the local navy. The Commonwealth Naval Forces (CNF) numbered only 48 officers and 147 men and possessed only an outdated light cruiser (built in 1884), nine equally elderly torpedo and gun boats, and the even older turret ship *Cerberus* (1870). Few, if any, of these vessels were capable of effective operations. For the CNF's Director, Captain William Creswell, there was nevertheless some hope of progress. Years of patient lobbying had at last borne fruit and, after some additional urging, the new Australian Prime Minister, Andrew Fisher, had agreed to the acquisition of a destroyer flotilla that would eventually expand to 23 vessels.[1]

To Fisher, the destroyers were to have two major functions. First, they would support any British capital ships operating in the Pacific, thereby allowing them to make the passage from home waters without being tied down by smaller, and hence less seaworthy, craft. Second, they would provide an effective means of coastal defence, thereby further encouraging local naval development. On 5 February 1909 a cable was sent to Australia's representative in London instructing him to call for tenders for the first three vessels. Not for the last time, however, Australian defence planning was about to be impacted by events on the other side of the world.

For more than 100 years the Royal Navy had been mistress of the world ocean, but on 16 March 1909, Sir Reginald McKenna, First Lord of the Admiralty, rose in the British parliament to describe the acceleration of the German battleship construction program. The Germans, he thundered, had expanded their naval armaments industry and, unless Britain increased its own procurement of capital ships, the Royal Navy would lose numerical superiority by 1912. Alarm spread throughout the Empire. Within a week, New Zealand had offered up the funds to build a battleship. Canada and South Africa telegraphed separate offers of support. Preoccupied with its own naval plans, the Australian government was more hesitant, but New South Wales and Victoria were goaded by the press into offering the cost of a battleship between them. Amid a profusion of competing schemes, Britain invited the premiers of the self-governing dominions to a special conference where the whole question of imperial defence could be discussed afresh.

'An Australian Dreadnought, the Proposed Gift of the Commonwealth', The Leader,
3 April 1909 (RAN)

While the naval scare was an important incentive behind the 1909 Imperial Conference, it was not the only factor involved. In 1908, the Committee of Imperial Defence had begun discussions on British policy after the expected expiry of the Anglo-Japanese Alliance in 1915. Following the signing of the Alliance in 1902 the Royal Navy had withdrawn five battleships from the China Station as an economy measure, but Japan had since earned a reputation as an expansionist nation. The committee therefore conceded the principle that a force of armoured ships must be returned to the Pacific. The question remained how best this might be accomplished without alarming the Japanese or bankrupting the British treasury.

Here Admiral of the Fleet Sir John Fisher, the British Admiralty's outspoken First Sea Lord, entered the picture. He seized on the Australian and New Zealand offers to contribute the cost of a capital ship and at the end of June 1909 urged that they should be built as battlecruisers. Fast, well armed, but lightly armoured vessels, battlecruisers were in Fisher's mind ideally suited to oceanic trade protection missions. More ambitiously, Fisher argued that the Australian gift should form the nucleus of a credible local navy. He further hoped that the other dominions might be enticed into making similar contributions to imperial defence. The model he proposed for these fleets was what he termed the 'Fleet Unit'; an advanced tactical formation consisting of a battlecruiser and its accompanying light cruisers; the former acting as the citadel

and the latter its high-speed scouts or 'satellites'. When combined with a local defence flotilla of destroyers and submarines, and suitable logistic support vessels, the package represented an ideal force structure for an emerging nation; small enough to be manageable in times of peace but, in war, capable of effective action in conjunction with the Royal Navy. The adoption of such a scheme might even allow Britain to leave the Pacific's naval defence to the dominions: 'We manage the job in Europe. They'll manage it against the Yankees, Japs, and Chinese, as occasion requires out there'.[2]

Prime Minister Fisher was not a supporter of the dreadnought offer, declaring it not naval policy, but merely 'a spectacular display', and one that would do nothing to encourage the interest of Australia's youth.[3] Fisher's hold on power was nevertheless tenuous and, assisted by the confusion over the naval issue, Alfred Deakin replaced him in June 1909. Deakin had previously served as Prime Minister and had long been in correspondence with Admiral Fisher. His ideas for an Australian navy had thus far been based on the acquisition of a flotilla of torpedo boats and submarines, with the officers and men fully interchangeable with Imperial seamen. Yet this implied that Australians would serve in Royal Navy ships merely for the term of an ordinary commission on the Australian Station. The long-term impracticality of such an approach had done little to endear Deakin to the Admiralty.

Domestic considerations left Deakin unable to attend the Imperial Conference, so he sent instead Colonel Justin Foxton, Minister without Portfolio, accompanied by Creswell as his naval advisor. Arriving in London in July 1909 they brought with them Deakin's offer of 'an Australian ''Dreadnought'', or such addition to [the Empire's] naval strength as determined after consultation in London'.[4] They were quite unprepared for the subsequent discussion.

The Royal Navy, advised McKenna on 10 August, could no longer guarantee sea supremacy in the Pacific. In just a few years the Japanese Alliance would have terminated, both 'the Japanese and German fleets would be very formidable', and the position of Australia, isolated and remote from British naval strength, 'might be one of some danger'.[5] Admiral Fisher added that the naval force currently planned by Australia, consisting only of small craft, could lead nowhere. A navy, he continued, had to be founded on a permanent basis and offer a life-long career if it meant to attract and retain quality personnel. In sum, Australia should aim to create and fully man a self-contained fleet unit. This force provided the right proportion of officers to ratings and a coherent grouping of large-, medium- and small-sized ships. Joined with two smaller fleet units on the East Indies and China Stations, it would form an Imperial Pacific Fleet. Even on its own, however, the proposed Australian fleet was a formidable prospect, capable of independent action on the trade routes and sufficiently powerful to deal with most hostile squadrons.

This initiative owed little to existing Australian planning, and the Commonwealth's delegation was uncertain of its response. Creswell had wanted a local navy to be self reliant and had previously urged progressive development. He pointed out the advantages of Australia building what he called the foundations of naval strength – naval schools, dockyards, gun factories – rather than spending money on a capital ship. Local needs, Foxton added, dictated a larger number of smaller vessels; the protection of trade would be impossible along the entire 12,000 miles to Britain; and Australia could not afford such ships.

McKenna reminded them both of Deakin's earlier proposal to establish a flotilla of submarines and destroyers. The Admiralty estimated that this would have cost at least £346,000 per annum. If added to Australia's offer of a capital ship and its annual maintenance, the total was closer to £500,000. By contrast the annual operating cost of a fleet unit would only be £600,000 to £700,000, and the Admiralty offered to fund the difference. The handing over of control of the entire Australia Station, and the transfer to the Commonwealth of all imperial dockyard and shore establishments in Sydney, made the bargain even more attractive and addressed many of Creswell's concerns. Foxton, now convinced, agreed to communicate the proposals to Deakin and obtained the Prime Minister's sanction to work out the scheduling details.

In Australia, the Admiralty's scheme found wide approval. Notwithstanding the lack of local input, most factions found it attractive and in harmony with their long-held ideas. Cabinet gave provisional endorsement on 27 September 1909 and work on the force proceeded rapidly with only minor changes to the selection of warships first suggested by Admiral Fisher.

Returned to power in April 1910, Prime Minister Fisher decided to refuse the British offer of financial assistance and fund the new vessels wholly from within the Commonwealth budget. A new *Naval Defence Act 1910*, passed on 25 November, provided the clear legislative authority necessary for the reinvigorated Navy. Its key provisions included the creation of a new Board of Administration; the establishment of colleges and instructional institutions; the division of the Naval Forces into the Permanent Naval Forces and the Citizen Naval Forces; and provisions relating to service conditions, such as pay, allowances, and discipline. All such naval administration was to be based upon the Royal Navy model.

Just four years after the 1909 Imperial Conference the battlecruiser HMAS *Australia* (I) steamed into Sydney Harbour at the head of Australia's own Fleet Unit. Off Fort Denison was the British cruiser HMS *Cambrian* and on board was Admiral Sir George King-Hall, the last British Commander-in-Chief. As he hauled down his flag, command of the Australia Station passed to the new Royal Australian Navy (RAN). Within a year the RAN was at war and, in a succession of efficient operations, removed any threat to Australian sea communications in the Indian and Pacific oceans; more than fulfilling the trust that had been placed in it. By any accounting it was a remarkable achievement.

Notes

[1] Fisher proposed acquiring 19 River class destroyers, and four, presumably larger, 'ocean' destroyers.

[2] Letter Fisher to Esher, 13 September 1909, cited in AJ Marder (ed), *Fear God and Dread Nought: Correspondence of Admiral of the Fleet Lord Fisher*, vol. II, Jonathan Cape, London, 1956, p. 266.

[3] 'Mr Fisher's Policy Speech', *The British-Australasian*, 6 May 1909, p. 11.

[4] Admiralty Memorandum, 20 July 1909, reproduced in N Lambert, *Australia's Naval Inheritance*, Papers in Australian Maritime Affairs No. 6, Sea Power Centre – Australia, Canberra, 1998, p. 175.

[5] Admiralty conference, 10 August 1909, The National Archives (UK): ADM 116/1100, 520.

Canberra *class LHDs* (RAN)

Royal Navy Aviation Aspects of the New Amphibious Ships

Commander David Hobbs, MBE, RN (Rtd)

> Our capacity to deploy and sustain land forces from the sea will be substantially enhanced when the Landing Helicopter Dock [Amphibious Assault Ship] (LHD) amphibious ships enter service in the coming decade. They will be able to carry a substantial quantity of equipment stores and personnel.
>
> *Defending Australia in the Asia Pacific Century: Force 2030*[1]

To develop the full potential of its two new *Canberra* class LHDs the Royal Australian Navy (RAN) needs to develop sophisticated multi-spot flightdeck operating skills. These joint skills have not seen similar use in the Australian Defence Force (ADF) since the decommissioning of the fast troop transport HMAS *Sydney* (III) in 1973. Nevertheless, other operators of large, helicopter-capable amphibious ships, such as the United States (US) Navy and Royal Navy (RN), have evolved techniques to launch heli-borne assaults and continuously refined them over the past fifty years. Australia is already leveraging off our allies' experience, and by establishing a number of loan postings seeks to generate the necessary expertise before the LHDs enter service. Key issues requiring attention range from the composition of the flightdeck crew, through to the use of non-naval helicopters and the systems integration of unique army, navy and air force equipment and ordnance.

During operations the LHD's flightdeck will be a busy and dangerous place. Aircraft handlers and assault logistics specialists must work together to get troops and equipment ashore and back again in the most efficient and effective manner; in RN and US Navy/ Marine Corps amphibious ships, the latter group comprises dedicated marines. Without them, the RAN will need to develop its own unique solution, and planning for flightdeck manning is already well underway. The LHDs will have specialised departments for both air and amphibious operations, and likewise being developed is a concept of employment in areas such as flightdeck management and mission planning.

The number of helicopters needed for an initial assault is dictated by the size of the military force to be landed. Numbers of troops, known as 'sticks', carried by each helicopter will vary according to the fuel needed to fly to the landing zone (LZ) and return with a viable reserve. It is quicker to add fuel to an aircraft than to pump it out, so helicopters are usually ranged with pre-planned low fuel states and brought up to the required amount at the last minute before the assault to give greatest flexibility. A late planning change would be very difficult to implement and could cause chaos.

Standardised stick sizes and fuel states give flexibility, but might be a limitation on longer-ranged insertions if not carefully briefed. Ammunition, artillery, stores and vehicles have to be pre-positioned on the flightdeck or other concentration areas but kept clear of operating spots. Mechanical handling equipment must be placed ready to move palletised loads at short notice. Each stick and each load will have an identity to allow the amphibious command to know what has been flown ashore, or taken ashore in landing craft. The order in which they are taken must be reactive at short notice; it is no good flying in ammunition according to a pre-arranged plan, for instance, if the military force urgently needs engineering equipment, barbed wire and water.

Soldiers from 3 Squadron, Special Air Service Regiment, embark in Royal Australian Air Force Iroquois helicopters on the flightdeck of HMAS Sydney *(III) in 1972* (RAN)

In other navies a primary assault technique is to range helicopters on the standard deck spots with extra fuel and launch them empty to orbit the ship at low level. Further helicopters, manned and with engines or auxiliary power units started are then towed onto the spots, spreading their rotors and engaging them when in position. Once ready they are loaded and launched, but the process takes time. The first group then lands on to pick up their loads and re-launch. Both groups join up and fly in tactical sections to the LZ inshore. An alternative technique packs helicopters into the available deck space, ranged as tightly as possible with minimum clearance between them, without using

the painted spots. The result is a single group which would launch from aft to forward and set off immediately for the target. Getting sticks of troops into the helicopters and removing lashings would be more difficult and slower in the latter case but the overall effect would be a slightly faster first assault group, albeit with a smaller military force to land. The latter technique also needs more marshallers to control the start-up and launch of each helicopter and first aid firesuitmen would be spread thin between them as they start. The embarkation of helicopters that do not auto-fold may limit the first option but both methods have their basic merits and drawbacks and can form the basis of a plan to suit individual operations.

After the initial assault waves it is a judgement decision whether to break down to a continuous shuttle of individual helicopters or to continue to fly in tactical formations. The former keeps a stream of personnel and stores moving ashore and is more flexible in matching loads to aircraft quickly. The latter might be a better counter to enemy air and ground based opposition, but would need a larger number of marshallers to be available at any given time. The officer in charge of the flying control position (FLYCO) controls the deck and the movements of aircraft in the visual circuit. He or she has a considerable responsibility to ensure the efficient, safe operation of helicopters, many of which will be from Army Aviation with crews unaccustomed to regular flightdeck operations. Helicopters from coalition allies may also need to be assimilated carefully into the flightdeck's operation. FLYCO must liaise with the command to keep the LHD in the right place with enough wind over the deck to help heavy helicopters to lift off safely for many hours on end. He must ensure that the deck is able to deliver the number of helicopter sorties at the pace required by amphibious operations.

FLYCO's 'eyes, ears and strong right arm' on deck will be the Flightdeck Officer and his handful of senior sailors. As well as moving helicopters on deck and marshalling them at take-off and landing, the aircraft handlers must ensure that sticks of men are brought safely but quickly to them, past aircraft lashings and under turning rotor blades, only when cleared to do so by the pilots. The assault supply team work under the direction of the handlers to move bulk stores into helicopter cabins or hook them on as an external load. If 'break-bulk' stores have to be packed into the cabin, the assault suppliers must ensure that there are sufficient personnel available to do so quickly. The potential need in a non-benign environment to move quantities of fuel and water ashore can represent a considerable part of the assault supply requirement. Information is the key to assault flying. After the initial waves, FLYCO must know how many aircraft are needed to maintain support for the military force at the required level and match helicopters to reinforcement sticks and loads. They may return from shore low on fuel and a 'flop spot' kept clear with fuel line rigged is a very good idea.

The squadrons need to know for some hours ahead how many aircraft they need to have ready and when replacement crews will be needed. Surges such as those required to land a mobile air operations team, the military force commander and staff, or a field hospital

need to be forecast and the extra aircraft prepared and moved to the flightdeck. As flying hours increase, maintenance and battle damage repair will need management, and parts of the deck may be required for helicopters not immediately available for operational flying. Without maintenance time, the number of available helicopters will gradually diminish.

In many ways the operation of an LHD flightdeck is more complicated than that of a strike carrier. In the latter, launches and recoveries tend to happen in planned pulses of activity; in an LHD they can be non-stop and may continue for days, including at night and in adverse weather. This must be taken into account in the provision of manpower, with most tasks 'doubled up'. Yet even with the flightdeck party in two watches there will be occasions - such as the initial assault or the early stages of humanitarian relief operations - when both watches might be required simultaneously. Again the need to use both watches and for how long is a judgement decision.

The Australian LHDs will routinely operate both Fleet Air Arm and Army Aviation helicopters. The latter will need to spend sufficient time embarked to be familiar with deck operations. Thought needs to be given to the number of different types that might embark; these will include Army Chinooks and Tigers, Navy Seahawks and joint force multi role helicopters (MRH-90s). Chinooks provide a very significant load-lifting ability but take up a lot of deck and their blades cannot be folded. The blades may have to be removed to stow the aircraft into a smaller area of deck parking space. Good procedural knowledge will be essential, especially when instrument recoveries prove necessary at night, in adverse weather or sand-storms. To prepare for this, the ADF will need to emphasise a joint approach to getting full value from the LHD's flightdeck and flying patterns. It should not be assumed that someone from a non ship-orientated background will slot into the deck operating technique immediately, but there is no reason why they should not do well once briefed and trained. In 1956 the first ever helicopter assault was conducted by the RN's 845 Squadron and the Joint Royal Air Force/Army Helicopter Development Unit. Joint operations work well when all participants accept the need for differing operational techniques to suit the environment from which they are flying.

In an example of the attention to detail required, the provision of assault life jackets (ALJ) may seem trivial, but their inadequate management can cause problems. They are worn by all troops and passengers in sticks that fly over water and are designed so that as the helicopter goes 'feet dry' over land the wearer can remove a locking pin in the ALJ straps to slide out of them as they leave the seat to disembark. The aircrew must ensure that ALJs come back to the ship with the helicopter; otherwise if they are taken ashore by troops and discarded, later serials might be limited by the low numbers available on board until sufficient are collected and brought back. Good ALJ discipline is one of the hallmarks of good amphibious operations.

Recovering a military force from shore resembles the assault phase functions in reverse, with slightly differing priorities. A stream of helicopters returning at short intervals is more easily assimilated than groups flying in tactical formation. Each shore-bound helicopter needs sufficient ALJs for any stick it might have to lift, and guides must be ready on the flightdeck to lead sticks to concentration areas for the removal of unused ammunition and its return to the magazines. They will then lead them back down the assault routes to the domestic areas where they can shower. Again the command needs to know what sticks and serials of equipment have been recovered. For troops who have been ashore for days, fresh water requirements will be significant. Plans for feeding and de-briefing will also need to be flexible.

With their ability to carry out amphibious strike, humanitarian assistance and disaster relief operations at long range, LHDs have become valuable strategic assets in a number of navies including those of Spain, France, Italy and Korea as well as the United Kingdom and the United States. Australia's LHD's will no doubt prove equally important and versatile.

Notes

[1]   Department of Defence, *Defending Australia in the Asia Pacific Century*: *Force 2030*, Canberra, 2009, p. 73.

The pirates armed and ready to board
MV Dubai Princess (Emarat Maritime Dubai)

The *Dubai Princess* and the Pirates

Captain Peter Leavy, RAN

On 29 May 2009 the Australian government announced a decision to flexibly task the Australian Navy frigate deployed in the Middle East Area of Operations between anti-piracy operations and their existing counter-terrorism and maritime security patrols under Operation SLIPPER.[1] Formed primarily to combat piracy in the Gulf of Aden, Task Force 151 (currently commanded by Turkish Rear Admiral Caner Bener) is one of three task groups operating as part of the Coalition Maritime Forces (CMF), a multi-national organisation co-located with the United States (US) Navy's Fifth Fleet Headquarters in Bahrain. The Commander CMF (Vice Admiral Bill Gortney, US Navy), is also the US Commander Fifth Fleet and has a Royal Navy commodore permanently posted as his Deputy CMF Commander. Nations contributing to the CMF include the United States, the United Kingdom, Australia, Canada, Denmark, Singapore, Bahrain, the United Arab Emirates, Turkey, Pakistan and Greece.

There has been a regular Royal Australian Navy (RAN) presence in the Arabian Gulf since the 1990-91 Gulf War; working primarily in and around Iraqi territorial waters. But with the expiration of United Nations Security Council Resolution 1790 on 31 December 2008, the Australian government re-deployed the ship away from Iraqi waters to operations elsewhere in the Arabian Gulf.[2]

Like all navies, the RAN is bound under the *United Nations Convention on the Law of the Sea 1982* to suppress piracy wherever it may occur. On 17 May 2009 two RAN frigates, HMA Ships *Sydney* (IV) and *Ballarat* (II) were transiting through the Gulf of Aden on their way to the Red Sea. The ships were deployed as part of NORTHERN TRIDENT 09, a global deployment to conduct a range of exercises with many navies around the world, and supporting the diplomatic role that navies are so valuable in executing: they were not in the region specifically for anti-piracy operations. Given the prevalence of piracy around Somalia and the Horn of Africa, however, they had established communications with CMF Headquarters in Bahrain and worked through some possible scenarios should piracy be encountered. The RAN's longstanding commitment to the Gulf region, coupled with regular exercises with the US Navy and other key allies meant that it was relatively easy for *Sydney* and *Ballarat* to be force assigned to Chief of Joint Operations (Australia) to act in support of the Combined Force Maritime Component Command counter piracy efforts while transiting the area.

One of the most successful ways to combat piracy is through presence, leading to deterrence. Pirates are generally motivated by money and will pick easy targets, so the presence of a warship is often enough for them to abort any attempted attack and seek easier prey. To capitalise on this, an 'internationally recognised transit corridor'

has been established through the Gulf of Aden. Warships regularly patrol along this 'corridor', which is used by most merchant ships so that, if required, help is relatively close at hand. It was through this corridor that *Sydney* and *Ballarat* travelled.At 1116 local time on 17 May 2009 *Sydney* and *Ballarat* heard a radio call for help on the international distress frequency from the oil tanker MV *Dubai Princess*, under Captain Syed MA Naqvi, stating that she was under attack by pirates and requesting assistance. Sydney established communications and quickly determined that *Dubai Princess* was 20 nautical miles (nm) ahead, travelling in the same direction. Both warships increased to maximum speed and *Sydney* prepared to launch her Seahawk helicopter. *Sydney* recommended that *Dubai Princess* reverse her course to reduce the time to close, but the ship's Master was initially reluctant, as the pirate skiffs were astern of him.

At 1140 *Dubai Princess* reported that she was being fired upon by small arms and rocket propelled grenades, so *Sydney* and *Ballarat* went to Action Stations and *Sydney's* helicopter was launched as soon as it was ready. Although the pirates made numerous boarding attempts they were unsuccessful due to the self-protection measures adopted by the tanker's crew. Captain Naqvi then attempted to reverse course, but he was at full power and the heavy manoeuvring was straining his engines - *Sydney's* bridge staff could hear engineering alarms sounding in the background when *Dubai Princess* transmitted on radio.

The 115,500 dead weight tonne tanker MV Dubai Princess *spraying water in an attempt to prevent pirates boarding* (RAN)

By 1210 *Sydney* sighted the skiffs which appeared to disengage from *Dubai Princess* once they saw two warships approaching at speed. One skiff closed on *Sydney* initially, but then stopped and waved a white flag and a jerry (fuel) can, trying to show that they meant no harm and needed fuel. *Sydney* continued closing on *Dubai Princess* and by 1220 had established a position off her port quarter with the aim of remaining there while she continued her transit west. The initial plan had *Ballarat* close to the starboard quarter, but at 1227 a second vessel, MV *MSC Stella*, 6nm east (behind the vessel) and travelling in the same direction, reported that she now had a skiff approaching her. *Ballarat* closed on *MSC Stella* to provide her with the same level of escort that *Sydney* was providing to *Dubai Princess.*

HMAS Sydney *(IV) approaches one of the pirate skiffs* (Emarat Maritime Dubai)

Soon afterwards, *Sydney*'s helicopter reported a possible pirate mother ship a further 20nm east and was tasked to investigate further. With *Dubai Princess* now apparently clear of danger, and *MSC Stella* reasonably close, *Ballarat* was tasked to escort both ships as they cleared the danger area to the west, while *Sydney*, with her greater speed, reversed course and closed on the possible mother ship. *Sydney* steamed back past the original skiff and those onboard were again seen waving fuel cans in the air. The skiff's position was recorded and *Sydney* continued to close on the suspected mother ship, which turned out to be another large skiff with fuel tanks visible on her deck. While these tanks were possibly for fuel storage, there was no other direct evidence linking her to the attacking skiffs.

At 1345 *Dubai Princess* and *MSC Stella* were now well clear of possible danger, so *Ballarat* reversed course to join the next group of six merchant ships that were sailing west down the transit corridor as a close escort. At one stage the second of these ships reported a skiff closing, but it quickly turned away with *Ballarat*'s arrival. Meanwhile *Sydney* returned to the stationary skiff to find the crew still waving fuel cans around, and she remained in the area pending the arrival of a ship from Task Force 151. Given that the skiffs had already fired upon *Dubai Princess* - although no firings were witnessed by either *Sydney* or *Ballarat* - there was a clear risk in attempting a boarding, so *Sydney* kept the vessel under observation. The skiff was in no apparent distress and as the afternoon wore on it became apparent that she had, indeed, run out of fuel.

Fortunately, *Ballarat* had been fitted with a secure, web based communications capability which was required for her subsequent work in the United Kingdom. This system allowed relatively easy and secure communications with both CMF Headquarters and associated ships, so *Ballarat* acted as the key communication hub. This communications path allowed the Commander of Task Force 151 to direct one of his ships, USS *New Orleans*, to join *Sydney* and assume responsibility for the situation, allowing *Sydney* to continue her transit to re-join *Ballarat*. At 1715 *New Orleans* arrived on the scene and after a radio discussion a small team from *Sydney* was transferred across to *New Orleans* to provide a first-hand briefing. The team returned to *Sydney* at 1830 and the ship continued her passage along the transit corridor.

While this event proved relatively straightforward in hindsight, it does provide a very good example of the flexibility and reach of naval forces. Ships underway are always moving and can respond at very short notice to events as they unfold - they are self-contained units with a wide range of inherent skills that can be used whatever situation arises without the need for any external support or assistance. Ships deploying in support of anti-piracy operations received specific training tailored to the mission (as do all ships and units deployed for operations), however the normal 'baseline' combat capability that all RAN ships maintain provides an extremely good foundation to deal with most situations that arise at sea. Our ships were well positioned to defend both themselves and the merchant ships, but could immediately have switched to a benign posture and provided assistance if anyone onboard a vessel had become distressed. This ability to tailor - and rapidly change - posture is again a unique and very powerful attribute of sea based forces.

Another key lesson is the value of operating with other navies on a regular basis. Of course, navies the world over have been operating in coalitions for centuries, but the relative ease with which *Sydney* and *Ballarat* could coordinate with CMF Headquarters and other coalition ships in the area was largely because the RAN routinely operates in those waters and with allies. There are RAN officers working within CMF Headquarters and foreign naval officers are on exchange with the RAN, all of which builds trust, teamwork and understanding. When a short notice situation arises, it is relatively easy to coordinate efforts and achieve a positive result for all. Of course, this is one of the key aspects of NORTHERN TRIDENT 09 - the very reason *Sydney* and *Ballarat* are deployed.

Notes

1   Department of Defence, 'Minister for Defence Announces Australian Contribution to International Anti-Piracy Efforts', Ministerial Press Release 095/2009, 29 May 2009.

2   United Nations Security Council Resolutions (UNSCR) pertaining to RAN deployments in the Gulf until 2003 are listed in G Nash and D Stevens, *Australia's Navy in the Gulf*, Topmill, Sydney, 2006, p. 91. The multinational force's mandate was established in 2004 under UNSCR 1546 and extended under UNSCRs 1637 and 1723. For details of each resolution visit, <www.un.org/Docs/sc/index.html> (1 August 2009).

Today's amphibious ships, HMA Ships Kanimbla *(II) and* Manoora *(II)* (RAN)

Amphibious Manoeuvre Operations

> A self-contained and sea based amphibious force is the best kind of fire extinguisher because of its flexibility, reliability, logistic simplicity and relative economy.
>
> Sir Basil Liddell Hart[1]

The Australian tradition of amphibious operations began with the capture of German New Guinea in September 1914 and the unsuccessful Gallipoli campaign of 1915. During World War II, Australian and American forces conducted a series of amphibious landings in New Guinea, New Britain, the Philippines and Borneo. Unfortunately this hard-won expertise was not maintained, and from the mid-1950s the focus on Cold War anti-submarine operations, counter-insurgency and continental defence led to severe reductions in amphibious capabilities. A vestigial amphibious capability was retained throughout the period but not until the late 1960s did the Vietnam experience convince the government that the Australian Defence Force (ADF) again required specialised amphibious vessels operated by the Royal Australian Navy (RAN).

Six *Balikpapan* class heavy landing craft (LCH) entered service from 1971, and a decade later the heavy landing ship (LSH) HMAS *Tobruk* (II) and the training ship HMAS *Jervis Bay* (I) added some military sealift capability. These ships did not operate together as a cohesive amphibious force, however. Operation MORRIS DANCE, the ADF's response to the 1987 Fiji crisis, revealed the government's limited power projection response options, and the lessons learnt became a clarion call for a return to a credible capability in maritime manoeuvre and amphibiosity. The acquisition in 1994 of two *Newport* class tank landing ships, HMA Ships *Manoora* (II) and *Kanimbla* (II), was an important step forward, but the vessels required extensive refit and modification into *Kanimbla* class amphibious ships (LPA) and were not ready in time for East Timor operations in 1999. Instead, the RAN arranged a two year charter for the fast catamaran HMAS *Jervis Bay* (II) to provide additional troop lift. The amphibious force has since made significant progress and provided support to ADF operations throughout the region and further afield, including Bougainville, the Solomon Islands, Iraq and East Timor.

In the military environment, RAN amphibious ships are designed primarily to conduct combat operations from the sea. The three tasks for which these ships are used are maritime mobility, amphibious operations, and support to operations on land. The defining characteristic of amphibious forces is their cross-environmental mobility and carrying capacity that makes them particularly suited to manoeuvre warfare. The lift capacity, support facilities and presence of RAN amphibious ships can contribute to a range of constabulary and diplomatic tasks, including border protection, peace

operations, non-combatant evacuation operations, disaster relief and defence assistance to the civil community. In periods of tension, prepositioning of a maritime force can be a prudent contingency, providing a gesture of support towards allies or a potential threat to adversaries. Such presence sends a clear message that Australia will protect its interests wherever those interests might lie, and with force if necessary. The capacity to provide sustained forward presence is a powerful diplomatic tool, while the ability to manoeuvre freely at sea can be used to escalate or defuse tensions. A properly constituted amphibious component broadens the potential scope of a maritime force, allowing evacuation or intervention operations to be mounted. It is this ability to poise close to potential trouble spots and react quickly, en masse, which makes an amphibious force more flexible than a mere sealift force. If prepositioned, it is the fastest acting intervention force available to the government. It is certainly quicker than airlifting forces from distant mainland bases and does away with the difficulty of arranging a forward operating base. Properly constituted, an amphibious force carries sufficient combat weight to influence events ashore by either acting alone or by forming the nucleus of a heavier force.

Perceptions of what constitutes an amphibious landing tend to be polarised. At one extreme they are seen as suitable only for entirely benign circumstances while at the opposite they conjure images of murderous assaults on strongly defended beaches. Both extremes largely miss the point. The former represents a sea transport capability that could theoretically be allocated to auxiliary forces or civilian contractors. The latter reflects a form of positional warfare and attrition, which is the antithesis of the manoeuvre capability inherent in amphibious forces.

Being numerically small, Australia's technologically advanced forces are better suited to manoeuvre rather than attrition. However in our geographic situation the scope for manoeuvre in the land environment is generally limited. Hence our situation favours joint manoeuvre, exploiting the sea by using amphibious operations to bypass and dislocate enemy forces. The concept of manoeuvre warfare is, in its simplest form, to employ movement to apply one's own strength against enemy weakness while avoiding the reverse. This is not a new concept, as more than 2000 years ago the Chinese military philosopher Sun Tzu espoused using the 'indirect approach' to strike at an enemy's key vulnerabilities.[2] Clearly, the practice of bypassing and isolating enemy strong points is much easier when you can control the sea, while denying it to an adversary.

Equally, by simply remaining at sea even a modest landing force is capable of pinning down an opposing force many times its own strength. In the complex and difficult terrain that exists in the region, land formations may be constrained by the lack of roads, thereby taking additional time to move into their combat positions. An amphibious force can move 250nm a day and choose where, when and whether to land. This concept is known as Operational Manoeuvre from the Sea (OMFTS).

Diagram of the OMFTS and STOM concepts (USMC)

Once committed to a landing, the critical factor is putting forces ashore quickly enough to stay ahead of the adversary's reaction cycle. Consequently, the parameters by which amphibious capability can be measured include not only how much land combat power it can deliver, but also how fast and in what conditions it can be delivered. The agility of an amphibious force depends on specialist equipment including purpose-built amphibious assault ships, landing craft, helicopters and amphibious vehicles. The aim is to get the right amount of force onto the objective without necessarily establishing beachheads, supply dumps, or defensive fire bases. This concept is known as Ship to Objective Manoeuvre (STOM).

The RAN currently operates two LPAs, one LSH, six LCHs as well as numerous smaller landing craft. The amphibious ships, *Kanimbla* and *Manoora* have been modified extensively for ADF purposes. They have gained cranes, landing craft, helicopter facilities and greatly improved command and control as well as medical facilities. Up to four army Blackhawk helicopters or three RAN Sea King helicopters can be carried in each ship's hangar. Two army medium landing craft (LCM-8) can be carried on the forward flight deck and launched using the 70 tonne crane. Ship self-protection

includes a Phalanx Close In Weapon System (CIWS), stabilised 25mm deck guns, .50 cal machine guns and a SRBOC chaff launcher. The ships have a top speed of 20 knots. They are capable of carrying 450 troops together with their vehicles and equipment. The stern door provides access to 810 square metres of storage space on the vehicle deck, including 229 lane metres of vehicles.

Tobruk, a modification of the British *Sir Bedivere* class amphibious logistic ship, is a multi-purpose troop and vehicle carrier, with facilities for bow and stern loading, a drive-through capacity, and inter-deck transfer ramps. The ship can beach and land tanks and other heavy equipment provided the beach and weather conditions are suitable. Her self-defence capability includes 25mm and .50 cal guns. In terms of cargo capacity, she can carry 1300 tonnes or 330 lane metres of vehicles. This equates to 18 tanks, 24 trucks or 16 shipping containers carried in the tank deck as well as 5 tanks, 40 armoured personnel carriers, or 29 containers on the vehicle deck. The vehicle deck has been strengthened to carry two LCM-8s as deck cargo, which can then be launched using the derrick. In addition, two smaller landing craft can be placed on davits. These can carry one Land Rover size vehicle or 36 personnel. *Tobruk*'s troop capacity is 315 for extended duration or up to 520 for short periods. The ship has a top speed of about 16 knots. Although lacking a hangar, *Tobruk* can also embark up to two Sea King helicopters.

The six LCH are capable of undertaking oceanic passage in moderate sea states. They are versatile craft able to move and supply personnel in areas that other vehicles cannot reach. For instance, they provided much of the logistics backbone during the ADF's recent deployments to the Solomon Islands. The LCH can mate their bow ramp to the stern ramps of the larger amphibious ships, allowing for vehicles and equipment to be transferred between units. The maximum cargo load of the LCH is governed by the load-fuel balance. A load of 175 tonnes gives the ship a maximum range of 1300nm increasing to 2280nm for a load of 150 tonnes. They can carry up to two main battle tanks, 23 quarter-tonne trucks or 13 armoured personnel carriers. In ship-to-shore operations, 400 fully equipped troops can be carried, but only 60 for calm weather coastal passages. Top speed is approximately 9 knots.

By 2030 the RAN will be operating a fully integrated amphibious force specifically designed and constructed to meet stringent ADF operational and environmental requirements. The future amphibious manoeuvre force will consist of two *Canberra* class amphibious ships, a strategic sealift ship and six intra-theatre landing craft.[3] When combined with army and air force elements, the future ADF will have a considerable ability to use maritime manoeuvre to help maintain global maritime security and to influence events across the Indo-Pacific region.

Notes

1   BH Liddell Hart, *Deterrence or Defence*, Stevens & Sons, London, 1960, pp. 127-8.

2   Sun Tzu, *The Art of War*, translated by Thomas Cleary, Shambhala Publications, Boston, 1991, esp. Section 4 Formation, <www.generationterrorists.com/quotes/bingfa.html> (20 June 2009).

3   Department of Defence, *Defending Australia in the Asia Pacific Century: Force 2030*, Canberra, 2009, p. 73.

Admiral Michael Hudson, AC, RAN (1933-2005) (RAN)

An Effective National Defence

Despite changing threats, the fundamentals of Australia's defence policy have remained remarkably consistent over the last century. Australia's strategic geography and our reliance on sea trade have always counted for much when deciding how best to defend our sovereign territory, our people and our interests. Not surprisingly, intensive study of historical and contemporary security issues continues to confirm the enduring relevance of an essentially maritime strategy to an effective national defence.

More than twenty years ago, the direction of Australian defence policy seemed far less certain than it is today. With the Cold War waning, the nation faced no identifiable direct military danger. It followed that security planning should be focused on lower-level contingencies, but the Defence community was plagued by adversarial attitudes and could not agree on the appropriate level of threat against which to structure the Australian Defence Force (ADF). Tacitly acknowledging the deficiencies existing within his policy-making machinery, and assessing that strategic planning and force structure needed a fundamental rethink, the then Defence Minister, Kim Beazley, initiated a review of defence capabilities by an external consultant, Paul Dibb.

Released in March 1986, the Dibb Review placed a gratifying emphasis on maritime issues, but demonstrated some fundamental misunderstandings of the nature of maritime operations. This was particularly evident in the Review's focus on a strategy of 'denial' in the sea-air gap to our north, which from the Navy's perspective was isolationist, neither acknowledging Australia's regional responsibilities nor providing a strategy for the peacetime employment of the ADF. As the then Chief of Naval Staff, Vice Admiral (later Admiral) Mike Hudson, RAN, commented, 'in my view it is a narrow, inward looking strategy which surrenders the initiative and unnecessarily restricts a government's political options'.[1]

The Dibb Review nevertheless provided a catalyst for discussion in the lead-up to the 1987 Defence White Paper, and Hudson made sure that the Navy's case was adequately presented. An article published in *Navy News* in May 1986 provided a useful summary of this position and it is still worth revisiting, as much of what Hudson wrote remains relevant today:

> There has been much talk lately that tomorrow's RAN [Royal Australian Navy] will become more a coastguard than a navy. I can assure you that this is far from accurate. Rumours of drastic cuts in numbers of major warships are just that - rumours, with no basis in fact. The reports you have seen in the press, predicting further reductions in the Navy, should be taken with a bag of salt. As I see it, such speculation makes two basic assumptions. The first is that Australia is committed to a policy

of 'Continental Defence'; that is, that our defence forces will respond only to direct military threats against the Australian mainland. The second assumption is that surface warships, other than patrol and mine counter-measures vessels, perform few useful tasks in the 'missile era' and are in any case, too vulnerable and expensive. Submarines and aircraft will be enough to deny use of the sea to an enemy. Neither of these assumptions is correct.

Security

First a few words about that misleading term 'Continental Defence', or 'Fortress Australia'. It completely ignores a basic fact of geography - Australia is an island, with no land borders. Our common border with neighbouring countries is the sea, which also forms the common link between these island states. It is the major regional source (sometimes, the only source) of both food and cash income. Australia relies upon sea transport for over 80 per cent of our export earnings, for most of our imports and for transport of bulk goods around our coastline, especially to and from remote areas in the north. The rise and fall of the Australian dollar, depending on each month's trade figures, shows how much Australia depends upon overseas trade for its national livelihood. Imagine what would happen if that trade were somehow disrupted. We would not starve to death, but the nation would soon be in a very poor economic shape, as our foreign earnings dried up. This could happen without an enemy ever having to set foot on our shores.

In Parliament recently, our Minister firmly stated that the Government will aim for a self-reliant defence strategy, but will have nothing to do with an isolationist 'Fortress Australia' policy. In short, Australia must take more responsibility for its own security, and for preserving peace and stability within our own region of interest. That 'region of interest' includes Southeast Asia, the Southwest Pacific (including Papua New Guinea), and large parts of the Indian and Southern Oceans. Our Navy will continue to play a major role in advancing Australia's interests in the oceanic region.

Surface Forces

Patrol boats, and mine-hunters and sweepers are essential for protection of our coastal areas and ports, but they are specialised ships which are not easily adapted for other tasks. They do not have the seakeeping and endurance qualities necessary to operate over the vast distances of our region. Submarines and aircraft are excellent deterrent weapons, but

are of limited use in situations where a lower level of force, and a visible display of power are required. Communications are also not as reliable as with surface units. Aircraft have limited ranges and endurance, and are not always available.

The long range and endurance of surface forces, their impressive appearance, and wide variety of weapons and sensors, including the use of helicopters, make them perfectly suited to extending influence throughout an oceanic region. Ships are also a visible demonstration of Australian skills and technology. Warship visits to friendly countries demonstrate Australia's interest and commitment in their welfare and security, besides showing that we can actually get there and stay there if needed. As they are self-sufficient, ships do not require local base facilities, as would troops or aircraft. They can come and go as they, and the host country, please.

In times of tension, surface forces are in constant touch with their home command, greatly reducing the chance of excessive use of force and escalation of conflicts. Particularly when operating as a group, major surface warships are capable of defending themselves against air, surface and sub-surface threats, besides deploying a wide range of offensive capabilities themselves. All in all there is no other vehicle so versatile, in peace or war, as the surface warship.

Vulnerability

All forces deployed in a conflict, at whatever level, are naturally at risk - that is part of the business. Claims that our ships, alone amongst all others it seems, are powerless in the face of anti-ship missiles, overlook the evidence of the modern experience. I recall arguments that surface-to-air missiles had spelt the end of manned aircraft, or that anti-tank missiles had dealt armoured land forces a death blow. There is no sign of either aircraft or armoured vehicles being disposed of by those who have need of them; they have simply been improved to deal with the improved threats. The same applies to our surface ships. Besides progressively improving our anti-missile defences and anti-submarine warfare capabilities, it should not be forgotten that our ships themselves have potent anti-ship systems, which are among the most advanced in the world. The problems of modern warfare are, then, no different from in times gone by: having well-trained men [and women], well-maintained equipment and being able to deploy the right forces in the right place at the right time.

Balance

Just as the Defence Force needs to strike a balance of maritime, land and air forces, so the Navy needs to develop a balanced range of capabilities. As a modern example, the Soviet Navy, which pioneered the anti-ship missile, has a huge naval air force and the world's largest submarine fleet, but it still continues to expand its fleet of modern long-range surface warships. Admiral of the Fleet SG Gorshkov commanded the Soviet Navy from 1956 to 1985. When he took over, his surface forces were intended mostly for coastal defence, as 'the Soviet Union did not show confidence in the role and place of surface ships at sea'. However, Gorshkov soon came to some different conclusions. Among them were: 'The experience of combat operations at sea in the First and Second World Wars confirmed the need to move over to the building of balanced fleets'; and that, without more capable surface ships, 'the solution of a number of tasks facing the fleet is impossible'. I agree with him, and I have met few experienced naval men who don't. A look at Jane's Fighting Ships will confirm that nations the world over are convinced of the value of capable surface ships.[2]

Admiral Hudson could take much of the credit for the manner in which the 1987 White Paper subsequently dealt with maritime defence issues. It explicitly rejected the concept of 'continental' defence and exchanged 'denial' for the more flexible layered strategy of 'defence in depth'. Moreover, it acknowledged that 'By its very nature, the defence of Australia and its territories emphasise maritime warfare capabilities'.[3] This was matched by the delineation of a well-balanced range of naval capabilities which, in addition to submarines and mine hunters, described a surface combatant force comprising high capability destroyers, lesser capability frigates and patrol boats for coastal operations. As Hudson correctly predicted in the conclusion to his May 1986 article, such a force structure was realistic with respect to assessed needs and financially achievable.

Twenty two years later, the 2009 Defence White Paper has more similarities with the 1987 version than might be expected.[4] The future Navy will operate three *Hobart* class destroyers performing high threat tasks, eight Future Frigates replacing the current *Anzac* class frigates, and around 20 Offshore Combatant Vessels, larger than the existing *Armidale* class boats, will undertake wide-ranging coastal tasks including littoral warfighting. As always, each new design will incorporate enhanced technologies, possibly some that have yet to reach the concept stage. By thus evolving and keeping pace with emerging threats, these ships will remain capable of protecting our national interests throughout their service lives.

Over the last two decades, the wisdom of the balanced approach to navy capability planning has been a clear success story. The flexible force structure envisaged in 1986 has worked exceedingly well in unforseen circumstances across the globe and for varied tasks ranging from humanitarian assistance to actual war. The late Admiral Hudson would no doubt be pleased to see that in 2009 his ideas have passed the test of time.

Notes

[1]   David Stevens (ed), *The Royal Australian Navy*, Oxford University Press, Melbourne, 2001, p. 242.

[2]   Michael Hudson, 'An Effective National Defence', *Navy News*, May 2, 1986, p. 3.

[3]   Department of Defence, *The Defence of Australia 1987*, Canberra, 1987, p. 43.

[4]   Department of Defence, *Defending Australia in the Asia Pacific Century: Force 2030*, Canberra, 2009.

HMAS Darwin *at the Indonesian Fleet Review, August 2009* (Defence)

Major Surface Combatants

> The backbone and real power of any navy are the vessels which, by due proportion of defensive and offensive powers, are capable of giving and taking hard knocks.

> Alfred T Mahan[1]

Highly capable surface combatants are well placed to provide a flexible and rapid response to the broad range of threats that may arise in Australia's large sovereign area, as well as supporting our nation's global interests further afield. Surface combatants provide unique capabilities that complement other elements of the Australian Defence Force (ADF) force structure to ensure a layered defence or concentration of effects against a wide range of threats.

Australia's strategic geography requires strong and flexible maritime forces capable of sustained operations to preserve our interests at sea. When combined with the distances and extremes of weather conditions that determine the feasibility of such operations, it is apparent that the requirements can only be met in a single unit through the characteristics unique to major surface combatants: mobility in mass, access, readiness, flexibility, adaptability, reach, poise, persistence and resilience.

To effectively conduct the military role, the major surface combatant is expected to counter a range of threats in all environmental conditions. In the traditional military environment, these threats include:

- Submarines capable of surveillance and intelligence operations, laying mines, and launching anti-ship torpedoes and missiles.

- Fixed-wing and rotary-wing aircraft similarly capable of surveillance and intelligence operations, laying mines, and launching a range of anti-ship missiles, guided and unguided bombs.

- Surface combatants with similar capabilities and characteristics to our own, including embarked helicopters.

- Smaller combatants and fast attack craft, usually armed with guns and/or anti-ship missiles and particularly capable of operations in the littoral.

- Land based forces, including artillery and battlefield, cruise and ballistic land attack missiles, and artillery.

- Intelligence and surveillance systems, ranging from land, air and space based strategic systems to tactical level platforms, and personnel.

Surface combatants must also be capable of responding to a range of asymmetric threats, while meeting an increasing number of diplomatic and constabulary responsibilities, including:

- Unconventional attacks from terrorists or militias, proliferation and use of unconventional capabilities including biological, chemical and radiological weapons, and attacks on information systems.

- Terrorism, international organised crime, piracy, illegal fishing, quarantine infringements, drug and arms smuggling, and illegal immigration.

In the combat role, the focus of most navies, including the Royal Australian Navy (RAN), has changed since the late 1980s from Cold War open-ocean combat to operations in the littoral. Recalling the fundamental doctrinal principle that maritime forces seek to establish sea control in order to conduct the military task of maritime power projection, and to permit the use of sea lines of communication (SLOCs), the complexity of the littoral environment provides significant challenges for maritime forces.[2]

HMAS Ballarat *(II) transits the Hudson River during a goodwill visit to New York, July 2009. Surface combatants demonstrate the strength of alliance relationships through highly visible activities such as diplomatic visits* (Defence)

This is particularly so for the ubiquitous surface combatant force, which must dominate the battlespace in order to provide air, surface, and sub-surface cover for other naval, land, and air assets. In operations where other elements of the ADF are deployed, surface combatants must operate as an integral part of the ADF's overall joint capability, in cooperation with submarines, maritime air and land forces. Surface combatants provide unique capabilities that complement other elements of the ADF force structure to ensure a layered defence or concentration of effects against a wide range of threats. Surface combatants must be able to contribute to simultaneous operations in widely separated locations.

To achieve the government's goals, ADF operations are anticipated in both the littoral and open-ocean environments, in areas proximate to and remote from Australia, and under extreme variations in climatic conditions. The capacity of the surface combatant force to deploy around the globe to achieve these requirements has been well demonstrated. In recent years, RAN surface combatants have regularly operated off the north Australian coast, in the Southern and Indian oceans, the Persian Gulf, Southeast Asia, North Asia and the Pacific Ocean. In 2002-03, RAN surface combatants simultaneously sustained major operational deployments to the Persian Gulf (Operations SLIPPER, FALCONER and CATALYST) while undertaking border protection operations to the north of Australia (Operation RESOLUTE).

The RAN's current surface combatant force consists of four *Adelaide* class guided missile frigates derived from the United States Navy *Oliver Hazard Perry* class, and eight *Anzac* class helicopter capable frigates (FFH), derived from the German MEKO 200 frigate design. Both classes have been extensively upgraded since commissioning and further upgrades are planned for the *Anzac*s. These improvements include: the Harpoon anti-ship missile providing a significant anti-surface warfare capability; good close range anti-air warfare (AAW) capability through the Evolved Sea Sparrow Missile; the Phalanx Close-In Weapon System; a strong defensive undersea warfare suite; and the highly capable Link 16 tactical data link system. Both classes of surface combatant can embark the Sikorsky S-70B-2 Seahawk helicopter, fitted with an anti-submarine warfare (ASW) sensor suite and able to carry lightweight torpedoes. It has recently been announced that new naval combat helicopters, with advanced ASW capabilities, will be introduced 'as a matter of urgency'.[3] They will include ASW dipping sonar systems, air-launched torpedoes and air-to-surface missiles.

In situations beyond the reach of friendly land air power, or where operations must be continuously maintained for extended periods, surface combatants provide the most viable military option. Their sensors and weapons can be employed in the undersea, surface and air environments at the same time. Unlike most other combat units, surface combatants are fully self-contained and offer great flexibility to meet changing operational circumstances. Multiple tasking and re-tasking is common in mid-deployment, with little or no detriment to the operational efficiency of the ship.

Depending on the scope of the maritime operation, major surface combatants will be able to operate independently or as part of a joint or combined force. As a rule, they will be the primary provider of mobile, sustained combat power at sea, with the cumulative effect of different offensive and defensive capabilities progressively producing a balanced capability across the maritime battlespace.

The surface combatant's primary mission is to contribute, as part of a system of systems, to the establishment and maintenance of sea control in a hostile, multi-threat environment. The surface combatant must be able to conduct effective ASW, AAW and anti-surface warfare (ASuW). Not only must the combatants have the necessary weapons and sensors, but they also must have the personnel skilled in their use supported by an efficient command and control, communications and intelligence infrastructure. This requires significant training and exercise programs to establish and maintain proficiency. Underpinning the ship's ability to fight, and fundamental to the whole ship entity, is the indispensable support provided by the ship's engineering and logistic infrastructure. Effective ASW, AAW and ASuW requires a surface combatant to coordinate organic, task group and aircraft sensors, and fuse the information – which may include intelligence from other sources outside the task group – into a recognised picture before initiating and coordinating offensive or defensive action. In certain circumstances the surface combatant may be required to coordinate the actions of friendly submarines acting in support of the force at sea.

Maritime power projection may include the landing of amphibious or special forces, the delivery of military forces by sea (sealift), and the provision of bombardment by guided or unguided weapons from seaborne platforms. In establishing the majority of conditions for the conduct of maritime power projection, surface combatants may protect advance force - hydrographic, mine warfare and clearance diving operations that clear the way for follow on forces. They will usually protect the amphibious or other maritime power projection forces, both during transit and inside the area of operations. Maritime power projection operations may occur over several days or weeks, depending on the circumstances, which emphasises the importance of the surface combatant's endurance. Lastly, surface combatants can use their own guns, missiles and electronic warfare systems in the offensive projection of power over land. Naval gunfire support capability may reduce the amount of land based artillery required in-theatre, easing the logistic demands on the amphibious force. If SLOCs have been secured over wide areas, then commercial and military shipping may transit without threat. If an adversary is directly contesting use of a SLOC, shipping will require close protection. Surface combatants have a key role to play in both securing SLOCs, and in close protection of merchant shipping.

Major surface combatants are built to fight and win in combat and the resources and skills developed for warfighting underpin their ability in the constabulary role. They have larger crews than most other RAN ships, and they have sophisticated command, control and communications capabilities, helicopters, boats and stores, all with broad

application across the span of maritime operations. Highly capable naval forces are essential elements of Australia's political influence, enhancing stability, promoting interoperability among allies and coalition partners, deterring aggression, providing rapid response to political instability and natural disasters, enforcing national and international legislation and supporting national interests at home and abroad.

Surface combatants contribute to a range of constabulary tasks, such as enforcing environmental, fisheries, immigration and quarantine laws, peace keeping and peace enforcement tasks. Due to those resources and skills developed for warfighting, surface combatants also contribute to a range of diplomatic tasks, from the provision of various forms of assistance, through presence to more coercive deterrence. The intrinsic value of the surface combatant as a diplomatic tool should not be underestimated. Against the backdrop of a potent symbol of maritime power the hosting of reception events, trade fairs and the like in foreign ports has historically generated goodwill and fostered mutual understanding and trust with host nations and visitors. Similarly, these visits have allowed the ship's companies to conduct a range of community liaison and charity tasks to enhance such relationships.

The dreadnought battleship, nuclear powered submarine and the aircraft carrier were all hailed as the manifestation of the capital ship at various times during the 20th century. Today, it is the thoroughbred warship or surface combatant that provides the majority of nations with the ability to exercise power at sea.

Notes

[1] Alfred T Mahan, *The Interest of America in Sea Power, Present and Future*, Sampson Low, Marston & Co, London, 1896.

[2] For more information see Royal Australian Navy, *Australian Maritime Doctrine: RAN Doctrine 1*, Sea Power Centre - Australia, Canberra, 2010, especially Chapter 8.

[3] Department of Defence, *Defending Australia in the Asia Pacific Century: Force 2030*, Canberra, 2009, p. 73.

*Well trained and experienced submariners will remain the most important factor
for the Future Submarine capability* (RAN)

Australia's Future Submarine Capability

> In the case of the submarine force, the Government takes the view
> that our strategic circumstances necessitate a substantially expanded
> submarine fleet of 12 boats … a larger force would significantly increase
> the military planning challenges faced by any adversaries, and increase
> the size and capabilities of the force they would have to be prepared to
> commit to attack us directly, or coerce, intimidate or otherwise employ
> military power against us.
>
> *Defending Australia in the Asia Pacific Century: Force 2030*[1]

The brevity of the above statement, taken from Australia's latest Defence White Paper,
understates somewhat its momentous impact on the shape of our future maritime force.
The Royal Australian Navy's (RAN) future submarine fleet will eventually be double the
size of the existing fleet, by which time it will also constitute just over 50 per cent of the
major combatant force. But numbers alone do not define the substantial capability gain
conferred by this decision. Nor do they readily convey the significant effort required by
the Navy and the wider Defence Organisation to realise the goal of an expanded fleet
of submarines likely incorporating even more capability than the existing *Collins* class.

What Else Does the Defence White Paper Call For?

The submarine decision resonates with several other statements in the Defence White
Paper. The Australian Defence Force's (ADF) primary force structure determinant is
identified as the ability to deter or defeat an armed attack on Australia.[2] Furthermore, within
the predominantly maritime strategy espoused, the capacity to establish sea control is a
recurring theme. More particularly, the White Paper calls upon the ADF 'to be prepared to
undertake proactive combat operations against an adversary's military bases and staging
areas, and against its forces in transit, as far from Australia as possible'.[3] Reference to the
possible need for 'Australia to selectively project military power or demonstrate strategic
presence beyond our primary operational environment' is also pertinent, as is the assertion
that 'Australia might need to be prepared to engage in conventional combat in the region
… in order to counter coercion or aggression against our allies and partners'.[4]

So, Why Submarines?

For as long as submarines have been operating, they have remained potent instruments
of maritime power. They have contributed significantly to the preponderance of major
naval powers and have lent smaller navies credibility. Though not invulnerable – it
would be foolish to suggest otherwise of any weapon system – submarines operate in

what continues to be the most opaque of mediums, the undersea environment, from where they can generate effects under, on, and beyond the sea. Technology is yet to render the sea transparent. This physical fact, coupled with their increasing stealth, affords submarines tremendous tactical initiative that readily translates to operational flexibility across the spectrum of conflict.

First and foremost, the submarine is able to operate undetected and conduct its activities covertly, enabling it to operate in waters where it may not be desirable or even possible to position other maritime forces. In areas where sea control is yet to be secured, the submarine can strike a potential adversary's maritime forces and, if necessary, land targets. Beyond denying the use of the sea to an adversary, the submarine has the capacity to contribute significantly to the achievement of sea control by destroying those enemy forces which might seek to dispute it. Indeed, inherent in this substantial offensive capacity is the deterrence offered by the possession of submarines, and their usefulness as force multipliers. While submarines might not offer a visible presence off troublesome shores in times of rising tension, their initial deployment signals national resolve and the promise of serious consequences should a potential adversary choose to open hostilities. The nexus between the tactical initiative, operational flexibility, and strategic value conferred by a capable submarine fleet is starkly evident.

The Silent Service's badge (RAN)

What Do Submarines Do?

Submarines excel in high-end warfighting tasks, such as anti-submarine warfare. A well-designed submarine equipped with superior acoustic sensors, processing systems, and torpedoes, and crewed by a highly trained team will succeed in anti-submarine missions, and may prove one of the few means by which an adversary's submarine capability can be neutralised in the opening stages of hostilities.

Submarines are also lethal anti-surface warfare assets and can inflict serious losses on the naval combat and logistic support fleets of an adversary. Recent exercise and real-world experience continues to prove the advantages that rest with submarines when operating against surface units. A successful hit from a single Mk 48 torpedo of the type employed by the *Collins* class will generally sink large surface combatants and quickly disable bigger ships. The addition of anti-ship missiles to a submarine's arsenal further increases their reach and lethality.

As foreshadowed in the White Paper, land strike will likely become another significant role for RAN submarines. A submarine specifically loaded for land strike missions could carry a substantial number of cruise missiles alongside a limited number of torpedoes. Submarine-launched land attack missiles might be among the first weapons fired in a campaign where the threat prevents the use of land based air power, or other factors prevent ships from positioning for such a strike. Moreover, the ability of the submarine to clear a launch datum and exploit the undersea environment to evade may offer greater impunity against counter-attack. Submarines are also capable of supporting small Special Forces units through covert insertion and extraction.

In addition to direct warfighting, submarines can consistently contribute to intelligence and surveillance efforts. They can collect acoustic, visual, communications and electronic intelligence that promotes our understanding of evolving threats and directly supports the conduct of operations by other forces.

The advent of secure, discrete, and high-data rate communications for submarines now also means that they can operate as part of a networked force. This does not imply that submarines need to remain a constantly connected node. Rather, the achievement of effects can be magnified if submarines are supported by the timely flow of information from the rest of a force.

What Are the Challenges?

The successful introduction of Australia's future submarine capability will face a number of substantial challenges. These challenges give rise to related commercial, financial, and schedule issues that will truly make the future submarine an acquisition program of national dimensions.

In the first instance, the development of a future submarine suitable for Australia's distinctive security requirements is inherently complex. Not least among the technical challenges, will be energy generation and storage needs. Will the future submarine possess air independent propulsion, for example? Our strategic geography alone imposes unique requirements on the range and endurance of a submarine expected to fulfil the roles and deliver the effects described above. Similarly, payload needs (coupled with the distance from Australia at which the future submarine could be expected to operate) generate additional demands on submarine size. The expected 25 year life of the future submarines also warrants careful consideration. To maintain their long-term effectiveness, they will clearly need to incorporate sufficient design margins for capability growth.

The planned expansion to a fleet of 12 highly-capable future submarines poses its own challenges, for this is not simply an acquisition program. While it is true that considerable effort will be devoted to the development, design and construction of the submarines, the RAN faces the equally challenging endeavour of rebuilding a sustainable submarine force. Such a force must include the right number of trained and qualified people who will underpin the capability. Closely related are the training systems that will provide our personnel with the skills they need to exploit all the advantages offered by our future submarines. There must also be through-life support arrangements that will uphold fleet availability and maintain the capability edge essential to the effectiveness of the submarines throughout their operational lives. Furthermore, there needs to be adequate shore based infrastructure to support the inherent dependencies of submarines.

Finally, and without suggesting that the future submarine capability will change any of the enduring principles of maritime strategy, the RAN will also need to continuously revisit its tactical instructions and doctrine. It will thereby ensure that it remains current as new technologies of consequence emerge from the future submarine development and the other advanced maritime capabilities announced in the White Paper.

None of these endeavours will be simple or straightforward, and it would be simplistic to think that the usual way of doing business will invariably suffice. In fact, it would be fair to say that past business practices have proved less than effective in maintaining our submarine capability. Meeting the challenges posed by the future submarine must therefore begin with a concerted and deliberate effort to remediate current shortfalls. The success of the introduction of the future submarine will hinge on the legacy of our current *Collins* class experience.

Conclusion

As one of the most ambitious acquisition programs to be undertaken by the ADF, the future submarine represents a substantial national investment in Australia's long-term security needs. Entrusted to the RAN, this key capability will also impose a substantial responsibility. Only by deliberately confronting the challenges posed will the Navy succeed in introducing the future submarine into service and sustaining it throughout its subsequent operational life.

Notes

[1] Department of Defence, *Defending Australia in the Asia Pacific Century: Force 2030*, Canberra, 2009, p. 64.

[2] Department of Defence, *Defending Australia in the Asia Pacific Century*, p. 49.

[3] Department of Defence, *Defending Australia in the Asia Pacific Century*, p. 53.

[4] Department of Defence, *Defending Australia in the Asia Pacific Century*, pp. 52 & 55.

A Sea King delivers stores during a disaster relief operation (Defence)

Australia's Naval Aviation Capability

> As a matter of urgency, the Government will acquire a fleet of at least
> 24 new naval combat helicopters to provide eight or more aircraft
> concurrently embarked on ships at sea. These new aircraft will
> possess advanced ASW capabilities, including sonar systems able
> to be lowered into the sea and air-launched torpedoes, as well as an
> ability to fire air-to-surface missiles.

Defending Australia in the Asia Pacific Century: Force 2030[1]

Australia's future naval aviation capability is given considerable priority in the recent Defence White Paper. In order to understand why naval aviation is vital, we first need to learn more about the Fleet Air Arm (FAA) and what it contributes to the joint force.

The story of aviation in the Royal Australian Navy (RAN) divides naturally into three distinct chapters. The first runs from World War I to the end of World War II. It is characterised largely by cruiser-borne reconnaissance aircraft, but includes the use of fighter aircraft launched from gun turret platforms on one way missions to counter the Zeppelin and sea plane threat during 1917-18. The second chapter covers the era of carrier aviation, spanning from 1947 through to the early 1980s and encompassing participation in the Korean War, the introduction of both jets and helicopters at sea, and, as an adjunct, the RAN's helicopter activities in Vietnam. The third chapter covers the modern, all-helicopter era with their contribution to Australian Defence Force (ADF) military and peacekeeping operations around the globe.

In the modern era, the FAA's mission remains simply to provide the aviation capabilities required to fight and win at sea. To do this in the Australian context, the FAA is structured around the embarked flight in one of any of Australia's air capable warships. In its elemental form, an embarked flight consists of a single aircraft, 4-6 aircrew, 10-14 maintainers and a logistic support package that enables extended independent operations for up to six months. The flight is posted to and fully integrated within the parent ship and remains throughout under the command of the ship's commanding officer.

A modern warship has significant power projection capabilities, yet the range at which targets may be detected and identified with onboard sensor systems remains limited by the fundamental laws of physics. Naval combat helicopters, fitted with radar, active and/or passive sonar, magnetic anomaly detection, forward looking infrared and electronic support measures systems, as well as a range of anti-surface and anti-submarine weapons, significantly extend a ship's detection ranges, maximising offensive reach and reducing vulnerability to undetected attack.

Today, the RAN's aviation force, which is home based at HMAS Albatross, Nowra, NSW, comprises:

- The Commander Fleet Air Arm (COMFAA) and his headquarters.

- 723 Squadron operating the AS-350BA Squirrel primarily in the training role.

- 816 Squadron, operating the S-70B-2 Seahawk primarily in the anti-submarine role.

- 817 Squadron, operating the Sea King Mk50A/B primarily in the utility role.

- The Naval Air Station with its associated aviation support facilities.

COMFAA is responsible to the Fleet Commander for providing a naval aviation capability and to the Chief of Air Force, through the Fleet Commander, for operational airworthiness. The squadrons are commanded by COMFAA and are responsible for training maintainers and aircrew for embarked flights and providing technical and operational support to the flights as required.

'Unrivalled' is the FAA motto. Whether operating at sea or ashore the men and women of the FAA are elite members of the RAN (Defence)

Because helicopter flights regularly embark aboard RAN ships, FAA personnel receive general service training in addition to their specialist aviation training. This training includes shipboard damage control, first aid, survival at sea and life at sea experience. It ensures that the embarked aviation complement can fully integrate with the ship's routines and contribute to whole ship daily and emergency evolutions.

Military Role

RAN helicopters perform a range of military tasks in support of operations. The principal role for embarked combat helicopters is anti-submarine warfare (ASW). Submarines pose one of the greatest threats to surface ships, due in part to the difficulty of detection using ship based systems. Helicopters, such as the Seahawk, are equipped with a range of advanced systems providing the ability to detect, track, classify, identify and attack submarines while the parent ship remains outside the engagement range of submarine-launched torpedoes. The ability to detect the submarine at range allows for the threat to be neutralised either by attacking the submarine or simply by avoiding the threat area.

Using their suite of sensors including visual search, helicopters can also detect, track, classify and identify surface contacts in both the open-ocean and the littoral, usually beyond the limit of the force's weapons coverage. While reducing the risk to the force, the helicopter offers a range of responses ranging from shadowing targets of interest (permitting the force to avoid confrontation), through to engagement with an airborne weapon, or providing targeting for ship-launched weapons at over-the- horizon ranges. Seahawks, although optimised for ASW, also provide a credible anti-surface detection and targeting capability for the Harpoon anti-ship missile carried by the RAN's major surface combatants.

Additional to their warfighting capabilities, if suitably configured, all RAN helicopters have the capacity to move equipment, stores and personnel. Stores and equipment may be transferred as an external load hung from a cargo hook or, like personnel, carried in the helicopter cabin and delivered by landing on or winching down to the ship.

With the planned withdrawal of the Sea King utility helicopter at the end of 2011, the new multi role helicopter (MRH), MRH-90, will become the Navy's primary maritime support helicopter. The Navy's MRH-90s will be identical to those operated by the Army and, in combination with the new *Canberra* class amphibious ships will provide a quantum increase in the speed of delivery of troops and equipment in an amphibious operation. The versatility of the aircraft allows far more rapid lodgement, re-supply, and casualty evacuation than the traditional landing craft. Furthermore, the helicopter is not limited to beach delivery; using ship to objective manoeuvre, helicopters can provide greater options to the amphibious force commander.

Constabulary Role

Naval helicopters are well suited to provide support to various maritime constabulary operations. After 1990 the RAN maintained an ongoing and significant role with the Maritime Interception Force in the Middle East. Embarked helicopters offered several complementary capabilities. These included providing top cover with a cabin-mounted machine-gun and rapid insertion of a boarding party using 'fast rope' techniques. In essence, the aircraft offered a range of responses applicable to the level of compliance exhibited or expected from a target vessel. This flexibility has more recently been of great value during counter-piracy operations.

Additionally, RAN helicopters can provide valuable support to local civil authorities. Capabilities include bush fire and flood assistance, surveillance and interdiction, resource management and protection and maritime barrier operations. The systems and versatility that suit the helicopter for military tasks are also valued in Search and Rescue. The FAA is regularly called upon to support both military and civilian search efforts. The Seahawk, Sea King and MRH-90 are all highly capable search units over land and over water. All are fitted with rescue winches, providing a rescue capability where landing is not practical, such as over water or dense forest.

Diplomatic Role

The FAA also supports the RAN's wider diplomatic activities. The helicopter's personnel and cargo carrying capabilities, specific communications and detection capabilities, and their ability to operate from relatively small unprepared sites, ideally suit these platforms for evacuation, humanitarian assistance and disaster relief operations overseas.

Training

The RAN relies on the Royal Australian Air Force to provide basic aircrew and technician training across a number of joint aviation schools. At Nowra the Squirrel helicopters are essential for FAA training. Training also involves the Naval Aviation Sea Survival Centre, a range of simulators and extensive helicopter specific training within each FAA squadron. Professional skills are then advanced and maintained through experience with embarked helicopters deployed at sea. In future, the naval aviation training continuum will include rotary-wing training under a new integrated Helicopter Aircrew Training System.

The Future Force

The FAA is entering a new era, not only with the introduction of the MRH-90, but most significantly with the replacement of the existing S-70B-2 Seahawks with at least 24 highly capable naval combat helicopters that will greatly enhance the RAN's ability to control the maritime battlespace. Through an accelerated procurement process, these new combat helicopters are currently planned to enter service from 2014.

By 2020, the FAA will be a fully integrated component of the ADF's system of systems, better capable of playing its part in maintaining sea control and projecting Australian maritime power at a distance. Nevertheless, naval aviation does not stand still and it will continue to evolve. Facing newly emergent high- and low-technology threats, the future FAA will likely include large numbers of autonomous and unoccupied aviation vehicles. This will bring new challenges, but Australian naval aviation has adapted successfully in the past and will undoubtedly continue to do so.

Notes

[1]   Department of Defence, *Defending Australia in the Asia Pacific Century: Force 2030*, Canberra, 2009, p. 72.

A stained glass window at HMAS Cerberus *that commemorates the two protagonists* (Defence)

November 1914 - Australia's first Victory at Sea

Dr David Stevens

> The primary object of the fleet is to secure communications, and if the enemy's fleet is in a position to render them unsafe it must be put out of action.
>
> Sir Julian Corbett, 1911[1]

> Major surface combatants, submarines and other naval capabilities, supported by air combat and maritime surveillance and response assets, are necessary to establish sea control, and to project force in our maritime environment (including for the purposes of maintaining freedom of navigation, protecting our shipping, and lifting and supporting land forces).
>
> *Defending Australia in the Asia Pacific Century: Force 2030*[2]

Ninety-five years ago the Royal Australian Navy (RAN) fought its first single-ship action at sea. Celebrated in most accounts as a worthy opening page in the young nation's battle history, the engagement between HMAS *Sydney* (I) and SMS *Emden* on 9 November 1914 has also provided the RAN with an admirable foundation for its wartime traditions. But despite such laurels, it is the battle's immediate strategic influence, and in particular its impact on the mobility of Australia's wartime resources, that is of the greatest continuing relevance.

In late 1914, Australia's sea communications were under threat from two German cruisers then known to be at large in the Indian Ocean. The first, SMS *Königsberg*, achieved some limited success harrying trade off Aden before being cornered in German East Africa, but the second, *Emden*, proved far more active and difficult to counter. Her captain, Korvettenkapitän Karl von Müller, had rapidly established a reputation for skill and daring. In just two months he had captured or sunk 25 allied steamers, a Russian cruiser and a French destroyer. In a classic example of a successful distraction campaign, by October 1914 more than a dozen Allied warships were out searching for *Emden,* insurance rates were soaring, commodity prices were rising and shipping was being kept in port. Even more worrying to Australian authorities was the danger posed to the passage of the first contingent of Australian and New Zealand troops, then awaiting transport to the European Theatre.

Initially delayed by concerns over the whereabouts of German warships in the Pacific, the 28 Australian transport ships did not begin assembling at Albany until the last week of October. There they awaited the ten New Zealand transports and four warships directed by the British Admiralty to provide an escort. Convoy 1, carrying 21,528 men and 7882 horses, finally sailed on the morning of 1 November 1914.

Captain von Müller had no knowledge of the convoy, but was aware from intercepted wireless messages that the search for him was gathering strength. He therefore chose as his next target the British cable and wireless station in the remote Cocos Islands. An attack here would not only interrupt communications between Australia and England, but also might draw the search away from his next raiding grounds, the steamer route between Aden and India.

The sea battle between HMAS Sydney *(I) and the German cruiser* Emden, *9 November 1914* (Phil Belbin)

On the night of 8 November, von Müller crossed the course of Convoy 1 less than 40 miles ahead and arrived off Direction Island the following morning. In an attempt to resemble a British cruiser, *Emden* had hoisted a false fourth funnel, but the station superintendent recognised the ruse and managed to send out a warning before *Emden* jammed his transmission. A German landing party then set to work destroying machinery, cutting the telegraph cables, and blowing up the wireless mast, but it was all too late. Some 50 miles to the north, HMAS *Melbourne* (I), the senior ship of the convoy escort, had intercepted the distress call just after 0630. Accepting that his duty was to remain with the convoy, *Melbourne*'s Captain ML Silver, RN, ordered *Sydney*, the escort closest to Cocos, to raise steam for full speed and investigate.

Sydney, commanded by Captain John Glossop, RN, had the edge over *Emden* in speed, range of guns, and weight of metal. Hence, the result of the action, one of the few single-ship encounters of the war, was never really in doubt. Nevertheless, Glossop underestimated, as did British naval authorities more generally, the effective range of the German 105-mm (4.1-inch) naval guns and just after 0940 *Emden* made the first hits of the battle. *Sydney* suffered four men killed and more than a dozen wounded, fortunately these were to be the only RAN casualties. Thereafter, Glossop kept his distance, eking maximum advantage from his speed and heavier (6-inch) weapons. *Emden* made only a dozen hits all up, and her fire soon slackened as *Sydney*'s gunnery began to tell. By 1100, only one German gun remained in action and the Australian crew watched in awed fascination as a large fire took hold of *Emden* aft and the enemy ship crumbled under the weight of their shells. First the foremost funnel toppled, then the foremast, the second funnel, and then finally the third. Incapable of firing back and hoping to save lives, von Müller made for North Keeling Island, where *Emden* grounded at 1120.

Sydney disengaged and sped after *Emden*'s collier, *Buresk*, which had come up during the action. Overtaking her shortly after noon Glossop was unable to prevent *Buresk*'s crew scuttling their ship to avoid capture. *Sydney* returned to *Emden* at 1600 and Glossop was surprised to find the German ensign still flying. After an inconclusive exchange of signals, he closed in and reluctantly fired two further salvoes. The Imperial Ensign immediately came down and the Germans displayed a white sheet on the quarterdeck. Feeling obliged to first check on the situation at Direction Island, Glossop could not render assistance to the German survivors until the following morning.

The German ship had 316 crew, and the battle left 134 dead and 65 wounded. Despite the initial delay, the care and consideration subsequently lavished on the German wounded by the Australians certainly helped to dissipate any animosity. Indeed, given the rare chance to associate closely for a few days after their battle, officers from both ships came to the joint conclusion that 'it was our job to knock one another out, but there was no malice in it'.[3] Glossop allowed the German officers to keep their swords and took great care not to offend their sensibilities, but elsewhere the news of the battle was received with unrestrained jubilation. AB (Banjo) Paterson accompanied the Australian troops as a war correspondent and even the bush poet felt the exultation:

Sydney*'s mast preserved on Bradleys Head and now saluted by every warship as they sail past* (Defence)

> Arrived in Colombo to find everybody in a wild state of excitement …
> We can hardly believe that Australia's first naval engagement could have
> been such a sensational win, for our people are not seagoing people and
> our navy – which some of us used to call a pannikin navy – was never
> taken very seriously. And now we have actually sunk a German ship![4]

Both sides agreed that *Emden*'s men had displayed consummate bravery when faced with almost certain defeat. Unusually, for a war marked by so much hatred, the general opinion in the Allied press had been that *Emden*'s actions against shipping were 'sportsmanlike' rather than indiscriminate. Admiration naturally found its focus in the character of her captain, whose chivalrous behaviour was said to have ensured that no non-combatant life was lost during the raider's rampages.

With *Emden*'s exploits singled out for praise, the quality of *Sydney*'s victory against a brilliant and cunning foe was deemed all the greater. The world's press remarked on the far-sighted statesmanship that had seen the creation of the RAN, while the journal *Punch* even depicted *Emden* as a fox in the jaws of an Australian lion. Reflecting the importance attached to the battle, both Australia and Germany did their best to ensure that the names of the two ships lived on. The Germans soon christened a second *Emden* and allowed her to display an Iron Cross at her bow in honour of her illustrious predecessor. The RAN plans to commission a fifth *Sydney* in 2017.

Yet, however much the battle is portrayed as confirmation of the Australian sailor's fighting spirit, the strategic context must not be forgotten. At the cost of a handful of lives, sea power had removed the only immediate threat to Australia's oceanic links. In direct consequence, troop convoys were able to cross the Indian Ocean without escort for more than two years and no Australian soldier was ever lost to enemy action on his passage to the Middle East. In any accounting, this was an extraordinary achievement. Australia's strategic geography does not change over time and, as the 2009 Defence White Paper reminds us, establishing sea control remains a necessary part of any Australian attempt to project power over the sea.

Notes

1   JS Corbett, *Some Principles of Maritime Strategy*, edited by E Grove, Naval Institute Press, Annapolis, 1988, p. 343.

2   Department of Defence, *Defending Australia in the Asia Pacific Century: Force 2030*, Canberra, 2009, p. 64.

3   A Jose, *The Royal Australian Navy 1914-1918*, Angus & Robertson, Sydney, 1935, p. 567.

4   AB Paterson, *Song of the Pen: Complete Works, 1901–1941*, Lansdowne, Sydney, 1983, p. 646.

PART VI:
PETER MITCHELL
ESSAY COMPETITION

USS Ronald Reagan, *USS* Bonhomme Richard *and RSS* Supreme *during Exercise RIMPAC 2010* (RAN)

About the Competition

Peter Stuckey Mitchell was born in Victoria in 1856. He grew up in the rural industry and, like his father, became a grazier on inheriting Bringenbrong Station, Upper Murray, New South Wales. During his lifetime he became a successful cattle and racehorse breeder, and at his death in 1921 left an estate valued at £215,000, from which his wife was left an annuity of £5000.

Through his Will he directed that on his wife's death the net income remaining from his estate be formed into a trust account to be known as the 'Peter Mitchell Trust Fund'. The purpose of the fund was to provide prizes 'to encourage and help the capable, health and strong to develop … their natural advantages'. This section of the Will made provision for part of the income obtained to go to the navies and armies of the British Commonwealth of Nations. Due to lengthy legal proceedings that followed the death of his wife in 1954 it was not until 14 December 1970 than an agreement was made to compete for the awards as they are known today.

The Chief of Navy has been authorised by the Trustees of the Peter Mitchell Trust Fund to use the income available for various prizes. One of these is the prize awarded for the Peter Mitchell Essay Competition. This is an annual competition, open to members of British Commonwealth navies of commander rank or below, who are full-time members, or reservists who have served at least 20 days in the 12 months prior to the closing date of the competition.

Under the auspices of the trust arrangements, three prizes are awarded each year:

- Winner Open Section.
- Winner Officer's Section.
- Winner Sailor's Section.

Lieutenant Commander Pardeep Singh Sethi, Liason Officer from INS Tir, *provides assistance to HMAS* Sydney *as she prepares to berth in Kochi, India* (RAN)

Naval Cooperation: A View from India

Commander Manav Sehgal, IN
2009 Winner Open Section

A man of war is the best ambassador.

Oliver Cromwell[1]

The Oxford English Dictionary defines 'cooperation' as 'working together to achieve something'. Nation states may be said to cooperate when in order to realise their own goals, they modify policies to meet the preferences of other states. 'Conflict' and 'cooperation' between states can be explained through the analogy of two slabs of cake laid end to end as shown in Figure 1.[2]
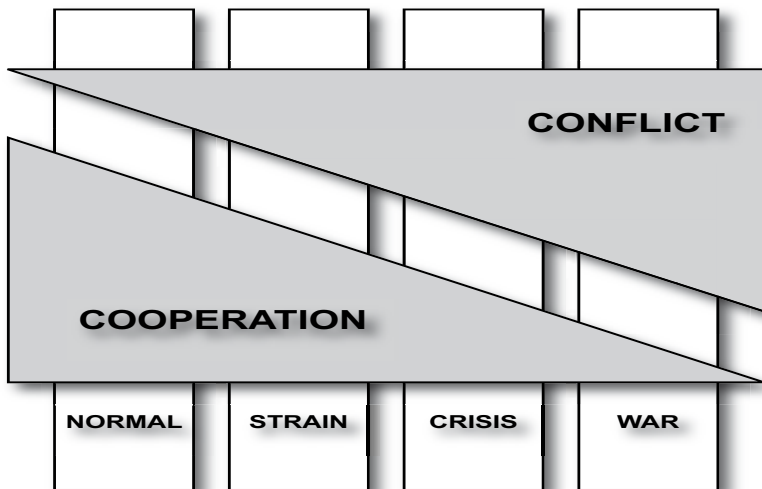

Figure 1: A Conflict Cooperation Model (Geoffrey Till)

History bears testimony that there is a close connection between state relations and military interaction. That is why nation states guardedly deploy their military forces either with (cooperation) or against other nations (conflict). This is also the reason why nations find it easier to cooperate in other fields such as economy, culture, scientific research, than in the field of security. The end of the Cold War standoff has led to the abolition of a major cause of global and related regional insecurities. In the changed world order, irregular non-traditional threats are overtaking conventional forms originating from nation state adversaries. While the latter can be countered through military deterrence, dealing with

the former requires sustained action by various agencies, both internal and external to the region, actions that transcend traditional frontiers and sea lines. Consequently, defence cooperation has attained many new forms and meanings. Today, defence cooperation encompasses all activities undertaken by the Defence Forces to avoid hostilities, build and maintain trust, and to contribute in conflict prevention and resolution.[3] Defence cooperation activities are not structured and conducted in isolation, but form part of the larger process of inter-state cooperation. The degree of defence cooperation has for long been dependent on the prevailing relations between states. Where the relations are good, cooperation has flourished. Where there is a dip in relations, countries have resorted to ceasing cooperation, and at times even indulged in direct military coercion. During the Kosovo conflict, in direct retribution of the mistaken bombing of the Chinese embassy in Belgrade by the US, China had suspended port calls at Hong Kong for all US naval vessels. These could be resumed only in the year 2000.

This essay aims to establish that the converse of the above is equally correct - that is to say better defence cooperation (in particular naval cooperation) improves the relations between nations, and thereby helps reducing tensions. The main arguments of the essay have been structured with reference to answering three essential questions: Why do navies cooperate? How does naval cooperation help in reducing tensions? How can we cooperate better? Naval cooperation is a subset of defence cooperation, and comprises of operations in which naval forces of two or more nations operate in the same theatre, without formal arrangements to coordinate operations or an integrated command structure. The various levels at which naval cooperation can be conceptualised are at the alliance level; in coalitions; non-coalition naval cooperation; and the more general, maritime cooperation.[4] An alliance involves the highest degree of political commitment. Operations carried out under the auspices of an alliance may encompass the entire span of maritime operations, from benign operations to full scale war fighting. Coalitions entail a political commitment and defined political objectives by coalition members. Coalitions are more limited in scope than formal alliances, often lacking a mutual commitment and not requiring the same degree of shared worldviews. Naval cooperation at the non-coalition level does not require any specific common political or strategic objective. Such cooperation comprises of 'actions undertaken by mutual consent'.[5] This is focused on non-controversial areas especially in benign and constabulary roles. A nation can thus continue to reap the benefits of such cooperation as a 'partner' while still distancing itself from being an 'ally' of the other. Maritime cooperation involves navies and/or other maritime security agencies such as coast guards that engage in benign or constabulary operations in normal conditions. Maritime cooperation may or may not involve navies directly.

While a relatively high degree of political commitment is presupposed in alliances and coalitions this is not binding for the latter two levels. Thus the main focus of the essay in as far as 'reducing tensions' goes, is at the non-coalition naval cooperation and maritime cooperation levels. Activities falling within the ambit of these levels

include, but are not restricted to, maritime security dialogues, seminars, goodwill visits, combined exercises, exchange of observers, disaster management, humanitarian assistance and sports and adventure activities. Such cooperation may also include the provision of special rights and privileges to partners such as facilities for operational turnaround, rest and recreation and training. Cooperation at these levels takes place only when and where there is a convergence of common minimum interests.

Why Do Navies Cooperate?

Oceans are a primary source of food, minerals, energy and transportation in the world, all of which are prerequisites to national well being for littoral countries. Increasingly, nations are being confronted with threats, other than war, both at sea and from the sea, which are in conflict with their national interests. Today, the maritime challenges faced by nations include:

- Increase in illegal activities along with the progressive growth of legitimate maritime activities.

- Manifold growth in ocean use that exceeds the carrying capacity of the oceans, causing pollution of the marine environment.

- Horrific changes in the world and ocean environment, leading to increased loss of life and property from natural disasters.

- Potential for conflict in the quest to demarcate imaginary lines at sea to claim sovereignty over ocean resources.

Most nations appreciate that the vast and porous nature of the seas makes 'constructive engagement' inevitable in the current times. As Singapore's Deputy Prime Minister Mr Tony Tan has eloquently explained, 'individual state action is not enough. The oceans are indivisible and maritime security threats do not respect boundaries'.[6] Since bigger maritime powers are more vulnerable to disruptions, they tend to be at the forefront of consortia supplying security to them. The 'Global Maritime Partnership Initiative' (proverbially called '1000 ship Navy') of the US Navy is aimed at achieving peace and order throughout the world's maritime domain through new levels of naval and maritime cooperation. The Asia-Pacific region, beset by maritime sources of international dispute and crime, is host to a vast number of security constructs videlicet *Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia* (ReCAAP), ASEAN Regional Forum (ARF) and Asia-Pacific Economic Cooperation (APEC) at the Track I level, Council for Security Cooperation in the Asia Pacific at the Track II level and Western Pacific Naval Symposium (WPNS) and Indian Ocean Naval Symposium (IONS) at the naval level. In addition, dedicated anti-piracy patrols namely, Malacca Strait Patrols carried out by the littoral states Malaysia, Singapore, Indonesia and Thailand exemplify the advanced level of cooperation attained in the

region. These have resulted in drastic reduction in the acts of piracy in the Malacca Strait (two incidents per year in the last two years) and the London based insurer Lloyds has removed the Strait from the list of vulnerable areas.[7]

The specific avenues where benefits accrue due to cooperation between naval forces are:

- **Maritime Security.** Besides the Cold War, a major cause of insecurity for many states has been intra-regional rivalries. These rivalries have constantly overshadowed the issues of collective security and maintenance of good order at sea. Consequently, serious degradation has come about in the overall security environment. In the changed world order, transnational maritime crime has assumed centre-stage, with criminals and anti-social elements virtually exploiting the immunities afforded by the *United Nations Convention on the Law of the Sea 1982* and International Maritime Law. Various forms of transnational transgressions being witnessed world over include acts of piracy, terrorism, drugs, arms or human trafficking, environmental degradation from oil spills, waste disposal and pollution by ships, illegal exploitation of resources such as fish and natural resources.

- **Prevention of Environmental Degradation.** Pollutants recognise no demarcations or boundaries at sea. Hence, the ill effects of any environmental related incident are not expected to remain limited to the waters of any one country. The contiguous nature of the seas thus dictates a cooperative effort in tackling environmental degradation related issues.

- **Humanitarian Assistance and Disaster Relief.** The advancements in communications have resulted in bringing to us much more rapidly and vividly the erstwhile miseries suffered by humans in the wake of calamitous situations. Therefore, humanitarian assistance and disaster relief has become a major theme of our times. There are also growing anxieties over the possible increase in the frequency of natural disasters as a result of global warming. By harnessing the combined maritime capabilities of countries, much greater synergy can be attained not only in humanitarian assistance and disaster relief but also in preventing (also predicting, forecasting, training and awareness) and getting prepared (including detection, tracking, limiting damage and rehabilitation of populace) for disasters.

- **Search and Rescue.** Search and rescue is another aspect where manifold improvement can be attained by cooperation. By effective sharing of resources, search and rescue operations can be made swifter, safer and more fruitful. The success of the European Maritime Safety Agency in dealing with search and rescue related issues all over Europe is a case in point.

- **Reduction of Costs.** Cooperation makes possible the pooling of resources between countries for solving common problems. This spreads the risks and costs, while increasing, and demonstrating, the legitimacy of the operation. It therefore provides a 'means by which smaller navies can exert more influence than they could on their own'.[8]

- **Mutual Learning.** Multinational maritime forces benefit from frequent periods in company to exercise and develop their full operational effectiveness.[9] Cooperation also enables enhancement of maritime domain awareness, examining and imbibing of 'best practices' and generation of interoperability.

- **Improvement in State Relations.** The diplomatic role is an important role of navies the world over. Most nations regard 'men of war' as virtual 'ambassadors' of the state and use them as instruments of foreign policy.[10] Warships are commonly employed on 'flag showing' missions with the aim of fostering cooperation and building 'bridges of friendship across the oceans'.[11]

How does Naval Cooperation Help in Reducing Tensions?

Naval operations in the past were customarily shrouded in confidentiality. This was because apprehensions prevailed not only regarding the possibility of the adversary finding out the technical and combat parameters of vital equipment, but also about the likelihood of his estimating crew efficiency, procedures, morale and level of preparedness. This information, if obtained by the enemy, could be used in times of war and peace, to his advantage. Alternately the information could be supplied to any other interested nation. In the absence of a clear understanding as to who the adversary was or could be, navies resorted to operating out of 'sight' of others. In the event of unscheduled encounters at sea, the reactions often ranged from between neutral, cold, competitive to aggressive and hostile.

In the present times much has changed over the oceans. Naval units operate self-assuredly in the littorals, in the vicinity of ships and aircraft from other nations, communicating and even exercising with them. The levels of cooperation have shown a steady upswing and so has the scope of exercises carried out. Unscheduled encounters are not only used for exchanging pleasantries, but also navigational and operational information. Notwithstanding these changes, in the complex world order, relations between states are shaped by various other factors such as historical, ethnic, economic, political, ideological affinities and ties besides defence cooperation. There exists no simple formula to extrapolate the benefits of naval cooperation directly on to state relations; the benefits can at best be estimated subjectively. Further, the gestation period for a change in perception is long. Therefore, it is difficult to quantify the effects

of naval cooperation in improving interstate relations. Yet, the reality of the benefits is implicit in the very fact that nations and navies continue to indulge in this demanding and costly endeavour year after year, even in these very 'money mindful' times. The factors contributing to tensions are:

- **Sovereignty Concerns.** The very medium of the oceans that the navies operate upon, serves to quell fears and concerns arising from sovereignty issues. This makes it possible for even rival navies to cooperate on the high seas without stirring any such concerns at home. Operating together at sea does much to calm the nerves while still not raising concerns of giving leeway to the adversaries.

- **Transparency.** One of the biggest spin-offs of naval cooperation is transparency. Transparency is an accepted norm of confidence-building. Transparency breeds trust while secretiveness breeds distrust. The 'Airborne Monitoring Agreement', the predecessor of the 'Open Skies' program, between Hungary and Romania in the early 1990s, was designed to promote transparency between the two countries and was considered a 'notable success in smoothing the relations'.[12] Transparency helps competing nations solve their security dilemmas by providing a more realistic assessment of each other's capabilities and intentions. This prevents assumption of the worst case scenario, as also the spiralling chain of reactions which normally aggravate tensions and conflicts.

- **Benchmarking.** While promoting transparency, naval cooperation also offers an opportunity for the participating navies to benchmark each other's technology, professionalism and spirit. In a tacit way this adds to the net deterrence worth and helps in preventing conflicts. In the year 2000 for instance, Singapore participated in 70 exercises with its military partners, hosted multilateral exercises in diving and mine countermeasures with other members of the WPNS and a submarine rescue exercise with the Japanese and South Korean navies.[13] 'Such exercises enhance friendship and understanding, and also allow the Republic of Singapore Navy to benchmark itself against some of the most advanced navies of the world'.[14]

- **Image Enhancement.** Naval cooperation offers a means to showcase the operational capabilities of the participating navies. By frequent participation, interaction with major powers and staying operationally relevant, a navy can carve out a positive image of the country in the world arena. This helps in creating 'political space' on the world stage that further perks up security.

- **Channels of Communication.** When militaries cooperate many more channels of communication are opened up at the ministry, headquarters and unit levels. These channels normally help maintain links even in times when the political tensions are high, and consequently minimise the chances of accidental escalation.[15] In the wake of the 26/11 Mumbai terrorist attack, the continual Director General Military Operations level talks between India and Pakistan helped in dismissing speculation about troop build up and normalised the situation on the borders.

- **Confidence Building.** Experience has often shown that the seas provide a natural environment where confidence building measures are easier to implement than on land. Even during the height of the Cold War in 1972, America and the Soviet Union had signed an agreement on 'Prevention of Incidents on the High Seas', which was mutually beneficial to both countries. While this agreement was not an end in itself, it was definitely a 'catalyst for a change in relationship'.[16]

- **Transnational Concerns.** Absence of cooperation can lead to alleviating tensions between countries as issues like arrest of nationals of the other can crop up. Even otherwise, issues like arrest/harassment of fishermen can become sore points in relations and raise tensions.

- **Socio-Political Factors.** Naval ships are used as tools of diplomacy in cooperation. Cooperation activities such as Fleet Reviews, port visits, exchange of observers, seminars and informal gatherings foster interaction and cultural sensitisation. This in turn cultivates understanding, trust and mutual respect. China's International Fleet Review 2009 at Qingdao was aimed at 'promoting understanding' and 'removing suspicions about China being a threat to World security'.[17]

- **Economic Spin-Offs.** Multinational cooperation activities provide navies and state defence industries openings to put their products on display for prospective buyers. For this reason, most countries prefer to commit indigenous platforms for naval cooperation. Provision of operational turnaround and other facilities augments the revenue earnings. Other examples of economic benefits are in the field of marine hydrography. Improved economic association has a net deterrence value of its own and along with other factors helps diffuse tensions, if any, between states.

- **Media Coverage.** Military cooperation activities receive generous media coverage, nationally and internationally. Accounts of military cooperation reassure people on the streets, and the politicians in turn, about the peaceful intents of the cooperating nations. Sustained

coverage about military cooperation year after year has a soothing effect on the tensions between states and helps to overcome or reframe the image of the cooperating partners.

How Can We Cooperate Better?

- **United Nations Involvement.** Until the end of the Cold War, United Nations (UN) peace support operations were limited to the domains of the land and air forces only. Naval forces, where deployed, were in supporting roles to land operations. In 1998, the UN Independent World Commission on the Oceans had called upon national navies to be employed in a supranational role to police the oceans and uphold international law.[18] A UN maritime standing force has also been suggested by Norway and Russia in the past, to deal with the security threats in the maritime environment. Flying a UN flag, in addition to the country's flag, a warship would signal that is acting in good faith, against a threat of common concern, and under the sanction of a universally accepted body. This would enhance the effectiveness and acceptability of the mission. Another advantage of UN peacekeeping operations is that they may involve countries otherwise marginalised by their economic weakness.

- **Frameworks.** For any cooperative structure to be enduring, it needs to be institutionalised under a framework. A well publicised structure of cooperation acts as a deterrent for potential troublemakers. In addition, frameworks provide strategic reassurance, both to the cooperating partners and to other nations. The WPNS and IONS are examples of cooperative frameworks at the naval level. Frameworks have a charter that is binding on all partners. However, when the agreements contained within the framework are violated, these then send strong signals of malign intent. Such signals are less obvious when there are no frameworks in the first place. Therefore formalising cooperation into frameworks would 'pre-empt disputes as well as prevent disputes from developing into conflicts by enhancing trust and understanding'.[19]

- **Multilateral Cooperation.** 'Multilateral security cooperation is important to foster trust among member countries'.[20] By participating in multilateral forums nations and navies dispel fears about their intentions and promote better interoperability. Regional agreements act as building blocks of multilateral cooperation since they best enshrine cultural sensitivities, religion and other regional concerns.

- **Bilateral Cooperation.** Bilateral cooperative arrangements have a higher threshold of common minimum interests than multilateral arrangements and also permit easier execution. Therefore, bilateral cooperation forums are more fruitful. Networks of bilateral cooperative arrangements enable states to customise their relationships, maximising the value and minimising the risks. In short, by simply increasing the bilateral relationships, the quality of cooperation on the whole also stands to improve. Thus, multilateral cooperative arrangements need to provide adequate 'room' for bilateral cooperation.
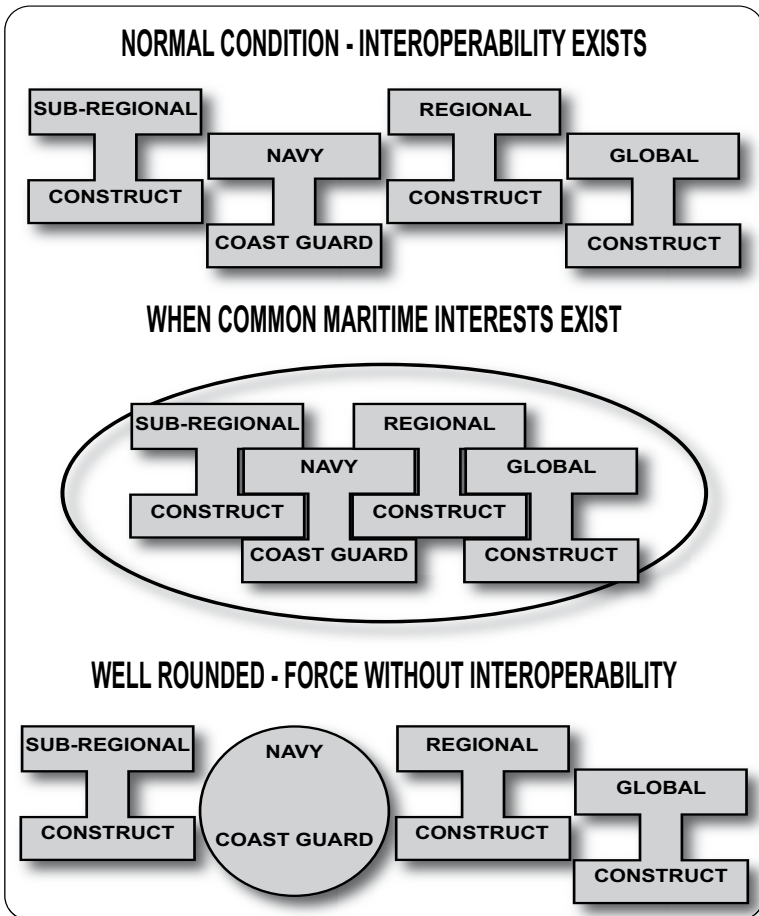

Figure 2: The three conditions of Interoperability Model (Manav Sehgal)

- **Interoperability.** Even if there is willingness between nations to cooperate, successful execution is not guaranteed unless there is interoperability between them. 'Interoperability is about much more than commonality of equipment, and we would be unwise to restrict ourselves to unduly narrow mental constructs'.[21] It includes the development of standard operating procedures, common or compatible doctrine and tactics, techniques and procedures.[22] Interoperability is required at the minimum across the core management foundations of policy, organisation, training, material, leadership and education. Consequently, there is a need for existing mechanisms at various levels to be aggressively and imaginatively used to promote interoperability. An interoperability model elucidating cooperation at various levels is illustrated below and shows how the lack of interoperability inhibits cooperation.

Conclusion

> Although our forces can surge when necessary to respond to crises, trust and cooperation cannot be surged. They must be built over time.
>
> *A Cooperative Strategy for 21st Century Seapower*[25]

The end of the Cold War has irrevocably altered the character of international relations. One of the most noticeable changes has been the increased willingness of nations to 'cooperate' in a mutually beneficial way. Likewise, in the maritime domain, naval cooperation activities have also received a fillip. Increasingly, navies are cooperating for combating crime at sea, pollution control, exploitation of oceanic resources and mutual assistance during disaster situations. Besides these, the indirect spin offs of cooperation have been cost cutting by sharing of assets and mutual learning. That good relations between nations augur better cooperation can be understood without difficulty; however this essay asserts that the converse is also true. In sum it proclaims that 'defence cooperation follows as well as builds good bilateral (and multilateral) relations'.[23] While naval cooperation promotes transparency between states and prevents assumptions of worst case scenarios, absence of cooperation frequently leads to expansion of disputes. Consciously aware, nations use cooperation as a platform to showcase their preparedness and economic, industrial, scientific and military might. This adds to the net deterrence value of the armed forces and also improves the national image. Sustained cooperation helps in changing mindsets not only of the participants but of the nations through the media. Greater economic relations as a result of naval cooperation increase dependency and develop into disincentives to conflicts. Despite this, much remains to be accomplished in the realm of naval cooperation. International naval cooperation needs to be dovetailed with the actions of the UN. There is also a

clear rationale for frameworks where the requirements of national security of states are enmeshed with one another, so that threat perceptions and vulnerabilities are reduced, and security is attained at a lower cost. These cooperative frameworks should 'harness both the close spirit of bilateral ties and the collective synergies of multilateral ventures'.[24]

Notes

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4   Chris Rahman, *The Global Maritime Partnership Initiative: Implications for the Australian Navy*, Papers in Australian Maritime Affairs No. 24, Sea Power Centre - Australia, Canberra, p. 35.

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10   Integrated Headquarters Ministry of Defence (Navy), *Freedom to Use the Seas: India's Maritime Military Strategy*, p. 94; Royal Navy, *BR 1806*, *British Maritime Doctrine*, 1999, pp. 57-90.

11   'Bridges of Friendship across the Oceans' was the theme of the International Fleet Review held at Mumbai in February 2001. Ships/delegates from 30 countries participated in the event.

12   The Open Skies program was one of the efforts to calm tensions in Europe after the end of the Cold War. This program premised on reducing suspicions between states by allowing member states to carry out airborne surveillance within the other's national airspace on demand. In March 1990 tensions broke out between Hungary and Romania, most notably at Tirgu Mures. Fortunately peace began to prevail and both sides sought to calm tensions within themselves. As part of this process, Romania proposed the 'Airborne Monitoring' program with Hungary. Dan Lindley, 'Cooperative Airborne Monitoring', *Contemporary Security Policy*, vol. 27, no. 2, August 2006, pp. 325-343.

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Naval Cooperation: A View from Australia

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In terms of world politics there are three types of relationships that govern interaction between states and their relationships, bilateral, multilateral and unilateral. This essay looks at the definition of unilateralism, bilateralism and multilateralism; the benefits and drawbacks of unilateralism, bilateralism and multilateralism in a political and global sense; current bilateral and multilateral cooperation in a maritime environment; and the ways that naval cooperation can lessen tensions between countries.

Unilateralism, Bilateralism and Multilateralism

Unilateralism is any doctrine or agenda that supports a single-sided action. Unilateralism is often seen as disregarding of other parties. However, unilateralism may be preferred in those instances when it's assumed to be the most efficient, such as with issues that can be solved without cooperation. At the forefront of the unilateralism debate is the United States and the Iraq War. Many opponents of the war have argued that the United States is 'going in alone' in Iraq without the support of multilateral institutions – NATO and the United Nations (UN). This has caused much tension between the United States, NATO and the UN. Post World War II (WWII) Japan is an example where unilateralism has been successful. Japan took only five years before adopting its constitution. On the other hand, Germany was divided into West Germany and East Germany for 45 years whilst being controlled by the United States, France, Great Britain and the Soviet Union before being reunited. However one can argue that post-war Germany should not be seen as a failure on multilateralism due to the unilateral approach taken by Stalin and the Soviet Union post-WWII.

Bilateralism encompasses the political and cultural relations between two states. Most international diplomacy is done bilaterally. There is some debate on the merits of bilateralism versus multilateralism. The first major rejection of bilateralism came after World War I when many politicians agreed that the complex pre-war system of bilateral treaties had made the war inevitable. This led to the creation of the multilateral League of Nations. A similar reaction against bilateral trade agreements occurred after the Great Depression, when it was argued that such agreements helped to produce a cycle of rising tariffs that deepened the economic downturn. Thus after WWII, Western countries turned to multilateral agreements such as the General Agreement on Tariffs and Trade. Despite the high profile of modern multilateral systems such as the UN and the World Trade Organization, most diplomacy is still done at the bilateral level. Bilateralism is considered to be more flexible compared to most multilateral systems.

However when there is an inequality in power, resources, money, armament, or technology, there is a tendency for the stronger side to exploit the bilateral diplomacy.

Multilateralism is a term in international relations that refers to multiple countries working in concert on a given issue or task. International organisations, such as the UN and the World Trade Organization are multilateral in nature. The major supporters of multilateralism have traditionally been the middle powers such as Canada, Australia and the Nordic countries. Larger states (such as the United States) often act unilaterally, while the smaller ones may have little direct power in international affairs aside from participation in the UN.

Multilateralism is advantageous in certain issues where there are many stakeholders from various countries and on issues that can only be resolved by many countries working together. The stories of Franklin Roosevelt during WWII illustrate this point. He not only built alliances with Great Britain and the Soviet Union to fight the war against the Axis Powers of Japan and Germany, but he also began to build an organisation of the major powers that would also bring in the rest of the world's countries. Roosevelt understood that the future security of the world would depend on effective cooperation. Roosevelt's hope was that an effective Security Council with collective action could stop aggressors like Hitler and the Japanese from rising again. Roosevelt also saw that one of the reasons for WWII was that countries failed to cooperate in confronting Germany and Japan. If the big powers had worked together, they might have prevented the war altogether. However some argue that 'large numbers create problems for states attempting to cooperate. Having many players can increase the conflicts of interest among them, uncertainty about others' preferences'.[1] Multilateralism has a very large impact on global security, as this can only come about through a global organisation. Countries acting in a strictly unilateral or bilateral sense will tend to have a negative effect on global cooperation and security.

Recent Naval Bilateral and Multilateral Operations and Their Benefits

Current naval bilateral and multilateral operations and agreements include: port visits, fleet reviews, senior personnel visits; multilateral forums and conferences; maritime information exchange; bilateral or multilateral naval exercises.

Port visits, fleet reviews, senior personnel visits

This is perhaps the most basic of cooperative building blocks. Although these activities are commonplace between ally countries, they also provide the least controversial way of cooperation between states with little common political ground and actual or potential adversaries. The KAKADU 'fleet concentration period' hosted by Australia is a highly successful multilateral naval exercise. In the past Exercise KAKADU has

involved the Royal Australian Navy (RAN) and participants from Indonesia, New Zealand, the Philippines, Papua New Guinea, Singapore and Thailand. India also hosted an international fleet review in Bombay in February 2001 involving ships from 20 navies, followed by multilateral PASSEX manoeuvres.

Multilateral forums and conferences

Multilateral naval forums have great potential to promote cooperation between navies. Involvement of naval personnel in other official cooperative security forums promotes naval interaction. Participation of naval personnel in relevant conferences is another form of naval cooperation, for example:

> The Western Pacific Navy Symposium … gathers representatives of the navies of the ASEAN states … for a frank exchange of views on a wide range of issues, including the law of the sea and SLOC [sea line of communication] protection. It is a unique forum and a significant step towards better understanding among regional navies.[2]

Maritime information exchange

The establishment of a maritime information database is a step towards greater regional cooperation and enhancing maritime security. Such databases include information on shipping, ports, marine environmental issues, regional hydrographic and oceanographic data, piracy and other illegal activities at sea that may pose threats to commercial and other civilian maritime traffic. Many authorities already collect much of this information on a national basis, yet there are many benefits to establishing a free-access, open-source regional database. It acts as both an information source and a means for enhancing information exchange and confidence building. A current initiative, sponsored by the RAN and developed by Australia's Defence Science and Technology Organisation, is the Strategic Maritime Information System. This software application can store information which is easily accessible in user-friendly formats, including maps and charts. The software is designed to provide information on: territories and maritime boundaries of regional states; ports and maritime transport facilities; trade routes; shipping movements; environmental and meteorological data; and reports both of illegal activities at sea and marine pollution. The program has potential to function as the basis for better maritime information exchange and cooperation to the benefit of all users, including navies.

Another example of naval information exchange is the US Pacific Command's Asia-Pacific Area Network internet site which provides unclassified information on regional security issues, in addition to its primary task of facilitating communications for the planning and coordination of coalition operations:

> The upsurge of piracy in the [Asia-Pacific] region is driving regional countries to cooperate. The anti-piracy mission has started to climb up the list of priorities for the region's armed forces. Several states have entered into bilateral and multilateral agreements to exchange intelligence information, and allow joint anti-piracy patrols along with (though not within) their common maritime frontiers.[3]

Bilateral or multilateral naval exercises

Bilateral or multilateral maritime exercises provide naval forces the opportunity to cooperate, work together and train across a different range of naval disciplines. These exercises promote: a sharing of strategy and information; opportunities to learn from other navies; discussion between navies; learning another's point of view, culture and ideas; and allows us to extract experience that would otherwise not be available to us in a unilateral environment.

Ways that Naval Cooperation can lessen International Tensions

Bilateral maritime agreements are beneficial between countries that have a large amount of interaction with each other or close operations. These countries normally seek negotiation of additional bilateral agreements. These build upon already established multilateral agreements and will generally be in place between navies that have a large amount of interaction. For example a Sino-Soviet bilateral agreement might be beneficial given that Soviet and Chinese vessels have been involved in several near-collisions and have exchanged warning shots. An example of a bilateral agreement is the relationship between Australia and Singapore. This bilateral relationship has developed into a stronger and deeper (informal) strategic partnership, one that is strengthened through bilateral naval exercises such as Exercise SINGAROO. In August 2008 Prime Minister Kevin Rudd and Singapore Prime Minister Lee Hsieng Loong met to sign a memorandum of understanding to strengthen bilateral defence ties. A joint statement by the Prime Ministers stated that the pact aims to enhance the defence relationship between the two countries through 'expanding cooperation and sharing resources to develop military expertise'.[4] The Singapore Defence Ministry specified that 'both countries will cooperate through exercises and operations, in areas such as humanitarian and disaster relief, search and rescue and peace support'.[5] This bilateral pact promotes cooperation in defence technology research and calls for annual meetings between the two Defence ministries.

In order to develop a common doctrine and operational procedures in the maritime environment we require greater cooperation on the water, as well as improvement of communications interoperability. Operational cooperation requires navies to share significant levels of equipment standardisation and common standard operating procedures:

> Multilateral security cooperation is an integral aspect of the evolving regional security architecture … cooperation among regional defences forces – involving reciprocal visits of senior officers, joint exercises and joint training programs – has burgeoned. Concepts and mechanisms for conflict prevention and arms control are now receiving more serious official consideration, with a view towards institutionalizing arrangements for preventive diplomacy and conflict resolution within the next five to ten years. There is also considerable interest in the institutionalization of mechanism to prevent the proliferation of weapons of mass destruction.[6]

Cooperative multilateral defence activities have a positive affect on the cooperation between different navies in the maritime environment, this in turn is improving regional maritime security. The improvement of security lessens tensions between countries.

Multilateral naval agreements can make provisions for 'regulating dangerous manoeuvres, restricting harassment and establishing better means of communication at sea … establishing a uniform system of communications for military vessels'.[7] A multilateral approach towards incidents at sea will reduce the number of naval incidents:

> A multilateral agreement incorporating restrictions on dangerous manoeuvres and harassment would probably give such regulations the same status as the rules of the road. The overall effect would be to build confidence on high seas.[8]

It will also lessen disputes between ships and nations. The recent multilateral exercise held by the Pakistan Navy, Exercise AMAN 09 (Translated as Exercise PEACE) was a great success. It involved naval participation from 31 countries and was:

> Designed to improve maritime security in the region, strengthen international partnerships and highlight the importance of maritime cooperation … This exercise provides US and international forces the opportunity to work together and train across the spectrum of naval disciplines … Aman 2009 will improve the interoperability and tactical proficiency between coalition nations and enhance our navies' effectiveness in supporting maritime security objectives.[9]

The benefits of multilateral or bilateral naval exercises is that they assist partner nations to plan and execute command, control, and communications systems in support of future combined humanitarian, peacekeeping and disaster relief operations. The training gained from such exercises will also allow participating nations to continue developing partnerships in the region and further enhance joint military capabilities. Joint bilateral or multilateral exercise will improve the assembled nations' ability to work collaboratively towards solving a shared regional crisis. In the long term such collaborations will increase world stability.

Conclusion

> Extension of existing confidence-building measures to seas and oceans, especially to areas with the busiest sea-lanes; notification of major naval activities; the invitation of observers to naval exercises or manoeuvres; limitations on the number or scale of naval exercises in specific regions; exchange of information on naval matters; a better flow of objective information on naval capabilities; greater openness and transparency on naval matters in general; strict observance of existing maritime measures which can or are designed to build confidence; rules guiding naval activities when in conflict with civilian activities, in accordance with the current law of the sea; and steps to ensure respect for existing international law with regard to the rights of vessels belonging to the states neutral to a conflict … The experience gained from bilateral agreement on the prevention of incidents at sea belong territorial sea is encouraging.[10]

Australia plays an active role in promoting further multilateral cooperation by improving existing relationships, expanding its training and education assistance to regional navies, and developing a regional maritime information database. There are many benefits to bilateralism and multilateralism, there is no doubt that they help towards decreasing international tension between states. The greater openness, transparency, confidence and agreements gained through bilateralism and multilateralism helps nations develop a culture of understanding, respect, trust and cooperation. This is the basis for which a good international relationship is formed and it prevents conflict between nations.

Notes

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An international collection of caps, from the ship's company and invited guests and dignitaries aboard HMAS Kanimbla *for the Australian Reception, hosted by Commodore Fotillas, Commodore Stuart Mayer, CSC, RAN, and Commanding Officer HMAS* Kanimbla, *Commander Tim Byles, RAN* (RAN)

Thinking Outside the Box:
All I Ever Knew about Naval Ranks, I Learnt from Star Trek

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Like many of the current senior Non-Commissioned and Commissioned members serving in today's Commonwealth navies, I grew up in a non-military household. In our youth, our only exposure to the military way of life was in small doses and delivered by a television set. The appreciation of rank structure we gained from this exposure was minimal at best. We learned from 'the box' that whether you were a member of 'the Unit' or a crew member on the Starship *Enterprise*, the true heroes always seemed to be officers. Oh … and never wear a red shirt while investigating a new planet.

When we enlisted or accepted our commissions, for reasons as individual as each of us, we were confronted with an unexpected naval rank structure stratified not unlike the civilian society we came from. There were those who, for whatever reason, were designated to lead, and those who were designated to follow. You quickly realised that of those designated leaders, there were those who were good at it and those who didn't even seem to grasp the concept. On the other side of the coin, it was readily apparent that some of those that were supposed to follow weren't very good at it either. As we progressed through the ranks, what seemed at first glance a simple system became more and more complex. When ratings, trades, specialties, training and other criteria got thrown into the mix, the naval rank structure became much more complicated than just Petty Officers or Lieutenant Commanders. Much of this complexity appears to derive from the increasingly technological basis of today's navy. To understand what led to the modern naval rank structure, it is best to look at the origin of the practice and the technological factor that has driven its evolution to today's current rank structure. Only then can we fully appreciate the crossroads at which we are currently standing.

Origins

The Commonwealth navies of today are, for the most part, direct descendants of the Royal Navy (RN). The RN itself finds its roots in the feudal navies of the British Isles in the Middle Ages. The rank structure of these nascent navies was primitive at best and for the most part reflected the structure of feudal society itself. The 'warships' of this age were built on the lines of the Viking invaders' ships and were propelled mainly by oarsmen with some assistance from a single square sail. The landowners of the various kingdoms were charged with building, crewing and maintaining warships for the defence of their realms.

When an inland parish supplied a crew for its ship it found itself hard pressed to find any experienced sailors among its numerous peasants. The parish would supply untrained crewmen for manning the oars and trained fighting men from the *fyrd,* 'a semi-professional force made up of men of some social standing, small landowners who could afford proper weapons and equipment … and the time for thorough training in their use' to fight the ship.[1] The man in command of the ship, the steersman, would be a member of the *fyrd* and would most likely possess no knowledge of how to actually sail a ship. To this end the parish would have to employ professional seamen whose main duties dealt entirely with the sailing of the vessel.

In this way the composition of the crew would mirror the composition of feudal society itself. The untrained oarsmen would be drawn from, and equate to, the peasantry. The professional seamen would be considered a slightly higher class by virtue of their specialised knowledge, roughly equivalent to civilian tradesmen. Finally the command structure would be in the form of landowners charged with leadership and fighting. With little change in ship design over the next several centuries, there was little need to change the composition of the crew. Changes did happen, but at a very slow pace and with little impact on the rank structure.

History

After the invasion of 1066, Norman feudalism rapidly replaced the more centralised Anglo-Saxon feudalism. With political power resting mostly with the barons, little incentive existed to maintain a standing navy and sea power in Britain was allowed to fade away for a time. What little navy remained was employed as a royal ferry service to shuttle the Norman kings and their courts to and from Normandy. During this period 'technological' advances were limited. The addition of fixed structures fore and aft, the so-called 'fore-castles' and 'after-castles', allowed archers to attack other ships and land positions from on board. Even with this ability, the primary use of warships remained the transport of troops and equipment to landings where they would fight ashore. With the reign of King John there was finally a substantial standing fleet paid for by the crown. He also caused the first dockyard to be built at Portsmouth and appointed a 'Keeper of the King's Ports and Galleys' to take over administration of his navy.

In the late 13th century the practice began of appointing Admirals from the nobility to take command of formations of ships for tenures of a year or for specific campaigns. These knights or barons had little to do with the command of their fleets but rather dealt more with the administration and finances. They were also charged with impressing ships from merchants and communities to serve in the King's Fleet. By the end of the 14th century the Fleet Admirals were often drawn from the higher ranks of English earls who looked at this as a way to increase their personal wealth.

Finally in the 15th century, in the space of a single generation, warship building changed from the single mast, Viking 'longship' design to the Mediterranean multi-masted, square-rigged design. Further technological advances followed quickly on the heels of this change. Among these, perhaps the change with the most impact was the square mainsail being divided into a course and topsail, which made tacking much more practical. Eventually the heavy hulled design was replaced by the lighter design of framed vessels which allowed smaller, faster and more manoeuvrable ships to be built. All these advances required more specialisation of the part of the professional sailors of the crew and the lack of oars required less skill on the part of the so-called 'ordinary' seaman.

It is during this period of large-scale naval expansion that we see the formalisation of the rank structure into three distinct organisations; Officers, Masters and Ratings. In civilian society, formal schooling was available only for a privileged few and for the rest the system of Apprentice, Journeyman and Master flourished. Even though sailors had no formal guild to oversee the training of future sailors, the three rankings of the navy took to this system like (if you'll forgive the affectation) a duck to water. Ordinary Seamen, either impressed or volunteer, would train to become Able Seamen and those Able Seamen would continue to train in order to be able to give orders like Officers, thus becoming 'Petty' Officers. Apprentice Shipwrights would train to become Masters, as would Sailmakers, Bo'suns and the other 'technical' trades aboard a warship. Last, but certainly not least, the Officers would train new Officers in the finer points of command and navigation. Captains of ships could aspire to the Command of Fleets and possibly the Admiralty itself (provided their social standing was high enough). The technology of the navy and society at large remained unchanged for many years and therefore little changed through the years in either the structure of society or that of naval ranks. The only major change in this period was when the technical expertise of the navy became formalised in the establishment of the Warrant Officer ranks. The next big change would come with the dawn of the age of steam.

Evolution

With the new technology of the Industrial Revolution came world wide changes. Although slow to start, sweeping changes eventually made their way through every level of society. The old tradesman apprentice/journeyman/master progression all but disappeared and was replaced by compulsory schooling as the so-called 'middle class' expanded to include everyone but the very extremes of the social scale. The naval rank structure reacted by eliminating the Warranted ranks. Those with wardroom equivalent ranks were absorbed into the Officer ranks and those without this equivalency were positioned as the cream of the Non-Commissioned Members (NCM); Chief Petty Officers.

With the expansive middle class as the major source of both Officers and Ratings there needed to be a different set of criteria for determining where to recruit which. The foremost of these criteria turned out to be education. Those with advanced schooling would be train to be Officers and those without would train as Ratings. This educational bias coupled with the tradition of entitlement fostered an elitist mentality in the Officer ranks that on the whole was justly deserved. For the most part, Officers were better educated, more amenable to further instruction and thus able to grasp the methods and consequences of command far better than their minimally educated NCM counterparts.

Current Status

The 20th century changed everything. In the last century the rate of technological innovation increased geometrically. Warships went from huge iron-clad monstrosities pushed around by clumsy steam plants to sleek, fast vessels propelled by the exotic technologies of gas turbines and fuel cells. The introduction of powered flight gave the Navy both new weapons to fight with as well as new weapons to defend against. Missiles, radar and other technologies made it necessary to educate the NCMs of our navies to levels as high as those required of the Officer ranks.

In the latter half of the century the 'education gap' between Officers and NCMs continued to narrow until it became difficult to notice a difference. The background education required for a Commissioned Bridge Watchkeeping Officer would sometimes be less than that required for a NCM Radar Technician. The traditional assumption that a higher educated individual was somehow innately more fit to command than one of less formal education led the navy into recruiting larger numbers of Officer Candidates and weeding out, at great expense, those unfit to command rather than targeting their efforts on a smaller and possibly more capable segment of the available pool. This 'old school' paradigm has resulted in a navy somewhat healthy in the Officer ranks and woefully deficient in the technical NCM ranks. Recruiting centres are more likely to aim a prospective sailor with a university degree into the Officer ranks than into an NCM technical trade. The increasing role of technology in the modern navy has also made the navy a more and more expensive institution for individual nations to maintain. There is little money available for wasting on the 'old ways' if newer and less expensive paradigms can be found.

The Crossroads

So here we stand at a crossroads. In one direction we have the option of going along as we always have, with the rank structure valiantly attempting to mirror the ever-changing structure of society at large. As we already know, this choice is expensive and will become harder and harder to accomplish as the rate of change accelerates and society itself grows more complex and fractures into many different subsets. Our only other option is to divorce the naval rank structure from the influence of civilian

society and compartmentalise it. This would allow for sections of the structure to be modified individually as needed, at less expense, without affecting the overall rank structure of the navy itself.

The following proposal is an attempt to address what I see as two of the main problems facing Commonwealth navies in the near future; the accelerating rate of technological change and the higher cost of training qualified Officers and NCMs. Training wasted easily equates to money wasted. The navy footing the bill for degrees in 'Military Studies' and other non-career coursing is increasingly difficult to justify in this era of fiscal restraint. The four year Bachelor of Arts Degree does not help a Bridge Watchkeeper who is studying for his ticket while performing the myriad of other duties he or she is tasked with. Furthermore, training our technicians to a level that allows them to effect emergency repairs to our combat and propulsion systems is wasted if we do not recognise their competencies.

The Plan

My proposal is to break the rank structure into three distinct career flows; a 'Command' flow, a 'Technical' flow and a 'Non-technical' flow. To simplify understanding I have chosen to adopt the naming convention of earlier times and call these three structures: Commissioned Officers, Warranted Officers and NCMs. Additionally there would be a large pool of non-assigned individuals in basic or skill sets training and on-board ships as Able Seamen.

An individual seeking to join the navy would initially enter the naval service through the non-assigned pool or by virtue of previous training/education directly into the Warranted or NCM ranks. After serving for some time in this capacity, the individual would be allowed to apply for their choice of career flow. Aptitude testing and other criteria would determine where this individual will ultimately be placed. The NCM ranks would be generated both from Able Seamen choosing this as their career and some direct entries with specialised training which is deemed attractive by the navy. The direct entry option would allow the navy to enrol persons that may have previously received certain required training not at the navy's expense. The NCMs would assume the roles of many of the 'working' trades of the navy much as they do now. The Warranted Officer ranks would be generated in much the same way. These would consist of the technical trades such as Electronics and Marine Systems Engineers, Meteorologists and some Logistics Personnel among others. These personnel would either be trained by the navy from the Able Seamen or direct entries with the appropriate civilian equivalencies. Warranted Officers would assume many of the positions previously held by Commissioned Officers; Ship's Technicians, Engineering Officers, Logistics Officers, Fleet Technical Officers and Ship's Configuration and Design Officers as well as those sections of Headquarters with a technical bent. The Command role would be simplified to just that … Command. The Commissioned Officers would assume the Command role and be generated internally from within the other rank structures. They would include Bridge Watchkeepers, Ship and Shore Establishment commanding

officerss and much of the Headquarters staff. Rather than assume that an individual is fit for Command by virtue of education or social standing, the ranks of the Commissioned Officers would be filled by persons already in the Navy by 'hand-picking' from within the Warranted Officers, NCM Ranks and the Able Seamen. The criteria and methods for this selection could include, but not necessarily be limited to: selection boards, oral and written testing and performance reviews. A simplified flowchart of this proposed change could look like is shown below.

Historically, Bridge Watchkeeping Officers trained from the ranks of those already in the navy, have a successful Completion of Training Rate of almost double those from direct intake methods. By eliminating those direct intake methods and taking all the Commissioned Officers from within the navy one would hope to see less training being wasted on Officers not able to complete the training. By concentrating the technical competencies into a separate Warranted Officer career flow, one would on one hand, legitimise the technical competencies of the technicians, and on the other hand, concentrate the special training needs of these members into a distinct career path that can be adjusted as the navy gains new equipment, new technologies and new training methods without the need for expensive and sweeping, navy-wide changes.

Figure 1: Proposed flowchart for the progression into a Command role (EG Howe)

Conclusion

In today's modern navy, there is a real need to adopt a new paradigm in naval rank structure that can easily adapt to the changes that are coming and at the same time reduce the costs inherent in the current structure. By decoupling the rank structure from its current situation of attempting to mirror civilian society's changes, we gain the freedom to explore other paradigms which may be more suited to naval needs. The proposal I have suggested is by no means the only possible paradigm; however it does address the issues that could become more and more important as the role of technology becomes greater. The implementation of this proposal would hold more than its fair share problems, but in the long run would greatly benefit the navy. In the end, we need Officers to Command and Technicians that can fix our equipment and even perform jury-rigged repairs akin to constructing 'a mnemonic memory circuit using stone knives and bear skins' and we need to be able to afford both.[2]

Notes

[1]   NAM Rodger, *The Safeguard of the Sea: A Naval History of Britain, 660-1649,* WW Norton & Company, New York, 1998, p. 23.

[2]   'City on the Edge of Forever', *Star Trek*, 1967, television program, CBS Studios Inc., season 1, episode 28, originally aired 6 April.

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