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***Beyond the Principal Warfare Office
– a respectful retort***

***Positioning the RAN for
Future Maritime Warfare***

The Republic of Singapore Navy

***Engaging Former JI Detainees in
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A cause for concern***

CN SPEECH – Australian Navy Foundation Day



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The background of the entire page is an underwater photograph. Sunlight rays stream down from the surface, creating a dramatic, ethereal effect. The water is a deep blue, and the light rays are bright white and yellow.

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ERRATUM

VERNON PARKER ORATION, AUSTRALIAN NAVAL INSTITUTE – 4 AUGUST 2011

**Apologies to author, RADM James Goldrick, RAN
(Errata page 6, Headmark 143)**

However, although substantial efforts were made to create an indigenous naval shipbuilding and repair industry, the way in which the new Service was grown also meant that many of the inherent risks were not fully understood by the government, by the electorate or by industry. In particular, Australia had little or no exposure to just how difficult it is to identify the right technologies and get them into service. The British did the job and carried the risks and all Australia had to do was acquire and adapt in very limited ways to meet our needs.

There was also the question of resources. A sustained in-country shipbuilding effort was just possible, but only if money was consistently committed. Unfortunately, although matters got off to a reasonable, albeit expensive start in 1911, post-war economies would soon slow and then halt new warship construction, initiating a series of stops and starts that punctuated the remainder of the century. It would always be a dilemma for governments to make the choice between expensive and protracted local construction, with the significant set-up costs involved but with real benefits for national development or purchasing off others' building lines and enjoying the economies of scale and reduced risks.

However, notwithstanding the high cost of Australian workers (who did

generally produce very high quality work), many governments funded naval shipbuilding at levels so low that they caused building schedules to become unduly protracted and their products even more expensive than they should have been. This was true for the cruiser *HMAS Adelaide*, known as *HMAS 'Long Delayed'* in the early 1920s and true for the destroyer and frigate programs in the 1950s. Here we can see a direct relationship between the size of the fleet unit that the nation was willing to support and the ability for that unit to be generated efficiently and at reasonable cost within Australia.

There were other, more subtle problems. The new Service was sometimes viewed by outsiders as uncritically reflecting British views when in fact its people were demonstrating a naval outlook, particularly an outlook that appreciated that national security was more than the simple defence of national territory. This should not have been surprising, particularly as some in the RAN failed to make the distinction between the United Kingdom and the navy themselves and were occasionally 'captured' by the ethos of Britain to a degree that made it difficult for them to operate comfortably in the Australian national environment¹, but it also tended to make it very hard for them to argue a naval case amongst national defence policy makers.

The focus on professional training...

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*HMAS Choules (L100),
Navy's newest addition
to the fleet, and HMAS
Labuan (L128) off
Cowley Beach for
Exercise Sea Lion 2012.
The ships are part
of a simulated Non-
Combatant Evacuation
Operation. Note the 2
degree incline of HMAS
Choules due to the
flooding of her well dock
which allows landing
craft to drive inside the
hull whilst the ship is
at sea (photo courtesy
of RAN, Credit: Darren
Hilder)*

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BEYOND THE PRINCIPAL WARFARE OFFICER – A RESPECTFUL RETORT

BY LIEUTENANT COMMANDER EDMONDSON

On reading Rear Admiral Goldrick's article *Beyond the Principal Warfare Officer*¹ in the June 2011 edition of *Headmark*, I felt compelled to take up his challenge and join in the debate. Although a recent lateral transfer from the Royal Navy, I am acutely aware of Admiral Goldrick's reputation as a Naval Officer with significant operational experience and additionally, as a world-renowned historian and masterly author. However, before committing myself to the discourse I take courage from Professor Geoffrey Till's adage that a Navy where ideas are freely distributed, discussed and challenged, irrespective of their origin, performs better.² This paper proffers a different perspective on the future of the Principal Warfare Officer (PWO), their education and training.

The key tenet of the article was that

the focus of training the future PWO should be on the set up and operation of the systems which they will utilise to fight their ships. This is a move away from the current practise of rote learning of pre-planned reactions to respond to a threat. In responding I argue that whilst system knowledge is a key enabler to the professional warfare officer, the implications of future maritime warfare will demand more than system knowledge and software expertise.

It is my intention to put forward a case for a more generalist, broadly educated PWO who relies upon warfare directors at the Senior Sailor level to oversee the automated response of the weapon systems whilst he or she looks outward from the Ship. Congruous to the strategic direction in which COMWAR intends to develop the surface forces I also expand the

debate to ask how the RAN intends to develop warfare officers capable of operating at Task Group/Force level.

The Defence White Paper of 2009³ brings a distinctly maritime emphasis to the question of Australia's security needs, and this strategy is clearly brought into focus by the procurement programme for the RAN as part of Force 2030; in particular the Air Warfare Destroyers (AWD) and Docked Landing Vessels (LHD). The white paper is the blueprint that is shaping the Navy for what Professor Till describes as the modernist approach, where weapons and sensor mixes emphasise defence against such capabilities that can only be held by other states.⁴

Three years on from the publication of the Defence White Paper the work to develop the Navy from a single frigate 'boarding' Navy to a force



How best to fight the ship? German Navy Sachsen-class air defence frigate FGS Hamburg (Photo by Michael Nitz)

centred on fighting a Task Group from the high seas into the littoral is being taken forward with gusto by the warfare community. This was clearly evident to the author at the Fleet Warfare Forum held at *HMAS Watson* in December 2011. At this event it was both energising and interesting to hear about the work being done at the various projects to achieve the ambitious but deadly serious goal of having a 'modern' navy within such a challenging time scale.

In the context of these major warship procurement projects for the RAN, Admiral Goldrick's article chimes with many. The leap in capabilities from the FFG to the AWD, and for the ASMD upgrade for the FFH will require a step change in systems knowledge and exploitation. PWO training must move with the times and it needs to evolve from the 1960's RN model; in this I am in full agreement. My concern, however, is what will be the product of a PWO whose training takes him or her deep into the world of 0s and 1s; to develop expertise in 'understanding the software and of its permutations of the data flows and the factors acting on their rate and consistency'.⁵ Operational knowledge of these new systems is axiomatic, however, the world in which these ships will be utilised will demand other vital skills sets from the PWO.

I have already touched upon the Defence White Paper's acknowledgement of the importance of the maritime environment to Australia's place in the world. It is undisputable that the global world in which we live is dependent upon trade and technology, and that the importance of the sea is a key component to the system. But what of the nature of warfare and conflict in the future?

In his prize-winning⁶ essay, Lieutenant Commander Pitcher builds

his thesis for future conflict around the persuasive 'hybrid war' argument of Frank Hoffman⁷ 'that blend the lethality of state conflict with the fanatical and protracted fervour of irregular warfare.'

Obviously it is inordinately difficult to predict the exact nature of warfare in the future, but the 'hybrid war' model seems as valid as many other schools of thought.

This not so distant future features the increasingly likely scenario of state on state conflict, superimposed onto a world influenced by international non-state actors. All this will be set within the globalised system where the competition for resources and the devastating effects of natural disasters will be played out in increasingly populated littoral areas. The sliding scale of future conflict and interaction will be conducted amongst people; reported on not only by the ubiquitous media but also before the citizen journalists armed with smart phones and instant connectivity to the internet.

This 'war amongst the people' as coined by Rupert Smith⁸ will not be limited to just land forces. Emphasis on soft power versus hard power will be the key to mission success. In a recent⁹ book, two British military officers, Andrew Mackay and Steve Tatham, analyse recent conflicts in which they have both been personally involved over the previous 30 years, with particular focus on Iraq and Afghanistan. They come to the conclusion that the common weakness to all western militaries has been the inability to identify the character and nature of the opponent and thereby the



ineffectiveness to exert the soft power of influence with any great effect.

What are the implications for the PWO in this world? Without doubt they will be operating in an increasingly complex and confusing environment, with more technology at their control than ever before. The PWO will need to be equipped to deal with the decisions he/she has to make beyond the confines of the Operations Room and its sensors. Without exception the sensors and system must be configured correctly for the necessary information to arrive at his console/command desk, but this is the job of the engineers embedded within the Operations room and its annexes.

It is the job of the PWO job to lead and manage his/her team in order to arrange the facts within the context of the operational environment and present the case to the Commanding Officer who will ultimately make the decision that will most probably have to be defended at some point to a higher authority. I question whether a PWO whose training has focused on systems and software exploitation will be best placed to achieve this role.

There is a precedent regarding focusing on the technology in the training for war fighting. Navies have always faced a problem of keeping abreast of advancing technologies, and a useful example is the revolution in naval affairs facing the industrialised nations at the end of the 19th century.

PWO command extends to more than one ship - the flotilla concepts demanded of new battlegroups will be high. Graphic of LHD alongside

BEYOND THE PRINCIPAL WARFARE OFFICER— A RESPECTFUL RETORT

The pre-eminent navy of the day was the Royal Navy, and in a 2002 Naval Review article¹⁰ Professor Dickenson argues the case for naval education drawing upon the experience of the RN during this period. He makes the point that despite the challenge of the technological advances and the undisputed evidence that warfare was changing rapidly 'the value of ships as fighting instruments tended to be studied from an exclusively technical viewpoint'. There was little time within the training spectrum 'to thinking about matters such as who the enemy might be or where and how a future battle might be fought'.

Dickenson goes on to describe that at the outbreak of World War I the Service had generally high standards of seamanship and navigation, yet there was little in the way of imagination and tactical awareness. The naval community awaited with a misplaced confidence a second Trafalgar and 'wondered in what manner the new Nelson might appear'. What followed at the battle of Jutland has been well studied and is not for further analysis here, but what I wish to emphasize from this broad lesson is that this is not a new position we find ourselves in, and the consequences for getting it wrong are not comforting. If it is agreed that PWO training must move beyond the 1960's RN paradigm, what then are the alternatives to Rear Admiral Goldbrick's proposed deep system and software knowledge model?

RAN warfare senior sailors and weapon engineers respectively need to be utilised to control the automated defensive reactions and set up the sensors of the ship under the tactical direction of the PWO. The warfare senior sailor is utilised as a director (EW Director, ASW Director and the Missile Director) by the Royal Navy, and it is the experience of the author that this works extremely well. It allows

the PWO to take a step back, and with appropriate delegation of 'command by veto', he or she is able to defend the ship using control orders. The senior sailor, having spent considerably more time on

the operation of the Ship's command system, will be more proficient at this task than the PWO.

Weapon engineers are primarily selected for the branch based on their ability for technical reasoning. Their training is arduous and extremely detailed, enabling them to understand how a weapon system is set up, maintained and fixed when defective. If correctly utilised, managed and led, the WE department should work in synergy with the operations team.

The PWO needs to have an understanding of the equipment available to him or her, however, the days of having a combat system such as the main armament to fine tune are over. Today's PWO is fighting a battle for information; literacy and knowledge of the vocabulary associated with the technology is required, but not the ability to re-write computer programmes.

The systems knowledge of the PWO in the RAN (and RN for that matter) is not adequate. With the arrival of the AEGIS platforms and hopefully the use of the USN training programme associated with this equipment the system knowledge will improve. PWOs heading to the AWD will probably attend the nine week Combat System Officer (CSO) course in the USA until a similar programme



is running within TA-MW. In researching this paper the author spoke with a number USN SWO colleagues who had attended this course. The overriding message was that although an excellent course, aimed at bringing prospective Department Heads up to speed on the system in order to utilise it tactically, it by no means made them subject matter experts – that takes years of education and on the job training and is what the technical senior sailors do.

So with the senior warfare sailor operating as the director of the system and the WE department providing optimum set up and operation of the equipment, how do we get a PWO who is capable of providing the level of tactical expertise to fight the ship on behalf of the Captain?

First principles of warfare and basic theory need to be ingrained with the PWO early and this can be done remotely via the DSN, something that is currently being progressed by a working group at the PWO Faculty at HMAS Watson. This is a simple philosophy, but similar to an innovative idea being pioneered in the US by a non-for profit organisation called the Khan Academy.¹¹ A recent newspaper article¹² reports of exceptional results being achieved by students being able to study, take tests and have their

Seamless integration of all sorts of platforms are demanded from PWOs of the future. Royal Norwegian Navy Oksoy-class minehunter, HNoMS Maloy (Photo by Michael Nitz)

progress monitored and mentored online all before they reach the classroom.

Once they reach the classroom the concepts learnt on line are put into practice utilising the teachers in person. This translates neatly in the PWO students arriving having studied the basics before they arrive on course; classroom and simulator time can then be best utilised with the instructors in explaining/demonstrating/practising what they have learnt on APWO.

This remote learning will free up instructional time which is where the PWO students will begin to build the skill sets required to deal with the future of hybrid warfare. Knowledge exploitation, influence activities, psychology, behavioural studies, regional studies into patterns of life, and cyber warfare, need to be studied alongside the more conventional issues such as tactics, threats, the physical environment, command and weapon systems. It could be argued that this would become more of a staff course than warfare course, but it is recommended that the PWO of the future needs an introduction into these subjects early and the PWO course is the optimum place to start.

A divergence from the focus on systems exploitation and equipment knowledge is going to equip the PWOs in the AWDs, LHDs, FFHs and other future surface combatants to fight successfully and intelligently in the complex future maritime warfare environment. It will also be the beginning of developing a broad and thorough professional warfare knowledge required at the next level by officers who will be required to man the battle staff of the Australian Amphibious Task Group. These officers working at border between tactical and operational level will need to know what influence the forces under their control will wield.

This education into all the effects of maritime power taught on PWO course and then put into practise during their tours at sea as PWOs will equip them to move into the next level of their warfare careers and provide the continuum to man and lead the 'modern' navy.

In concluding, this paper's intention was to counter Rear Admiral Goldrick's proposition that the training of PWO needs to shift away from the 1960's era of pre-planned responses moving towards a training focused on optimising the operational effectiveness of the weapon, command and information management systems. This paper has argued for a swing towards educating the PWO on a much broader level, taking into account the likely future nature of warfare consisting of a hybrid of state-on-state conflict and trans-national violence within an increasingly busy area of operations.

It is assessed that this future will involve much more interaction with the peoples on the sea and in the littoral, and thus non-kinetic measures and soft power will have an equally important place to the decision makers. Historical precedence has been drawn with comparison to the state of the RN at the end of the 19th Century with regard to training and education in technology and the subsequent consequences seen at the battle of Jutland. The suggested format to achieve the more broadly educated PWO is the innovative use of information technology to reduce instructional time on the basic principals of warfare and tactics, and introducing subjects more recognizable to staff course into the PWO curriculum. This paper has also suggested that the RN concept of utilizing warfare senior sailors as warfare directors is considered to allow the PWO to take a step back and focus outside of the weapon systems

envelope. It is hoped that this article will play a small part in furthering debate around the optimisation of future warfare officer training. ✎



Lieutenant Commander James Edmondson, RAN, is serving as a PWO in HMAS Newcastle. He spent 14 years as a warfare officer in the Royal Navy before emigrating to Australia in September 2011.

(Endnotes)

- 1 Rear Admiral James Goldrick, Royal Australian Navy, 'Beyond the Principal Warfare Officer' (*Headmark*, Issue 140, p13 – 15)
- 2 Professor Geoffrey Till, *Seapower – A guide for the Twenty-First Century*. (Routledge, 2009), p 139
- 3 Defence White Paper 2009, 'Defending Australia in the Asia Pacific Century: Force 2030.'
- 4 Till, 'Seapower', p 15
- 5 Goldrick, 'Beyond the PWO'
- 6 Lieutenant Command Paul Pitcher RN, 'The Maritime Implications of Future Warfare'(JSCSC Shrivenham, 2009)
- 7 Hoffman, 'Conflict in the 21st Century' (as cited by Paul Pitcher)
- 8 Rupert Smith, *The Utility of Force – The Art of War in the Modern World*. (Penguin books 2005)
- 9 Mackay and Tatham, 'Behavioural Conflict' (*Military Studies Press*, 2011)
- 10 Professor H.W.Dickinson, 'Athens in Sparta: Making the case for Naval Education' (*The Naval Review*, Vol 90, No 3, July 2002)
- 11 www.khanacademy.org
- 12 Amanda Bower, 'Substitute teacher' (*The Australian Business Magazine*, Vol 4/No 11, December 2011)

Positioning the RAN for Future Maritime Warfare

BY CAPTAIN PJ LEAVY, RAN

Rear Admiral James Goldrick recently published a piece in *Headmark* on the future of the Principle Warfare Officer (PWO) in the RAN.¹ This article seeks to contribute to that debate by exploring the human dimension of the future networked Australian Defence Force (ADF) articulated in Force 2030.² It recommends an expanded role for technical personnel in the Operations Room, greater systems knowledge for warfare personnel and more specialised warfare sailors, allowing PWOs to move away from the mechanics of conducting weapon engagements and focus on decision making.

The Department of Defence has a range of documents aimed at shaping the ADF's future capabilities to ensure success in combat operations.³ They generally, although not exclusively,

focus on the systems, hardware and networks that will see the ADF evolve into a seamless force under a unified, joint command. However, the key to any Network Centric Warfare (NCW) initiative is the human factor: people fight, not computers. Navy must develop the right people, with the right skills, to successfully operate in the future, networked environment. Personnel will be required with the technical skills to keep the networks and systems optimised together with the educated, agile and informed decision makers able to interpret what they see and to react appropriately.

To prepare the future workforce Navy must understand the environment within which they will operate. Maritime warfare is becoming more complex with an ever-increasing array of technologically

advanced weapons and sensors entering the international market. Most countries can now buy highly capable weapons. They do not have to spend years developing their own or be a "technologically advanced" nation to own them. Indeed technological advantage is becoming less relevant at the individual ship system and platform level and is increasingly a function of how well the platforms and systems integrate and share information across the entire battlespace: the core concept of NCW.⁴ Additionally, the Information Technology (IT) that will drive the future of any networked force is not a field within which *any* military maintains an advantage. Commercial applications now drive IT innovation. Militaries have become the users of well-understood and widespread commercial technologies, rather than

New challenges for Australia. Spain's Alvaro de Bazan Air Warfare destroyer shown on her visit to Australia-photo by Chris Sattler



developers of unique technology.

The key to future warfare will be in deciding if and when to engage a contact and not the actual mechanics of undertaking the engagement, which will be increasingly automated. The speed and strategic impact of the modern media and internet mean that the decision not to engage can be just as important as the decision to engage. Using a kinetic weapon will be only one option available to meet a specific aim. The Navy must have warfare teams able to respond appropriately to a wide range of situations in the face of incomplete, inconsistent or even wrong information.

The future ADF will require all nodes (in Navy's case the ships, submarines, aircraft and headquarters), to be "connected" electronically so that a wide range of information, data and orders can be moved around the various sensor, weapons and command and control (C2) networks. While this concept is clearly aspirational, and there are some significant legal and practical issues to overcome before it matures, it is the direction in which the ADF, along with most comparable militaries around the world, are proceeding.

Advances in IT and computing power have already fundamentally changed the way militaries operate. Computer based systems are now used throughout most navies, leading to a change in how the "combat system" in a ship is defined. Historically a ship's combat system (for example, NCDS⁵) was a stand alone computer system that managed the ship's sensors and weapons to present the Command a tactical picture. Information from the combat system was passed to separate weapon control systems to conduct engagements with organic weapons. Communications were via stand-alone systems, originally limited to formal message traffic and voice

on HF/UHF radios, but now include web-based applications. Electrical Technical (ET) sailors *maintained* the "combat system", weapons, sensors and communications equipment, while CSO and Communications sailors *operated* them.

Email, persistent chat, secure web browsing, Voice Over Internet Protocol (VOIP), video conferencing and high data-rate tactical (and strategic) links are all now used for planning and C2 functions at sea. While many of these functions are currently hosted on stand-alone systems, the future will see such capabilities integrated into the combat system as core components. The interfaces *between* platforms (sea, land and air) will be as seamless, permanent and at least as important, as those *within* the platform. These interfaces will all rely on high speed digital data communications between software intensive systems utilising the same commercial technology that will ultimately power the envisaged sensor, weapon and C2 nets across the entire force.

Modern technology is also increasing the speed of engagements. The introduction of the AEGIS combat system in the Air Warfare Destroyers (AWD) will bring an order of magnitude increase in Air Warfare capability of the RAN; a timely increase given the range of threats now faced. The speed and lethality of modern missiles will mean that computers will increasingly be central to decision making and execution. Since the mid 1990s the ANZAC Class has had the ability to automatically detect an air contact, assess it as a threat and engage with missiles until the target is destroyed or is no longer a threat – all without any human input other than the original system setup. While it will be a brave Captain who allows a computer to do everything *including* firing a missile, the norm in most self

defence situations will see everything automated *except* firing. That is, the system will make threat assessments and provide recommendations but will require an operator to accept the recommendation before a weapon is released.

Given that computers and the seamless movement of electronic data are already fundamental to maritime warfare - and becoming increasingly so - future systems will require dedicated systems managers to monitor, configure and optimize the various systems and networks. This will be a new and different role to the 'users' of the system as it is currently understood (ie CSO, FC operators). Indeed, many of the functions currently focused on by "operators" are becoming automated. Future systems will not need operators to manually work their way through an engagement sequence to fire a missile – once the decision is taken to shoot, the mechanics will be computer controlled.

While firing weapons will be automated, people will still be required to monitor the automated systems that control the process. Consequently WEE personnel will be required to take an ongoing and active role in the Operations Room as the data communications specialists to monitor and optimise computer performance (akin to the tech support people at your Internet Service Provider – you don't see them and they aren't using the applications, but their 'back room' work is vital to an efficient service.)

In the 1990s the former branches of Radar Plot (RP), Electronic Warfare (EW) and Underwater Control (UC) were amalgamated to form the Combat System Operator (CSO) category. As a result, the sailors operating RAN combat systems are not as deeply specialized as they once were, particularly in EW and Sonar where true proficiency only comes

Positioning the RAN for Future Maritime Warfare

with practical experience. While warfare has certainly benefited from technological advances, the conduct of maritime operations is more art than a hard science –although it is an art based on a sound technical understanding of the systems in use. One must always be careful to guard against the assumption that technology will provide the “answers” and inadvertently make the operator subordinate to the system. A knowledgeable operator, who understands their system (radar, sonar, EW etc) and can correctly interpret the information presented, is vital to the overall capability. This only comes with knowledge combined with experience. Navy has already identified this issue and there are a number of initiatives underway to specialise CSO sailors in the sonar and EW areas. It will, however, take time to re-gain those deep specialist skills throughout the organisation.

Coupled with the Navy’s reduction in deep warfare expertise, over the last decade there have been less training opportunities in core warfare skills (ie reduced training with submarines, high speed jets, sophisticated EW training aircraft) plus a focus on boarding and constabulary operations for operational deployments. This is understandable given the contemporary threats the Navy has been tasked to address, but means that there are now more junior and less experienced personnel in key positions around the Operations Room when it comes to traditional warfare skills.⁶

As a result of the above factors, over the last decade PWOs have moved away from their core role as high level decision-makers, becoming more hands-on operators and even at times helping to compile the tactical picture. Additionally the system’s knowledge of AIO personnel has reduced as dedicated Systems

Courses (such as those previously conducted at CDSC for the DDG and FFGs) have either been removed or restructured to focus on operating the system rather than imparting a deep technical understanding of how the system works. This has, at least in part, contributed to an often unhealthy acceptance of believing “the system” without an understanding of how the system got to that point.

The current PWO Course aims to develop the skills to manage an Operations Room (and external assets), maintain situational awareness and develop a range of response options for the PWO to draw upon. The course trains officers by teaching the relevant threats and the theory of each warfare discipline, and providing practical training in managing the reaction to threats as they emerge. It must, by necessity, be quite scripted with students essentially running through a checklist of actions appropriate to the situation with which they are faced. While this training is essential for building the individual foundation skills, successful completion of the course is only one part of generating a capable PWO.

The real skill for a PWO is to put the right mix of responses together when faced with a real situation. The ability to apply the right set of tools to each unique situation can only come from practical experience and positive mentoring plus a thorough understanding of how the combat system works. Gone are the days when a newly graduated PWO would join a ship having undertaken a dedicated Combat System Course and join three other PWOs, two of whom were second or third job LCDRs. Newly graduated PWOs now often join their ships without a deep understanding of their combat system and without appropriate mentors, making it difficult to learn the lessons of experience

so necessary to move off their “P Plates”. As a result warfare serials are often quite scripted with the PWO managing a sequence of events, rather than standing back and applying the tactical and strategic appreciations to an unfolding situation. In short, the RAN has been through a phase – from which it is now emerging – where it was ‘training to train’ rather than ‘training to fight’.

This is certainly no criticism of the individuals involved. Indeed, it has been impressive to see warfare capabilities rise over a relatively short period when dedicated training time and the right opportunities and assets are available. This indicates that the individual CSO and PWO core skills are sound but personnel require more exposure to realistic training opportunities to build a sound experience base. This was not such an issue when weapons were only capable of unit self defence due to their range relative to the threat. In Air Warfare exercises for example, aircraft have usually been tasked to pass almost on top of ships in order to practice missile engagements and to get the maximum training benefit for all weapon systems. This means warfare team are acting in self-defence in all but high level serials which reduces any requirement for strategic level appreciation or tactical thought beyond anticipating when a strike may occur. Even this aspect is removed in a serialised program.

While procedural training is important for building the basic operator skills and practicing pre-planned responses, it must be recognised that this is only one aspect of modern air warfare. Self defence measures are reactionary in nature and therefore following a series of pre-planned responses works. However, the future of maritime warfare will be very different. New long range weapons and systems (SM2 is already here,

AEGIS is coming), coupled with the ADF's planned networked capabilities (incorporating Link 16, AEWG, JSF etc), will provide much greater scope for discretionary engagements where making the right decision becomes the key factor.

PWO training (not just the PWO Course) must evolve beyond reactionary, tactical warfare into strategic decision making and deliberate engagements. The same technology that allows the ADF to be networked also allows images and news to be flashed around the world as the events unfold so, as mentioned earlier, the decision *not to* engage may be just as important as the decision *to* engage. PWOs also need to appreciate and incorporate ROE (both ADF and allied - much more difficult when it is not a self defence issue), National Intent and the second and third order effects of an action. This is the direction in which RAN PWOs must head: to be primarily decision makers. Their core task will be to determine *who* to engage and *when* - not to execute the mechanics of firing a weapon. Indeed, modern weapons mean that conducting Anti Ship Missile Defence (ASMD) will require reactions so fast that responses will need to be computer controlled - providing the computers are optimised, which reinforces the importance of having the right people monitoring system performance and the PWO understanding how the system will react and why.

To ensure that the right information is available to decision makers, the manning and operation of the Action Information Organisation (AIO) must also be reviewed. The Navy of the future will require sailors who both 'operate' (CSOs – manage the *picture*) and 'monitor' (ETs – manage the *system*) the combat system. Both the CSO and ET personnel will need to report directly to the PWO as integral,

and equally important, aspects of maintaining a Common Operating Picture. No longer can the system be 'used' by CSOs until a problem develops, at which time an ET sailor 'fixes' the problem and hands it back to the operators. ET sailors must be constantly monitoring and optimising the flow of electronic information and system performance, regardless of whether the system is a radar, a missile system, a threat evaluator or a communications path back to higher headquarters. All are equally as important and all will be based on the same commercial technology.

This is not revolutionary: the RAN has been on this path for some time. In the 1980s Fire Control sailors from the Seaman branch were replaced by WEE sailors who assumed responsibility for controlling major weapons. This concept must continue to evolve as computer based systems become integrated and ubiquitous. Perhaps two "Operations Room Supervisors" are needed: an "ORS Operations" (based on the current POCSS model) focused on the content on the system and an "ORS Systems" (a WEE sailor) focused on the performance of the system. The ORS Systems would manage a team who are constantly monitoring and maintaining system performance to ensure the means to pass information is available and optimised. This information may be data from a gyro to a missile or from a threat evaluator to a console for display, Link information passing from one ship to another or a chat circuit back to Australia –all will require the same technical skills to monitor and maintain.

In conclusion, the future ADF will be networked under a joint, unified command. High speed data communications will be the core, enabling technology empowering the Navy's future combat systems,

weapons, sensors and associated networks that allow data and information to seamlessly move around the Force. There will be a merging of the current 'combat systems' and 'communications systems' as digital data transfer, both within and between units, becomes the norm.

This technology will require dedicated specialists to maintain, monitor and optimise system performance, in addition to the CSOs who actually use the information. The last two decades have seen an increased reliance on technology to provide contact detections, assessments and recommendations, particularly in the EW and sonar areas. This has resulted in less operator 'value adding' and an increase in simply reporting 'what the system says'. Coupled with changes to training and branch structures over the same period, the RAN's general experience levels in core warfare disciplines has reduced in recent years and PWOs have become more 'hands-on operators' at the expense of being 'stand-back decision makers'. The introduction of long range weapons and sensors, such as SM2 and dipping sonar equipped helicopters, will provide much greater scope for discretionary engagements in addition to reactionary self defence measures and this will require organisational, structural and training changes to ensure that the future PWOs are equipped to execute the full range of contemporary maritime warfare tasks.

The following recommendations are designed as a basis for discussion. They are initial thoughts on how to move our warfare training, manning, skills and mindset in the right direction and are offered as a starting point for discussion:

The current CIS and ET(C) categories amalgamate, under the WEEO, and become responsible for all data communications within

Positioning the RAN for Future Maritime Warfare

and external to the ship. Over time this role will become the core WEE responsibility as data communications technology becomes ubiquitous.

The WEE community position to assume responsibility for the set-up *and constant monitoring* of system performance rather than as “on-call” maintainers to fix problems. This will be vital in the AWD, but is required even now in managing stand alone systems. (This is essentially a mindset shift for the current ‘operators’ and ‘maintainers’ who, rather than work in ‘series’ as previously, will need to work in ‘parallel’ in the future)

The concept of an “ORS Systems” (ideally a WEE sailor) be trialled with a view to developing an understanding of the specific requirements (and more importantly, the future skillsets) of the job. This concept was started in HMAS *Sydney* during 2011 when a dedicated Leading Seaman (CSO) position was used to monitor the Combat System setup and performance.

The current warfare community allow the WEE Department to have a more active role in the Operations Room. The current CSOs will retain responsibility for the tactical information that goes into the system, but managing the technology will be a full time job in itself and the WEE Department is best placed to undertake this role.

A review of the current PWO and CSO training schedules be undertaken to ensure that the right ‘education’ (in addition to training) is provided to enable a full *understanding what is going on behind the HMI* in order to optimise the system, interpret the information presented and value-add. The re-introduction of detailed Systems Courses is a major step in the right direction.

The training continuum of the PWO and CSOs be enhanced with a

dedicated training effort introduced to rebuild and maximise the experience base of these specialised groups.

PWO course be structured to provide a stronger foundation upon which our PWOs can develop their skills in maintaining situational awareness, fighting the ‘fog of war’, understanding ROE, National Intent, strategic guidance, strategic impacts of decisions (media coverage etc), in addition to the basic, ship borne warfare skills that they have always received. The new PWO training continuum commencing in 2013 will be a major step in the right direction

The RAN develop, and PWO course teach, tactics and procedures to best employ the longer range weapons being introduced (most noticeably SM2, but also AEWC, F-18, JSF etc) that will allow for action well beyond the firing unit. In time, this must expand to cope with weapons being ordered from one unit, controlled by a second and fired from a third as the NCW concept matures across the ADF.

Sea Training Group be enhanced and assume much of the responsibility for managing the at-sea training for the more advanced training activities, including the tasking of assets. This will ensure ships are not pre-warned of what is coming and is the only way of developing the PWO skill of appreciating an unfolding situation in the face of uncertainty.

None of this should be construed to imply that Navy’s people are not performing nor that the RAN has not met its mission. Indeed, the calibre of RAN officers and sailors today is the best it has ever been and the skills and missions the Navy has trained for have been what the government has called upon the organisation to deliver. However the emerging threats, technological advances and the warfighting concepts behind Force 2030 mean the RAN must now build

deep systems and technological knowledge plus the requisite experience base to make decisions in both the traditional warfare disciplines and the emerging technologies that will (indeed, already are) be fundamental to maritime warfare. ➤



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(Endnotes)

- 1 Goldrick, J., *Beyond the Principle Warfare Officer*, Headmark – Journal of the Australian Naval Institute, Issue 140, January 2011.
- 2 Defence White Paper 2009 – *Defending Australia in the Asia-Pacific Century: Force 2030*, Department of Defence, May 2009.
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- 4 While Australia can expect to retain a certain technological edge in some areas it won’t be as great as it has been, nor as enduring.
- 5 NCDS – Naval Combat Data System which was installed in the Perth Class DDGs and Adelaide Class FFGs prior to their upgrade. While NCDS had Link 11 and was therefore able to share information between ships, it was essentially a stand-alone system when compared to the future networked environment envisaged for the ADE.
- 6 Rebuilding these skills is the focus of Commodore Warfare’s (COMWAR) Project Pelorus which, coupled with a move back towards more specialisation in our warfare sailors, should see Navy’s high end warfare skills mature.



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THE REPUBLIC OF SINGAPORE NAVY

BY SERGEI DESILVA-RANASINGHE

When Singapore attained independence from Malaysia in 1965, its navy had only three ships and a small force complement numbering several hundred personnel and capable of only rudimentary coastal and inshore operations. However, today much has changed and the modern Republic of Singapore Navy (RSN) has since expanded, diversified and transformed into a world-class naval outfit at the cutting edge of technological development.

DEFENCE POLICY EVOLUTION

As a small island-country neighbouring both Malaysia and Indonesia, and with a population of just over 4.5 million people, Singapore's strategic location astride the world's busiest shipping lanes has provided unique and complex security challenges.

Economically, Singapore's very prosperity is dependent on the continued flow of maritime trade through its world-class port facilities. Having no natural resources of its own, Singapore has no choice but to rely

entirely on importing from overseas its food, water and energy to survive. In fact, for decades Singapore has obtained much of its fresh water from Malaysia, and, since 2001 has also imported its supply of natural gas from Indonesia through a 656km pipeline that connects both countries.

However, Singapore's dependence on both Malaysia and Indonesia has not come without problems, as seen on occasions during the 1990s when bilateral tensions led Malaysia to abruptly refuse the Republic of Singapore Air Force (RSAF) and RSN access to Malaysia's air and sea space. Indeed, such tensions have continuously served as a pressing reminder of Singapore's strategic deficiencies.

Given the nature of Singapore's strategic challenges it has actively sought to maintain its security by cultivating relations as a reliable partner of the Western Alliance, as seen by its enthusiasm to be apart of the Five Power Defence Arrangement, involving Australia, Malaysia, New Zealand, Singapore and the United Kingdom. This has since provided

a forum for defence and security cooperation, particularly in training. Furthermore, Singapore's political and military leadership has continually strived to keep abreast with the latest developments in military hardware and capabilities and emphasized the necessity for a high state of defence readiness.

By developing a modern well equipped and trained military, the Singapore Armed Forces (SAF) have developed not only the ability to act as a credible deterrent against a would-be aggressor, but also the capabilities required to project force hundreds of kilometers outside its sovereign territory by air, sea and land. In this context the role and capabilities of the RSN has been particularly important in ensuring Singapore's capacity to secure control over its maritime domain.

FORMATION, DEVELOPMENT AND EXPANSION

The now formidable RSN of today can trace back its origins to the era of British colonialism when in 1934



A full moon rises above the U.S. Coast Guard cutter Boutwell at anchor at Changi Naval Base, Singapore

the Straits Settlements Royal Naval Volunteer Reserve was raised to act as a trained manpower reserve for the defence of Singapore in times of emergency.

Subsequently, its evolutionary linkages to the naval establishments of colonial and post-independence Malaysia include the Singapore Division of the Malayan Royal Naval Volunteer Reserve during World War II and thereafter to the Royal Malaysian Navy under the title "Singapore Volunteer Force." After Singapore ceded from Malaysia in 1965 its name again changed to the Singapore Naval Volunteer Force. At its inception the force consisted of 89 mobilized personnel and 278 reservists and only three ships: the *RSS Panglima*, *Singapura* and *RSS*. Latterly, there were several more name changes such as the Sea Defence Command, Maritime Command, and finally in 1975, to the Republic of Singapore Navy.

Starting with improvised facilities, the RSN made gradual progress in obtaining new basing facilities, raising units and procuring ships. For example, in 1974 Singapore's first naval base was opened in Pulau Brani. Similarly, the year 1975 proved to be significant one for the RSN with the formation of the Naval Diving Unit (NDU), the acquisition of six German-designed Sea Wolf-class missile gunboats and two Bluebird-class minesweepers.

First, the reconstitution of the Royal Navy's Far East Fleet Clearance Diving Team a demonstrated by the creation of the NDU, was the initial step in the evolution of what is today a highly specialized and elite unit. Initially, the NDU engaged in basic diving and operational tasks, which by the 1980s also encompassed underwater explosive ordnance disposal and harbor security.

Today the NDU contains three groups, namely the Clearance Diving



Group, Underwater Demolition Group and Combat Diving Group. Under its purview the NDU commands all combat diving operations, search and seizure operations at sea and explosive ordnance and mine disposal for the SAE.

Second, the expansion of the RSNs naval capabilities began with the procurement of six German-designed Sea Wolf-class missile gunboats commissioned as *RSS Sea Wolf*, *Sea Lion*, *Sea Dragon*, *Sea Tiger*, *Sea Hawk* and *Sea Scorpion*. Third, the RSN acquired two former-US Navy Redwing-class mine sweepers, both of which were re-commissioned as Bluebird-class and renamed *RSS Mercury* and *Jupiter*. After both ships were either scrapped or decommissioned in 1986 and 1993, it would not be until 1995 when the RSN replaced them with newer Swedish-built Landsort-class vessels. These were re-commissioned as Bedok-class mine countermeasure vessels and renamed *RSS Bedok*, *RSS Kallang*, *RSS Katong* and *RSS Punggol*.

Subsequently, in 1978 the RSN acquired a useful sealift capability with the requisition of five decommissioned US Navy County-class LSTs that remained in service until 2000-01. Upon been decommissioned they were supplanted by four locally designed and

built Endurance-class LSTs, namely the *Endurance*, *Resolution*, *Persistence* and *Endeavour*. The Endurance-class LSTs have a flight deck that can fit two medium-lift helicopters and the capacity to furnish four landing craft onboard simultaneously, which proved valuable for operations outside of Singapore in later years. Following the addition of LSTs the RSNs capabilities were given a further boost in 1990 and 1991 respectively when six German-built Victory-class missile corvettes were commissioned: *Victory*, *Valour*, *Vigilance*, *Valiant*, *Vigour* and *Vengeance*. Again in 1997 the RSN also added twelve locally-built Fearless-class patrol vessels to its fleet to augment its coastal and inshore operations. The patrol vessels commissioned include *Fearless*, *Brave*, *Courageous*, *Gallant*, *Daring*, *Dauntless*, *Resilience*, *Unity*, *Sovereignty*, *Justice*, *Freedom* and *Independence*.

Meanwhile, the steady expansion of the RSN fleet throughout the 1980s and 1990s there was a requirement for a more effective command structure and base facility. As such, the RSN created three new commands exemplified by Naval Logistics Command (NALCOM) in 1986, responsible for logistics support to RSN ships and bases installations; Coastal Command (COSCOM) in

The Republic of Singapore Navy frigates RSS Stalwart (72) and RSS Intrepid (69) and the tank landing ship RSS Endeavour (210) maneuver with USS Harpers Ferry (LSD 49) and USS Chafee (DDG 90), and USS Chung-Hoon (93) during CARAT 2009. (US Navy photo)

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1988, responsible for the security of the Singapore Strait maritime domain, and Training Command (TRACOM) in 1994, which oversaw the training at the RSN Officers' Cadet School, Naval Advanced Officers' School and the Command and Staff College.

Latterly, this also included the RSN's Institute of Maritime Warfare, Institute of Maritime Operations and Systems, Institute of Naval Technology and Operations and the Institute of Marine Systems. In addition, the growing size and capabilities of the RSN meant that a larger and modern basing facility was needed, especially in light of the closure of the Brani naval base due to space constraints and inadequate infrastructure. Hence, in 1994 the opening of the Tuas naval base in western Singapore became the new main fleet base for the RSN's missile corvettes, LSTs, mine countermeasure vessels and new patrol vessels.

In a major development for the RSN, taking place in 1997, the introduction of a diesel-powered submarine capability represented an unprecedented step on part of Singapore to develop offensive maritime capabilities. The four retrofitted former Sjöormen-class Swedish submarines, were accordingly based at Changi naval base and re-commissioned as *RSS Challenger*, *Conqueror*, *Centurion* and *Chieftain*. While such major capability enhancements benefitted the RSN, since the year 2000 Singapore's political and military leaders have continued to invest increasingly greater resources to strengthen and expand their RSN's naval capabilities with new and more powerful platforms.

NEW ERA, ENHANCED

CAPABILITIES

As such, the period from the year 2000 onwards represented a new era in the development of the RSN. The decommissioning of older-model ships such as the RSNs County-class LSTs and Sea Wolf-class missile gunboats in 2000-01 and 2008 respectively was followed by a major capacity-boost in other areas. These included the acquisition of two models of advanced Unmanned Surface Vehicles (USV) systems, the RSNs participation for the first time in naval operations far from its shores, opening of another brand new base facility, the commissioning of six brand new Formidable-class stealth frigates with a naval air wing capability, two refurbished and modern Archer-class submarines, a submarine rescue capability, and finally, the creation of two new joint-operational coordinating agencies.

Starting in 2002 the RSN engaged in joint-collaboration with the French and US Navies in developing the Spartan Scout USV, a 7m-long Rigid Hull Inflatable Boat (RHIB) that can be used for intelligence, surveillance and reconnaissance, mine countermeasure and anti-submarine operations.

"The USVs allow ships to deploy

such a vessel without getting the men into too close contact with a suspicious boat, which may have undesirable intentions," stated a senior-official at the Singapore Ministry of Defence.

Subsequently, in 2005 the platform made its operational debut with the RSN. Prior to the operational debut of the Spartan USV, in 2004-05 the RSN also used the 9m-long RHIB Israeli-built Protector USV for the first time in an operational setting, notably in maritime interdiction in the Persian Gulf as part of the force complement of Combined Task Force 158. Indeed, the capacity of the RSN to engage in maritime operations well outside Singapore waters was a direct result of its investment in the Endurance-class LSTs which in turn enabled the Protector USV operational-trials. At various stages throughout the mission from 2003 to 2006, the RSN deployed all five of its Endurance-class LSTs to safeguard Iraqi oil infrastructure, conduct regular patrols and board and inspect ships passing through the area. The LSTs were also used in basic seamanship and medical training exercises and joint-operations with the Iraqi Navy.

Furthermore, in 2004 the Changi naval base was made operational after construction first began in 1992.

Singapore Navy Formidable-class frigate, RSS Tenacious-photo by Michael Nitz



Situated on Singapore's eastern littoral the facility has 6.2 km berthing space and is sufficient to accommodate an aircraft carrier. Currently, the Changi base is home to the RSN fleet of LSTs, submarines and stealth frigates.

Indeed, the RSN's drive to develop a credible surface warfare capability was realised with the acquisition of six Formidable-class stealth frigates between 2007 and 2009, namely *RSS Formidable*, *Intrepid*, *Steadfast*, *Tenacious*, *Stalwart* and *Supreme*. Built in Singapore the ships can accommodate a crew of 71, including another 19 aviation personnel and reach speeds in excess of 25 knots.

In addition, the stealth frigates possess advanced weapon systems, which include: Harpoon Surface-to-Surface Missiles, 76mm OTO Melara SRGM, ASTER SAM, Whitehead A244S Torpedoes. The stealth frigates have the added capacity to accommodate medium-class helicopters. In 2005 the RSN purchased six Sikorsky S-70B naval helicopters equipped with anti-surface and anti-submarine combat systems, which was considered "a major leap forward in the capabilities of the SAF," according to Teo Chee Hean, Singapore's Deputy Prime Minister and Minister for Defence.

Not long after, in 2009 the RSN also deployed the *Endurance* and two RSAF Super Puma helicopters to the US-led Combined Task Force 151, which the RSN actually commanded for a period of three months in early 2010, to participate in anti-piracy patrols in the Gulf of Aden, Red Sea and Arabian Sea.

"On a daily basis we have to...ensure that the Internationally Recommended Transit Corridor is well covered," said Rear Admiral Miranda, the senior RSN commander assigned to CTF 151. "We have to closely watch the work-rest cycles, replenishment-at-sea needs, port visits and individual ships'

readiness to balance the deployment of ships and aircraft efficiently and effectively."

He added: "Every day is a tough as we have to be watchful 24/7 in a large and porous area...we are ensuring the safety of an area more than a thousand times the size of Singapore."

In addition to the frigates and in another significant development, two former Swedish-built Vastergotland-class submarines were bought and are intended to act as replacements to the older RSN Challenger-class submarines. Subsequently re-commissioned as Archer-class submarines, the refurbished platforms *RSS Archer* and *Swordsman* were delivered in June 2009 and October 2010 respectively. The submarines are a marked improvement over the older designs in engine performance, equipment, weapons systems and stealth capability.

Commenting on the acquisition Singapore's Minister for Education and Second Minister for Defence, Dr Ng Eng Hen, said: "The RSN's submarines are part of an integrated warfighting system which includes our stealth frigates, naval helicopters, missile corvettes and mine countermeasure vessels. Together with the Challenger-class submarines, *RSS Archer* and

Swordsman will enable the RSN to better fulfill its mission of protecting Singapore's sea lines of communication and territorial integrity," he said. "Like *RSS Archer*, *RSS Swordsman* brings with it technology that improves the anti-surface warfare capabilities of the RSN, improving the RSN's fleet and providing better options in the field," he explained.

To further complement its undersea capabilities the RSN also acquired a submarine-rescue capability in 2009 with a 9.6m long submersible submarine rescue vehicle, named Deep Search and Rescue Six (DSAR 6). To accommodate DSAR 6 the RSN also acquired a specialized ship *MV Swift Rescue* which is equipped with onboard modern medical facilities, monitoring wards and hyperbaric facilities. The acquisition ascends the RSN to an exclusive club of only 11 navies worldwide that have the capability to engage in submarine rescue operations.

Alongside the RSNs marked increase in naval assets and capabilities, the creation of two new joint-operation coordinating agencies has made the RSNs role increasingly effective in maritime interdiction operations around Singapore. Commencing in January 2009 the SAF-raised the Maritime Security Task Force based

*New technology
- Singapore RSS
Formidable-photo by
Chris Sattler*



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at Changi Naval Base which acts as a joint-command centre involving the RSN, the Police Coast Guard and Maritime and Port Authority of Singapore.

Again, in April 2009 this was followed by creation of the Information Fusion Centre, also located at Changi Naval Base. The agency is designed to collate and share intelligence on maritime security, terrorism, drug trafficking and human smuggling with local, regional and international agencies and navies. Cumulatively, both initiatives have made a significant contribution to the security and stability of the Singapore Straits and the wider region. Fittingly, the combination of these enhancements in role and in acquisition of new and

advanced naval capabilities by the RSN has sent a clear message to the region as aptly reflected in the website of the Singapore Ministry of Defence: "In wartime should deterrence and diplomacy fail, the RSN aims to secure victory over any aggressor [author's emphasis] at sea. The Navy's main wartime tasks include ensuring the integrity of Singapore's territorial waters, preventing interdiction of the vital SLOCs and destroying the aggressor's maritime forces at sea."

Clearly, from rudimentary beginnings in the 1960s the RSN has steadily evolved and modernized into a technologically proficient and world-class navy. Although the RSN is numerically small in size it has developed a strong force projection

capability far in excess of its numbers. The RSN has adapted well to the latest in technology as seen by the state of the art USVs, stealth frigates with a dedicated naval air wing, and a modern submarine force which can readily match the capabilities of larger regional navies. Such achievements in modernization is a testimony to the RSN's remarkable progress which will continue to serve as a fascinating example to navies around the world. 🚢

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HMAS Larrakia P84 conducts helicopter operations training with the Navy's new Agusta 109



ENGAGING FORMER JI DETAINEES IN COUNTERING EXTREMISM: CAN IT WORK?

BY KUMAR RAMAKRISHNA

SYNOPSIS

Singapore's counter-radicalisation programme has been effective in rehabilitating many Jemaah Islamiyah detainees as well as immunising the wider community against violent extremism. Can there be an enhanced role for specially selected former detainees to complement the overall counter-ideological efforts of Singapore's Muslim scholars?

COMMENTARY

Ten years ago Singapore came close to being struck by a major terrorist attack – a mere three months after the September 11 attacks in the United States by Al Qaeda. To many Singaporeans, the news that a cell of the Al Qaeda-affiliated Jemaah Islamiyah lurked within their own borders seemed too surreal to be true.

But it was: the local JI cell - with the direct support of Al Qaeda itself - had plotted to mount truck bomb attacks against Western diplomatic and commercial interests in Singapore. Had the plot succeeded, the physical, economic, social and psychological repercussions for Singapore would have been catastrophic.

SUCCESS OF RRG

Over the past decade, it has become clear that dealing with the threat of transnational terrorism crucially requires the capacity to deal with the real-time, physical threat posed by terrorists and their access to explosive materials and funding. However, it is equally important to address the threat posed by the virulent ideology driving JI, Al Qaeda and a continuously evolving network of like-minded counterparts.

In this connection, Singaporeans can be proud that local Muslim community leaders have since 2002 devised and refined a highly sophisticated counter-ideological programme targeted at Singapore JI detainees at first, but expanded since then to encompass their families and the wider public. As more than two-thirds of all detainees since 2001 have been successfully rehabilitated, Singapore's counter-ideological programme, spearheaded by the all-volunteer Islamic scholars of the Religious Rehabilitation Group (RRG), has been internationally acclaimed to have been effective.

In Singapore it has been rightly recognised that moderate-minded scholars remain best placed to lead the overall counter-ideological effort. They are the most qualified to present widely accepted understandings of Islamic theology and to challenge the glaring flaws within JI and Al Qaeda ideology. They are also strategically positioned to offer authoritative opinions on a wide spectrum of issues ranging from the deeper meaning of the concept of jihad to how Muslims should conduct their daily affairs in a secular, multi-cultural polity like Singapore.

WHAT MORE CAN BE DONE?

Nevertheless, ten years on, it is worth asking if the overall potency of the counter-ideological programme can be further enhanced - via the engagement of rehabilitated former JI detainees in the counter-ideological effort as well. Supporters argue for a measured employment of carefully selected ex-detainees as such individuals possess a certain "street cred" by virtue of actually having been within the movement. They have witnessed at close range the problems and real-

world contradictions within JI ideology.

Hence they are uniquely positioned to craft authentic "inside scoop" narratives aimed at cautioning vulnerable people against falling for JI ideological blandishments. In this way, former radicals could complement moderate scholars in counter-ideological work.

Such use of former radicals is nothing new. During the Malayan Emergency of the 1950s, disillusioned former communists were effectively employed in what was known then as counter-propaganda work. The former senior Communist Party of Malaya leader Lam Swee, for instance, had been well known amongst the ordinary rural Chinese folk that made up the mass base of CPM support. He had played a major role in the resistance during the Japanese Occupation and in the post-war labour movement. Hence when he defected to the government side and wrote a short booklet called *My Accusation* – an expose of the contradictions and blatant power plays within the CPM – it sent shock waves throughout the Malayan communist movement.

The panicked response of CPM ideologues in hastily publishing frenzied rebuttals of the points in *My Accusation* prompted the government psychological warfare expert C.C. Too to remark that the CPM themselves should be thanked for indirectly generating publicity for Lam Swee.

Our own historical record suggests that former "insiders" have potentially something to bring to the counter-ideological table today. Engaging former detainees in counter ideological work actually represents a form of continuous rehabilitation for them as well. Employing former radicals may well represent a win-win proposition

ENGAGING FORMER JI DETAINEES IN COUNTERING EXTREMISM: CAN IT WORK?

for the three main stakeholders in the counter-ideological process: first, the former detainee; second, his audience - be it other detained individuals, detainee families, or the wider community - and finally; the relevant religious and secular authorities.

CHALLENGES

Employing former detainees in counter-ideological work is not without its challenges. In Indonesia, it has been found that a number of released JI militants promptly rejoined their comrades in plotting violence against the government and Western interests. The problem of recidivism lies in the sheer difficulty of actually changing the mindset of Indonesian JI militants.

This has prompted observers to call for the minimal aim of simple detainee “disengagement” from violence as opposed to more ambitious ideological “de-radicalisation” – in which detainees ultimately give up

their commitment to establishing the Islamic State and settle for practising their faith in Indonesia’s secular and plural milieu. Even in Singapore, the remaining unrepentant detainees – such as the former operational leader of the Singapore JI cell Mas Selamat Kastari – represent hard core elements that are likely to remain impervious to counter-ideological efforts. Again, this is not new: many hardcore Malayan communists refused to recant their commitment to setting up a Communist Republic in Malaya and Singapore well after unsustainable losses through eliminations and surrenders had forced Secretary-General Chin Peng to demobilise his fighting units at the end of 1958.

This however does not imply that there is ergo no role for former JI detainees in counter-ideological work. It does suggest that great care must be exercised in selecting former detainees for such efforts. While moderate

scholars must continue to exercise overall strategic control and direction of the counter-ideological programme, the judicious use of carefully selected willing former detainees could potentially further enhance the overall effectiveness of the programme.

As Singapore enters the second decade of the ongoing struggle against a resilient violent extremism, it is imperative to ensure that it uses all available measures in this fight.

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A 'close run thing?' Evaluating the capabilities of the Argentine Military in the Falklands Conflict

BY ACTING SUB-LIEUTENANT RICHARD MORRIS

Could the Argentine Military have defeated the British taskforce if it had altered its strategy or tactics?

The Falklands conflict may have occurred some 30 years ago but it remains one of the only relevant case studies of modern naval warfare in 'the missile age.' As the Royal Australian Navy rises to meet the complex security challenges of the 21st century it must not ignore the facts made undeniable by combat in the South Atlantic. For both historian and security analyst the Falklands war illustrated the complexities of amphibious operations, the importance of joint operations, the power of capable submarines and finally the enduring relevance of Corbettian strategy.

It has been said, echoing the words of Admiral "Sandy" Woodward, commander of the task force executing 'Operation Corporate,' that the war had been 'a damned close run thing,' one in which Britain had narrowly escaped defeat against a well equipped and determined enemy. However, as an examination and evaluation of available military options reveals, Argentina never had the capability to defeat the British task force.

To win the war, the Argentines needed to neutralise Britain's mission-critical assets before it was able to project power ashore. The most effective way of achieving this would have been in a mass, saturation style air attack, effected at the conflict's opening stages or during an amphibious landing. Although such an attack initially seems to have been possible given the number and

sophistication of Argentine strike aircraft and the weaknesses of the British air defences it is unachievable when the training, maintenance, logistics and range limitations of the Argentine Air Force are considered.

Argentina also had a Navy, with an aircraft carrier and diesel submarines, which it could have used to attack the British task force. However, its technological inferiority and lack of anti-submarine capability meant that the Argentine Navy was unlikely ever to have made a significant impact. If the Argentines had expanded Stanley Airfield to accommodate strike fighters, the strategic balance of the conflict could have shifted in their favour. This was no simple task, however, nor one which Argentina could have completed in the time required, nor defended with the forces it had deployed to the Islands.

Finally, it can be argued that if the Argentines had waited 18 months before invading, their air force would have been bolstered by more aircraft and weaponry while the Royal Navy,

downsized as a result of the 1981 Defence review, would have been powerless to respond. If the Argentine command had not invaded when it did, however, they may never have had another chance. An analysis of relative strengths necessarily leads to the question of what factors gave the British the decisive advantage in the conflict. The United States proved itself an invaluable ally in its willingness to provide basing on Ascension Island, air to air missiles and intelligence support, all of which were essential to the British war effort. British nuclear attack submarines were also critically important and their presence gave the Royal Navy the ability to neutralise the Argentine Navy and to isolate the Argentine defenders from their support on the mainland. Britain also had a far superior logistical and economic capacity, which was essential in maintaining operations so far from home.

Finally, the greatest advantage that the British had was in the standard of their fighting men, the quality of their

Invincible, a Falklands warrior, pictured serving in 2004 (Headmark collection)



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commanders and the 'jointness' and efficiency of their command structure.

The Saturation Attack Option

If the Argentines had focused the bulk of their air force in one sustained attack on the British task force and destroyed or disabled its mission-critical units, they could conceivably have achieved decisive victory. The most effective weapon the Argentines had was, as Norman Freeman notes in *Military Lessons from the Falklands*, "their numbers [in aircraft], which may saturate the defence[...]"¹ Although the Argentine Air Force did penetrate the air defences of the task force several times, they did this with no more than half a dozen aircraft at a time and never committed to an all out saturation attack. As Woodward comments in *One Hundred Days*, this meant that "they never really came after the one target that would surely have given them victory."²

Clausewitz is a useful tool for understanding this idea. Clausewitz notes that "the first task then, in planning for a war is to identify the enemy's centre of gravity, and if possible trace it back to a single one. The second task is to ensure that the forces to be used against that point are concentrated for a main offensive."³ In the South Atlantic, The British task force's 'centre of gravity' was its aircraft carriers, *Hermes* and *Invincible* and its amphibious landing ships, particularly *Canberra*.¹ If either of the aircraft carriers were destroyed or disabled, the task force would have been unprotected from air attack and the central node of its command and control system would have been removed. If any of the amphibious ships were hit, the task force would have been limited in its ability to project power ashore. Such a loss

1 During the early stages of the amphibious landing, *Canberra* held the majority of the Task Forces ground forces.



Argentine soldiers in the war (Courtesy PressTV)

would also have significant political and social repercussions which may have led to a British withdrawal.

On a superficial analysis the Argentine Air Force seems to have been large and capable enough to effect and sustain such an attack on the British task force. The Argentine Air Force in late 1981 was one of the most capable in the region, boasting over 100 combat aircraft, airborne refuellers and pilots trained by Western forces. The bulk of the Argentines' air strike capability consisted of American built A-4 Skyhawks, which, if launched from Rio Grande, allowed the Argentines to project air power over the Falklands. These aircraft could also 'buddy refuel' to further extend their ranges.⁴

By August of 1981, the Argentines had also received five Super Étendards, with five Exocet missiles.⁵ These aircraft, although limited by range, could be refuelled by KC-130 tankers to bring them well in range of the British task force. The Exocet provided a surface skimming "fire and forget" missile which enabled the firing aircraft to turn and escape, increasing mission survivability. Argentina also had taken recent delivery of Israeli-built Dagger

aircraft, which had proven their air combat capabilities against MiGs in the 1972 Yom Kippur War.⁶

In the counterinsurgency and land attack role, it had over 100 Pucara land attack aircraft, which could operate from remote airstrips. Argentina also had Mirage III's, but a lack of refuelling capability meant they were not deployed to the conflict.⁷ It is important to note that all of these aircraft were supersonic, highly manoeuvrable and had proven themselves as both fighter and strike platforms in conflicts internationally. The Sea Harrier and RAF Harrier GR3, in contrast were small, subsonic, had shorter ranges and had not been validated in combat. On paper then, and assuming an even playing field of altitude, combat fuel and weaponry, the Argentine jets had the tactical advantage. Further, allowing for the Argentine numerical superiority in facing only two dozen Harriers, the Argentines appear to have had unarguable potential superiority in the air.

It is also important to note that the Argentines had available to them the assets required to fix the position of an incoming task force. The primary early warning came from two mobile Westinghouse

TPS-43 three-dimensional air defence radars, which had been deployed to the Falklands near Stanley.⁸ This gave the Argentines an early warning capability which the British did not have as their light carriers, initially, did not carry fixed wing AEW&C assets. There was an AEW&C capability gap after the decommissioning of HMS *Ark Royal* (R 09) and her Fairey Gannets, in 1978, which was not fixed until Searchwater radars were fitted to Westland Sea Kings in 1982.

Additionally, the Argentine Navy had Grumman S-2 Tracker aircraft and P2E Neptunes, which could be used to provide over the horizon radar identification.⁹ These were the primary methods of finding the British task force. Secondary means for early warning consisted of a 707 and Lear Jets, which were used to find surface contacts via weather radar, as well as undertaking clandestine intelligence gathering with converted fishing trawlers, such as ARA *Narwal* and *Alfred Sobral*, and the use of open source and signals intelligence.¹⁰

Saturation attack seems to have been particularly viable when the limitations of British air defence systems in the Falklands are considered. The British task force employed a fluid layered defensive system, where 'picket' defensive ships were placed to provide early warning and the first line of defence, with others placed near to mission critical units. It is important to note that the Falklands conflict was the first time a Western Navy had encountered a mass air opposition in the jet and missile age, therefore, the effectiveness of this system had not been completely validated.¹¹

The principle unit for air defence was the Type 42 destroyer with the type 22 'Broadsword' class frigate complementing its air defence

systems. The type 42 utilised the Type 965 radar to identify targets and the Sea Dart missile to engage them. Type 42s and 22s had only two air defence channels. Only one channel could be devoted to each incoming target.¹²

The way that a saturation attack would be defended against would be by targeting aircraft sequentially, with a heavy reliance on command and control. There were two variables upon which the reliability of this system depended; range and backdrop. The greater the range of first contact, the more time the defenders had to engage the aircraft before they themselves were attacked. The backdrop was what was behind the incoming aircraft once they had been 'painted' by the air defence radar. If there were any terrain behind the aircraft, Sea Dart could become confused and 'freeze,' or attempt to locate another target. The British were operating in a littoral environment and therefore were often being attacked by aircraft which 'popped up' over land. They were also being attacked by aircraft at a very low level, below their air search radar ceiling. This meant that air contacts were often detected only at short ranges. The *Étendards* required a quick 'pop up' at around 30 miles to get a radar fix for their Exocets, which were usually released soon after.¹³

The Exocet travelled at 650 kts, which gave the British around two minutes warning before impact, depending upon the firing range. The A4s primary strike weaponry was its 'dumb-bombs,' and thus it did not have to 'pop up' until the final moments of its attack. In the attack against HMS *Brilliant*, for example, the A4s were detected only 15 miles away, which meant that the time between detection and bomb impact



was three minutes. These limitations meant that the British were very vulnerable to a mass air attack. The fact that the Argentines had been the only foreign customer for the Type 42 and had used the Sea Dart system meant that they could identify these limitations and could

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potentially capitalise on them.

The ideal time for this kind of attack would have been either as the task force entered its area of operations or at the time of the landings. Woodward, thinking about Argentine strategy, thought the right move would be to "[...]throw everything at us once they have decided we are there for real, and not just another deception."¹⁴ The geographic placings of the exclusion zones gave the Argentines the strategic advantage if they decided to strike as the task force entered its area of operations. The Argentine exclusion zone overlapped that of the British and thus if the task force were confronted by Argentine jets, outside of their own exclusion zone, they would not have had justification, or *cassius belli*, to fire the first shots of the war.

Additionally, such a show of force at such an early stage would have forced Whitehall to question further commitment to war. Attacking during an amphibious landing would have also caught the British at their most vulnerable. Their amphibious ships would have been packed with troops and their escort destroyers' radars would have been limited by surrounding terrain. As the troops were landed, there would also have been a gap in available air defence, as the ground forces set up their 'Rapier' missile systems.¹⁵ With the bulk of air defence vessels closer to shore, 'mission-critical' assets would have been left relatively vulnerable in the rear. This would have been an ideal opportunity for an outflanking attack with the aim of hitting *Hermes*, or *Invincible*.

Problems with the Saturation Attack Option

Maintenance, training, equipment and deployment limitations reveal

the difficulties the Argentines would have faced if they had attempted either of these two kinds of attacks. As Freedman reveals in his *Official History*, the primary strike fighter asset of the Argentine arsenal, the A-4 Skyhawk, had been plagued with serviceability issues since the United States enforced an arms embargo in 1977.¹⁶ As a result, aircraft had to be cannibalised to allow any operational capability. Argentina's newest French jets had only been partially delivered, had not been cleared for carrier operations and were only equipped with five Exocets. The Argentine pilots also had significant gaps in their training. They were not trained to operate at night or in bad weather and did not have experience flying at the low levels required for an anti shipping attack profile.¹⁷

One of the most important deficiencies of the Argentine air force however was its lack of electronic counter measures for its aircraft, which made them particularly vulnerable to the new infra-red homing AIM-9 'Stinger' missile which the Harriers used.¹⁸ The Argentine air force was also deployed across several fronts, with the main military airbases in the North

as a deterrent to Chile, Argentina's traditional rival. It is also important to note that the reconnaissance elements of the Argentine air force were also extremely vulnerable if not protected. Its land based air defence radars could be easily identified and engaged with 'Shrike' radiation missiles and its high altitude 707 and Lear jets were very vulnerable to the fleet's air defence systems.

Equipment failures were significant. If the Argentine Air Force had configured their bombs correctly, for example, they could have caused considerably more damage to the British task force. Some 13 bombs struck British ships without detonating. These bombs were fitted with a safety mechanism which prevented them from going off if they were accidentally released

Bottom: HMS Conqueror returns to base in the Falklands War - her tremendous endurance due to her nuclear power enabled her to stay on station almost indefinitely. Note the Jolly Roger flag - an important but to some controversial morale booster (RN archival)

Falklands Sea Harrier bombing up (RN archival)



on the ground. The Argentine jets attack profile was often so low that the bombs had not fallen a sufficient distance to arm. This did not make the bomb harmless, it just prevented it from immediately exploding. Indeed *HMS Antelope* and *Ardent* were still lost, despite the bombs they received failing to explode. Lord Craig, then Marshall of the Royal Air Force, stated that “*six better fuses and we would have lost.*”¹⁹ This, unfortunately, was incorrect and it started the myth that it had been ‘luck’ which had prevented the British from being “blown away” in the Atlantic. The reality is that fitting retarding devices, such as parachutes, to bombs on aircraft with a very low attack profile was common practice.²⁰ Not fitting them to the weapons was a tactical blunder and the Argentines paid dearly for their mistake. Even if all of the bombs which hit had exploded, none of the ‘mission-critical’ units would have been hit, so it is doubtful that it would have caused a British defeat.

Range, however, was the biggest obstacle which faced the Argentine air force and it placed them at a distinctive tactical disadvantage in the air over the Falklands. The air force could not have struck the task force as it entered its exclusion zone as it was well beyond the operational range of any of its jets if they were launched from Rio Grande. If such a strike were possible, it would have to have been launched from a substantially upgraded Stanley airfield, or from the Argentine carrier. Why they could not attack from either of these locations will be explained later.

A ‘double refuel’ of Super Étendards and ‘buddy refuel’ sortie with A-4’s would have brought them within range, but the Argentines did not have the logistical capability

to do this with enough aircraft to overwhelm the task forces air defence systems. Attacking during the landing however, would have been within range but would make the Argentine jets extremely vulnerable.²¹ At the limit of their range, the A-4’s had, at best, only five minutes of ‘combat fuel’ over the islands. This meant that they could not confront the British air patrols in air to air combat. Climbing to confront the Harriers not only would have burnt valuable fuel, but it also would have exposed them to the air defence radars of the fleet. Being low, slow, without electronic counter measures, and committing to such a manoeuvre would have been suicide. This was well demonstrated by the first and only Argentine Air Combat sortie, on 1 May, which resulted in two aircraft losses and one Mirage having to make a forced landing, with no fuel, at Stanley only to be shot down by its own forces.²²

Thus the Argentines had no choice but to commit to a very low altitude attack profile, at wave top height below air defence radars, hitting the task force and making a quick escape. This profile was not easy for even the most skilled fighter pilot. Rounding Porpoise Point or popping up over the hills at 400kts, the Argentine pilots had around 15 seconds to find a target and line up for bomb delivery, all whilst under a barrage of flak, missile and small arms fire. The British may have called San Carlos ‘*Bomb Alley*’ but to the Argentine pilots, it was ‘*Death Valley*’



HMS Invincible returns from the Falklands War (Wiki images)

Being able to find and engage a ‘priority target’ in this environment was a luxury that the Argentine pilots simply did not have. Once the attack was completed and combat fuel exhausted, the Argentines had no choice but to make a quick escape but, in doing so, they exposed their tails to the Stinger missiles of the Harriers, which were directed by the fleet, and which pounced upon them from 10,000 feet.²³ If the Argentines had risked a mass air attack, they may have lost the bulk of their air combat capability in the process.

Naval Options

Another idea often posited was that if the Argentines had been able to coordinate a naval ‘pincer movement’ whilst a saturation air attack was taking place, they could have overwhelmed and destroyed the British task force. As Woodward’s memoir reflects, his biggest fear in the early days of May was that the task force would be attacked from all sides; Skyhawks launched from the *Veinticinco de Mayo* battle group in the North, Exocets from the *Belgrano* and her two escorts in the South, and air attacks from the mainland in the west. Woodward records on 3 May “unless we were extraordinarily lucky we could find

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ourselves in some serious trouble here.”²⁴ Indeed, at this time, both Argentine battle groups, 79.3 and 79.4, had manoeuvred into positions from which this attack could have been launched.²⁵ Yet there was never any attack, as the weather conditions prevented the Skyhawks from being launched. Nonetheless the Argentine Navy would have presented a credible threat to the British task force if it had stayed in the area.

It is doubtful, however, that the further participation of the Argentine Navy would have changed the outcome of the Falklands conflict. Firstly, the Argentine surface fleet was entirely outmatched by the British. With the exception of its Type 42 destroyers and its French A69 Avisos frigates, the bulk of its surface fleet was obsolete. Its flagship, the *Belgrano*, was 44 years old at the time of the war and its boilers were often unserviceable. The Argentine's sole aircraft carrier, the *Veintecinco de Mayo*, had degraded air defence radars, maintenance difficulties and a vibrating propeller shaft at speeds greater than 16kts. The latter fault made it easy prey for hunter-killer submarines.

The Argentine Navy was also very vulnerable to air attack. The Sea Dart system, which was their main anti-aircraft weapon, was one which was extremely complicated to install and operate and the Argentines often struggled to fit it to their ships. It was well known, for example, that the Type 42 destroyer *Santísima Trinidad* could not fire the Sea Dart in 1981.²⁶ The Argentine navy also had only one tanker, and no merchant logistic support,

which meant it had very limited ability to project power. The biggest weakness of the British fleet was its lack of mine hunting capability yet the Argentine Navy did not have enough mines, nor enough vessels, to capitalise on this weakness. The biggest weakness of the Argentine Navy was its lack of anti-submarine capability. Its Tracker aircraft were obsolete in this regard, whilst its Alouette and Lynx helicopters had yet to be fully integrated into its surface fleet.²⁷ Additionally, the Argentine Navy had no experience hunting nuclear hunter-killer submarines. This weakness alone, combined with the British nuclear submarine threat, meant that the Argentine Navy was outclassed in the South Atlantic, a fact which the military *Junta* could not deny with the sinking of the *Belgrano* on 2 May.

The Argentines also had their own conventionally powered diesel electric submarines but training and maintenance deficiencies ensured that they never played a decisive role in the conflict. There were four diesel submarines in the Argentine order of battle. Two of these were former United States Navy Guppy class boats from the Second World War. According to American Naval Intelligence reports, both were of questionable maintenance and were only suitable in the reconnaissance role.

The main capability came from Argentina's two German 209 type boats, ARA *San Luis* and ARA *Salta*, which were modern, quiet and capable. The shallow waters of the Falkland Islands were often protected by harsh weather and

had abundant marine life, an ideal environment for diesel hunter-killer submarine operations. At the time of the war, *Salta* was not operational, yet *San Luis* was deployed to the area and had the potential to disrupt a landing severely. The crew of the *San Luis* were later to report that they had attacked British ships on several occasions in the approaches to Falkland Sound. Yet the *San Luis* had negligible impact on the British task force.²⁸ As LTCDR Steven Harper, USN was to write in an intelligence report following the Falklands War, the Argentines had not maintained their torpedoes correctly. As a result, the polarity on the gyro system of the torpedoes had accidentally been reversed, causing the torpedoes to divert from their intended target.²⁹ It was errors such as this which illustrated the limited capabilities of the Argentine submarine force.

Reinforcing Stanley Airfield

If the Argentines had reinforced and expanded the airport at Stanley to accommodate strike aircraft, it certainly would have made the conflict a lot harder for the British. British Naval intelligence estimated that placing the mission critical units in excess of 700nm from the Argentine Air base at Rio Grande would reduce the air threat to a satisfactory standard. It is therefore safe to assume that if Port Stanley had been the base of operations for Argentine strike aircraft, the British carriers would have had to be 700nm to the east. This would have had several important consequences, strategically and tactically. Firstly, as previously noted, it would have enabled a mass air strike on the British task force as it entered the Argentine exclusion zone. Secondly, it would have allowed the

Argentines to escort their strike aircraft with fighters and to face the Harriers in a more even tactical scenario. The aircraft could have also networked with the early warning radar to intercept incoming Vulcans and Harriers.

Argentina simply did not have the logistical and military capability however, to create and defend a base of this magnitude. Building an airbase for strike fighters not only requires a runway, it also requires stores for fuel, accommodation, taxi strips, support personnel, maintenance facilities and hangers. To be able to ferry this equipment to the Falklands would have required a serious logistical transport capability. Transport vessels would also require escort ships and air cover. The mere possibility of the presence of British nuclear submarines in the area mitigated against Argentina even considering such an initiative.

Even if the Argentines had built the base, they did not have the military means of protecting it.³⁰ Stanley airfield would have been the primary target for the British task force. In his memoir, Woodward recollects that "As always, I was terribly aware of the acute danger we faced if the Args ever managed to repair that runway sufficiently to get fighter/attack aircraft off the ground[...]"³¹ As for the possibility of a fully functional strike fighter air base at Stanley, Woodward coolly comments that "we needed to make sure that was an impossibility." Protecting a base of that size and importance against the British task force would have required complex air and ground defence systems. The principal air defence weapons on the island were several Oerlikon 35mm portable guns and one Roland surface to air missile unit, with the secondary armament being numerous shoulder launched blowpipe, SAM-7 missiles

and small arms.³²

Having these weapons did not necessarily guarantee that they would be effectively employed. One Argentine conscript remembers using the Blowpipe missile "I saw NCO's who, with all the goodwill in the world, couldn't use them, and when they fired, the missile shot off in any direction, sometimes crashing into the ground. You can't start learning in the middle of the war."³³ These weapons were designed to defeat a fast low flying threat, like the Harrier. Against the Avro Vulcan however, a strategic bomber designed to penetrate complex Soviet air defence systems, the airfield remained potentially very vulnerable. The Vulcan's Shrike missiles also could have neutralised the Argentine early warning capability. As the successful and decisive SAS raids on Pebble Island would later illustrate, the British could also use special forces to neutralise such bases. As will be explained later, the Argentine ground forces, most of whom were conscripts, were not equipped or trained to defeat an attack of this nature.³⁴

The 'Wait 18 Months' Theory

If the Argentines had been able to wait six months to a year before taking the Falkland Isles, their air force would have been far more capable and Britain, due to its planned defence cuts, could have done, as Woodward put it, "precisely nothing." In 1982 the Thatcher government, in the context of international recession, inflation and an apparent Soviet military build up, initiated large cuts in the Department of Defence. The aircraft carriers *Hermes* and *Invincible* as well as the amphibious landing ships *HMS Intrepid* and *Fearless* were to be scrapped or sold, with the frigate and destroyer fleet reduced by one fifth.³⁵

This signified a planned abandonment of a blue water naval capability and a focus on Eurocentric, NATO-oriented deterrence. Waiting six to 12 months before invading would have strengthened the Argentine air force. At the time of the war, Argentina had received only five of its 14 Super Étendards, and only five of its 30 Exocets.³⁶ Considering the impact of only five Étendard-delivered Exocets on the British task force, three times as many could have been devastating.

Even if the Argentines had received their full complement of Exocet missiles and jets however, the British were willing to go to extreme lengths to eliminate them. In *The Secret War for the Falklands*, Nigel West reveals the secret campaign to prevent Exocets from being delivered to Argentina. France had agreed to halt shipments of weaponry to Argentina but the risk still remained of missiles being smuggled in from its neighbours, all of which had Exocets. MI6 officers were to pose as arms dealers and buy off Exocets and secret agreements were made to ensure that the missiles did not reach Argentina.³⁷ One of the more daring plans involved landing a Hercules aircraft on the runway at Rio Grande, with B Sqn 22 SAS members destroying the Étendards and Exocets and killing the pilots.³⁸ The soldiers would then exfiltrate and escape to Chile. This mission, although rehearsed, was never executed. No doubt the SAS recognised the improbability of an 'escape to Chile' and rightly considered the operation to be a last option. Although never implemented, these kinds of plans illustrate the sacrifices that Britain was potentially willing to make to protect its fleet from Exocets.

The Contextual Background

The decision by the Argentines to invade the Falklands when they

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did is understandable when the context of the decision is taken into account. In early 1982, the Argentine military rule was on the point of collapse. In 1981 alone 'under the regime's guidance, Argentine GDP had dropped from \$85,000 million to \$80,000 million, the fall being accompanied by rising inflation and high unemployment. This, combined with public hostility and unrest, had caused significant unease amongst the Argentine military leadership. The Malvinas had long been a part of the Argentine identity. Taking them, it was believed, would rally the home front and strengthen the legitimacy of the regime. If the military leadership had waited another year, it may have been overthrown. Additionally, there was an understandable belief that Britain would not respond to an invasion and that if they did, the United States would not support the response. The Thatcher government's plan to 'axe' its blue water capability sent a signal to the world that Britain was financially overstretched and could not afford to protect its international interests. Particularly important in the 1981 Defence White Paper was the decision to scrap the ice ship *HMS Endurance*.³⁹ Although probably relatively insignificant to Whitehall, this ship represented the only British naval presence in the South Atlantic. Its removal sent a clear message to the Argentine military *junta* that Britain had lost interest in the Falklands. The military *junta* also had good reason for their belief that the United States would remain neutral in the conflict. Although it had enforced a trade embargo on the Argentines, the US's strategic priority for South America was stability, which was seen as essential in its fight against communist insurgencies. For the US to support visibly a British war effort

against Argentina would undermine the Inter-American Treaty of Reciprocal Assistance, or 'Rio Treaty,' signed in 1947, with South American nations.⁴⁰

Finally, a series of events which were beyond the control of the Argentine leadership pressured them into invading. To invade the Falklands successfully, the Argentineans had to maintain the element of surprise. If the British were forewarned of the risk, they could secretly send nuclear hunter-killer submarines to the area. These could provide a totally deniable over-watch of the Falklands area for months and, if necessary, perform a pre-emptive strike on any invading force. As previously described, the Argentinean Navy had very little experience or equipment with which to combat this kind of threat. As the military *Junta* were planning the invasion, a group of Argentinean marines posing as civilians, in an impromptu display of nationalism, raised their national flag in the South Georgia and South Sandwich Islands. This event was captured on camera and broadcast internationally, suddenly placing the *Junta's* ambitions in the international spotlight. Several days later, Argentinean naval intelligence elements notified their command that two British nuclear submarines had been spotted sailing out of harbour in Scotland.⁴¹ If they were sailing to the Falklands, and it had to be assumed that they were, the military *Junta* had to act before they arrived. This gave them a maximum period of two months in which to complete the invasion.

The 'Attrition' Strategy

It could be argued that if the Argentineans had persisted for only a few more months in their war effort, the British task force would have been exhausted, or forced to operate in winter, which, it seems, was considered unsustainable. The British command

had indeed insisted that the Islands be retaken in May so as to avoid the South Atlantic winter, which could put a serious strain on an already battle-weary fleet.⁴² There was also a concern towards the end of the war that the current rate of ship losses could not be sustained by Britain and if the rate of ship losses had continued for another month or so, the task force would have had to withdraw. However, if the British had reason to fear the South Atlantic winter, the Argentineans had justification to be terrified. The Argentine land forces had not even been supplied with winter clothing. Daniel Kon, in *Los Chicos de LA Guerra*, interviews one such conscript. The conscript remembers that "*It was summer clothing; it wasn't right for the mountains or snow... I didn't feel too cold on my body but only because I was wearing two summer uniforms, one on top of the other.*"⁴³ This ad hoc solution would not have sufficed in July.

As for the attrition rate argument, the Argentinean air losses were far less sustainable than the British loss of ships. The Royal Navy had anticipated ship losses and had kept up a constant flow of replacement frigates and destroyers as the campaign continued. The Argentine losses had been relatively high; one cruiser, one submarine, three transports and the trawler *Narwal* were all destroyed. Most importantly however, it had lost 75 fixed wing aircraft, and 25 helicopters. Of the 59 Argentinean ground attack aircraft deployed to the Islands, only two air force Chinooks and one naval Aeromacchi returned to the mainland.⁴⁴ The Argentineans were losing around five strike aircraft for every British ship put 'out of action.' For a larger power these losses may have been acceptable but for a middle-power such as Argentina, they were not sustainable.

Decisive British Advantages The United States

On the other hand there were several factors which gave the British the strategic and tactical upper hand and without which, the war could not have been won. The most important of these was assistance from the United States. Although the US had publicly decided to remain “neutral” during the conflict, in reality the US sided heavily with the British. Firstly, without the US providing strategic nuclear deterrence in Europe, Britain would have been unable to commit such a large force to the South Atlantic. Access to Ascension Island as a logistical base and staging point was absolutely essential to the operations of the British task force. Without this, the British would have been unable to sustain a logistical supply line across the Atlantic or launch Vulcan strikes. The US even went so far as to offer “*an aircraft carrier or two*,” if the British were ever desperate.⁴⁵ Although it is difficult to see how these would have been manned or operated in such a short period of time, it could have given the British last chance option to salvage the war effort if Argentines had disabled *Invincible* or *Hermes*.

The US had also supplied the British with the AIM-9L Sidewinder infrared air to air missile. This weapon, which could engage at all aspects and was simple to operate, put the British at a distinct advantage within visual range air warfare. General Milton states, “It was the AIM-9L Sidewinder air-to air missile that caused the most envy. In the opinion of the Argentines, almost any airplane becomes something to be taken seriously if it has the AIM-9L.”⁴⁶ The Argentinean pilots demonstrated admirable bravery in persisting with attacks despite heavy losses but, as H. Telford Jr. noted, “courage and valour are no match for superior weaponry effectively employed.”⁴⁷ One of

Woodward’s lessons from the war was that it was “perfectly clear to me that without those AIM 9L the Sea Harriers would not have been good enough.” He adds, on the subjects of Ascension and the Sidewinder, that ‘Never mind the other ways that help was provided. Lack of these two alone would probably have reversed the outcome.’⁴⁸

The Americans also provided comprehensive intelligence and satellite communications support to the British, which gave them better tactical situational awareness than their Argentinean enemy. The US gave priority access to its array of communications and intelligence satellites. Satellite communications were essential to the functioning of the British chain of command. Without it, the British taskforce would not have been able to quickly communicate with Whitehall. This communications link would prove essential in the sinking of the *Belgrano*. *Conqueror* was presented with only a window of opportunity to engage *Belgrano* before it entered the shallow waters of the Burdwood Bank. If Woodward had not been able to gain authorisation for a change in the rules of engagement from Whitehall quickly, the *Belgrano* could have escaped. High resolution imagery was also supplied from US KH-8 ‘keyhole’ satellites and was very useful in assessing Argentine capabilities. Finally, access to ‘white cloud,’ the system of US satellites which tracked the movements of surface ships internationally provided the British with far greater situational awareness.⁴⁹ If the Argentines had received equally comprehensive intelligence, they would have been able to target mission-critical units when they were unprotected and vulnerable.⁵⁰ This heavy contrast in available tactical and strategic intelligence and communications tools gave Britain a decisive advantage in the conflict.

Submarines

Another advantage the British had was their nuclear hunter-killer submarines. These units could deploy to the Falklands in advance of the fleet and undertake surveillance and security patrols without affecting the progress of diplomatic negotiations. For the Argentine Navy, the British submarine threat was, as William J. Ruhe Jr. asserts, one which could not be measured nor opposed.⁵¹ By simply visibly putting their submarines to sea, the British unwittingly forced the Argentines to commit to a conflict unprepared. When the submarines, *Splendid*, *Spartan* and *Conqueror*, began their sea denial mission in the Falklands they cut off the Argentine defenders from means of resupply, with the exception of the use of one Guppy Class submarine, the *San Lois*. British submarines also provided vital tactical intelligence in the later stages of the war by observing Argentine Jet launches off the coast of Rio Grande.

Economic Superiority

Another advantage that the British had was their economic and logistical superiority. The Falklands war was essentially one in which a barely middle power challenged the authority of a traditionally robust ‘great power.’ Although Britain’s power had diminished after World War II, it could still commit a far greater magnitude of resources to a war. Despite being in recession, the British government spent three times that of the Argentineans on their war effort. Logistically speaking, the British military was also far superior. Its C-130 fleet, for example, was able to carry out 40 supply drops successfully with only a 5% unserviceable rate. Britain’s Royal Fleet Auxiliary vessels also proved a vital element.⁵² In the war, it deployed 45 vessels, delivering

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100,000 tonnes of freight, including 95 aircraft.⁵³ Argentina in contrast, could barely sustain logistics within the islands. One young Argentine conscript remembers that he never got to see a full ration pack while he was in the Malvinas, as they were pilfered as they travelled to the front line. Ironically, he remarks, “do you know how I finally got to see one of those boxes? An English soldier gave it to me when I was a prisoner in Puerto Argentino.”⁵⁴ The Argentinean conscripts would have to eat local livestock or steal food. Another conscript admits “We were thieves and the enemy was the other soldier who had orders not to let anyone in [to the supplies].”⁵⁵

Personnel

The biggest advantage the British had was in the quality of their personnel. Clinton Berry states in *Military lessons of the Falklands*, that: “One of the immutable lessons of any war is that the quality of the individual fighting man is paramount.”⁵⁶ The fact is that the average ‘fighting man’ of the British armed services in the Falklands was far superior, in his training, morale and available equipment. The Argentinean forces were often equipped with similar equipment but their lack of training and experience proved disastrous. One example was the Argentinean observers at Jersey Point who, although equipped with state of the art night vision equipment and entrenched in an ideal observation position, failed to hear the helicopters flying over their heads, or see the twelve thousand tonne assault ship on their eye-line at two miles positioning for landing.

The British military at the time was one of the most powerful of the world and in the seas of the South Atlantic it faced an enemy which presented no surface or submarine threat and refused to attack from the air at night.

The United States Military analysed the Falklands conflict in great detail, and in *The Marine Corps Gazette* Peter M. Dunn perfectly captures Britain’s superiority in quality of personnel. He states

“whatever the merits of the Falklands victory, no self respecting professional military officer should confess to having learned anything from it. To admit that one discovered that superb fitness, high morale, superior field-craft, capable and courageous political and military leadership, a sound logistics system, intelligence, a sensible control of the news media, air and naval support, a sound strategy, skilled improvisation and an intelligent use of technology[...] were necessary for victory is to admit that one is in the wrong business.’

The British benefited from more experienced senior officers and a far background more ‘joint’ and efficient command structure. European and American military doctrine had heavily influenced the force structure and tactics of the Argentine Navy and Air Force. As a result, it was relatively easy for British command to understand Argentine strategy. They had extensive experience in defending against air attack, anti submarine warfare, sea denial and enforcing exclusion zones from many international war games against nations equipped with similar technology. Woodward recalls one example of how these experiences allowed him to appreciate the complexities of fleet defence. In assessing the threat of a nearby trawler on 2 May, Woodward comments that “six months ago I had crept up on the Americans in the Arabian Gulf, in circumstances very nearly identical to these.”⁵⁷ Most importantly, Woodward had extensive experience in

submarine operations, himself a former Submarine commander. This would prove essential in the decision to sink the *Belgrano*, which effectively defeated the Argentine Navy.

The British also managed to have a far more resilient and efficient command structure, which allowed a level of autonomous control to smaller units. Obstacles within this structure, such as the separate command of the Submarine force, or the bureaucratic red tape of Whitehall, could be bypassed by using alternate means, like satellite communications. The British also had demonstratively more effective cooperation between their sea and land elements, which was essential to the success of any amphibious operation. Central to this was the close working relationship between Colonel Richard and Admiral Woodward. One good example was the use of a subject matter expert, Major Ewen Southby-Tailyour in the amphibious landings at San Carlos. The Argentine commanders, in contrast, did not display such efficiency. Turner in *Military lessons of the Falklands* maintains that “While some officers fought with dedication (with medals for bravery going to officers at the rank of major and below), many field commanders left their men for the safety of the rear echelons. In many cases, it was the heroism of new recruits, fighting alone, that held off the British as long as possible.”⁵⁸

Why Was The Falklands Conflict Ever Considered A ‘Close Run Thing?’

Given the outcome of the above analysis the question becomes why the Falklands War was said to be such a ‘close run thing.’ By echoing these words, Woodward had connected the Falklands victory with the The Battle of

Waterloo. His words probably reflect the rise in patriotism and the revival of national identity which occurred after the war, a phenomenon later known as 'The Falklands factor.' The Falklands stood out in a half century dominated by British economic and military decline. After two oil crises and budget cuts, Britain's population was searching for a new identity. The Falklands victory proved to many citizens that Britain was and would remain a great power. Margaret Thatcher captures this idea in her speech to the Conservative Rally at Cheltenham *"That is the Falklands Factor. We have proved ourselves to ourselves. It is a lesson we must not now forget."*⁵⁹

There is a tension however that exists amongst veterans about cost of the attainment of this 'national pride.'⁶⁰ The British armed forces had lost 225 men, six ships and 34 aircraft. The psychological damage to veterans was significant, with more committing suicide by 2010 than were KIA. The financial cost of the War had exceeded 1.5 billion pounds.⁶¹ The myth about a 'close run victory' then can be seen as one which aimed to commemorate the fallen, in a similar way that the 'Gallipoli myth' did for ANZACs.

Most likely however, the war was portrayed as a 'Close Run thing' in order to justify the force composition of the Royal Navy, in particular its aircraft carriers and fleet air arm. The British military had faced two years of heavy budget cuts, from which the Royal Navy would have been reduced to a local anti-submarine force. The recent commitment of Britain to two Queen Elizabeth Class Aircraft Carriers by 2020 illustrates the resonance of this message today. This 'close run' myth was perpetuated by international arms manufacturers, who wished to emphasise the role that their now 'battle proven' weapon systems

had played in the conflict. Recently there has been a revival in this idea, as the United States shows signs of Imperial overstretch indicating that it may not have the capability to assist in the Falklands if it was again contested.⁶²

The Falklands conflict was one which was fought at significant sacrifice to both combatant powers involved, yet, it was never a 'close run thing.' Argentine forces distinguished themselves in their valour and heroism under exceptionally trying circumstances but they did not have the capability to defeat the British, who enjoyed a technological, financial, strategic and tactical superiority from the start. The war then concluded for Britain with euphoria and patriotism and in Argentina with political unrest and revolt.

Yet this may not have been the case if Britain had not several decisive advantages. These were its nuclear submarines its economic power and military and logistical support from its ally the United States. The greatest factor however was not one which could be measured exactly: it was the superiority of the British personnel. This critical factor enabled them to overcome other weaknesses and display far greater resilience and coordination, to eventually prevail in the South Atlantic. ➤



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THE YAWNING CAPABILITY GAP: THE ADF AND 'BROWN WATER' WARFARE

COMMANDER IAIN JARVIE

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

US PRESIDENT ABRAHAM LINCOLN¹

Lincoln was praising 'brown water' sailors of the US Civil War. The United States has had an on-again, off-again affair with the ill-defined 'riverine' since Americans fought alongside the British in the amphibious assault (in a river) by Gen Wolfe and Admiral Saunders on Quebec in 1759, against the British for independence and on the bays and rivers of the north east during the civil war, during war with Mexico, against insurgents across the Philippine archipelago in the early 20th century, through to the Mekong Delta of Vietnam, and in its most recent form in Iraq. The US Marines taught Colombia's military how to conduct Riverine Warfare as part of counter-narcotics operations in the late 1990s and then handed the Riverine role to the US Navy. Despite this regularity of need, in nearly every conflict in which the USN has been involved, a 'riverine' capability has had to be developed ab-initio.

The dictates of the ADF's operating environment strongly suggest both a similar need and that it be an enduring one.

ENVIRONMENT & THREAT

The 'littoral' or 'green water' is mainly conceptual and is about the influence of the land on operations at sea and, in-turn, their influence on the land. The 'brown water' zone is a more enduring and direct interaction between land and water, best shown in the confines

of close coastal waters, estuaries, rivers, inland waterways and even large lakes and dams. But even this distinction requires another dimension. Littoral discussions usually centre on distances offshore. Take a large lump of ocean and butt it against a large single lump of land. This construct becomes less useful when we consider the Australian Primary Operating Environment (POE).

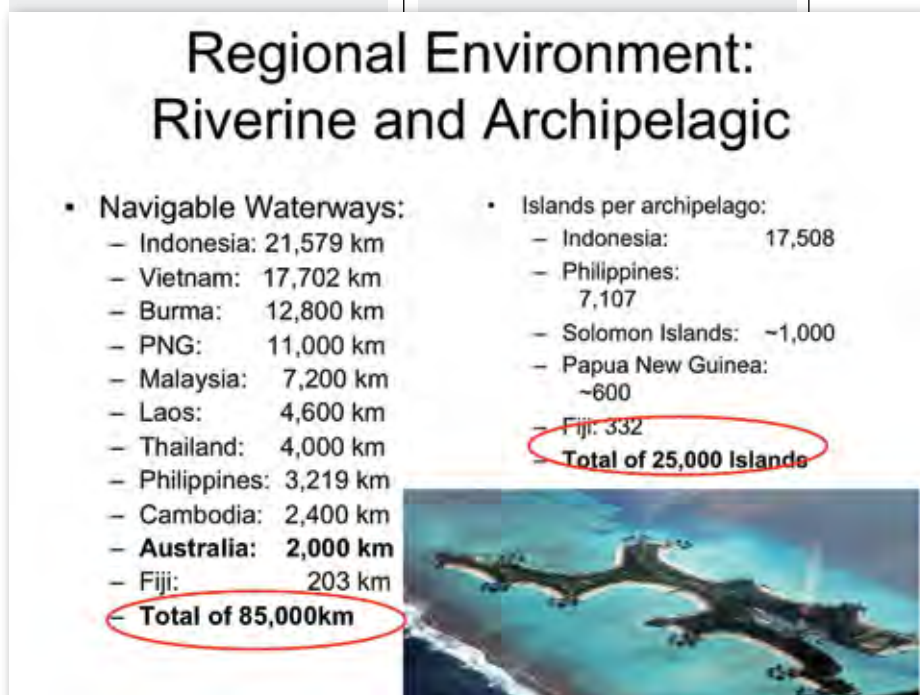
The ADF's POE is dominated by archipelagic waters, much more so than any other region of the globe. It is critical to understand that population centres are even closer to the water in the POE than elsewhere in the world, most notably Europe where most modern amphibious thought evolved², and that road transport is far

less predominant for the population. Nations in the POE comprise many dozens, if not hundreds of islands and reefs. Depths are constrained. Local commerce uses small coastal and inter-island craft. The ratio of waterways to roads in PNG, for example, is 1500:1 with over 11,000 km of navigable waterways. Fig. 1 illustrates these facts.

Of the world's 17 largest cities, 14 are on the coast and 11 of these are in Asia, with half the world's population within 100km (60nm) of the sea and the vast majority in the POE within 25km (15nm). The 'green water' gaps between islands and the 'brown water' rivers and estuaries are therefore a major part of the physical and tactical environment but the ADF does not apparently see the POE in this way. Perhaps this is an extension of what former CN, VADM Russ Crane and others have reflected on as Australia's 'sea blindness'³.

The ADF is directed to maintain a Maritime Strategy which exploits the approaches to Australia in her defence and in mutual defence of neighbours.

Fig. 1 - Characteristics of the POE.



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But do we understand our environment and what a Maritime Strategy means in our context? More specifically, what can the ADF do to exploit or control our environment?

WHAT MARITIME STRATEGY?

In describing an 'Australian Way of War', Dr Michael Evans argues that Australia has always seen itself as a continent, not an island and this is best evidenced by our view of the 'sea-air gap', a moat around the continent which someone one must cross to attack us rather than a manoeuvre space we can use in our defence and engagement of our region.⁴ The Defence White Paper describes this allegedly 'maritime strategy' but makes clear how poor our understanding of maritime strategy is, by implying we also need a continental one:

"While our approach requires principally a maritime strategy, the nature of our strategic geography is such that we will also have to use conventional land forces to control our approaches, to secure offshore territories and facilities, to defeat any incursions onto Australian territory, to protect bases from which our naval and air forces operate, and potentially to deny the adversary access to staging bases."⁵

Using land forces to control maritime approaches, secure bases and so is a maritime strategy. This 'gap' or 'moat' view of course also flies in the face of our 'expeditionary' naval and military history from Rabaul and Gallipoli onwards, most notably during the closing years of World War 11. The one time we have defended Australia against direct attack, we were part of an *archipelagic amphibious campaign* across most of what we now describe as our POE.

Despite all this, the RAN has traditionally focussed on 'blue-water' operations and its history is most prominently about the cruisers and destroyers which fought alongside British and American forces. But the Amphibious Warfare which was often the cause and beneficiary of those 'proper naval' actions are lesser known. We all know about HMA Ships *Sydney*, *Canberra* and *Australia*, but few know much about *Kanimbla*, *Manoora* and *Westralia* as part of MacArthur's Amphibious Navy, the 7th Amphibious Force⁶. Just as the ADF struggles to come to terms with Amphibious Warfare generally, so too do we ignore the geographic reality in which we are directed to operate.

EXPLOITING THE POE

Our strategic approach is that we cross a sea-air 'gap' in order to put a land force ashore (apparently this is then 'continental'), rather than use the sea and land as a seamless environment over which we achieve desired effects. Once that force is ashore, it ceases to achieve strategic effect and risks irrelevance and isolation from the rest of the land across the archipelago it sits within. Forces ashore, 'boots on the ground' are vital to 'war among the people' but we need to balance our mass with mobility and be cognisant of what a smaller, agile force *using* the sea can achieve relative to a larger force ashore. This is not an either/ or debate but one of balance.

Littoral Manoeuvre (LitM). LitM entered the ADF lexicon in Australia's Maritime Doctrine, because it was borrowed in order develop Australia's



Fig. 2 US Navy Brown Water Fleet during Vietnam

Amphibious Concept which describes the purpose and range of employment of the Amphibious Warfare (AmW) capabilities being realised through Joint Project 2048, largely Phases 4A/B and 3 with the Amphibious Assault Ships (LHD) and their organic LCM1E landing craft. Littoral Manoeuvre⁷, the use of the sea as an operational manoeuvre space, has parentage in the United States Navy and Marine Corps's *Operational Manoeuvre from the Sea* (OMFTS), now called *Expeditionary Manoeuvre Warfare* (EMW) and in the Royal Navy and Royal Marines' *Littoral Manoeuvre Concept*. From these, Ship-to-Objective Manoeuvre (STOM) has evolved as a tactic and 'Seabasing' as an enabling concept. This is maritime warfare in a truly joint, operational and tactical level sense, not simply an enabler for the conduct of land warfare.

Joint Land Combat (JLC). Outside of large-scale Amphibious Manoeuvre, the regional environment implies that any land force, particularly an enduring *expeditionary* one, should continue to exploit the green and brown water zones for manoeuvre and sustainment. There are few locations in the POE where a land force will not have a seaward flank as a minimum and in a majority of cases, be operating across multiple islands. The ability to control and exploit these waterborne, but arguably not 'sea,' lines of communication is critical. A reasonable hypothesis is that the vast

majority of populations reside on waterways and coastal fringes because these remain the most effective means of transportation and commerce. One way to avoid roadside IEDs on these few roads is to go cross-country. Now we need to realise that this includes the water.

LITTORAL EFFECTS

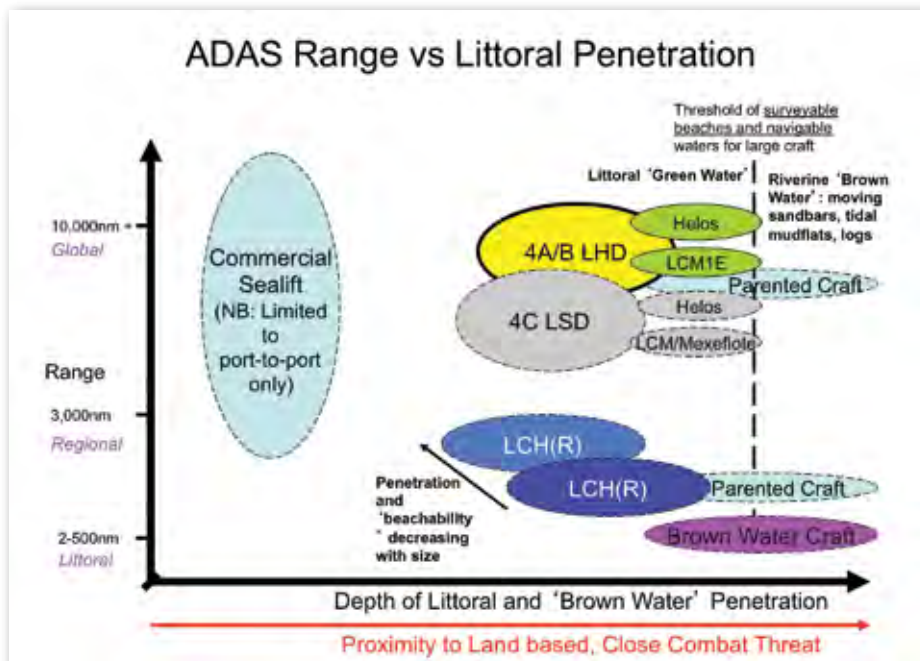
"The goal of naval thinking today should be to build awareness from the blue water to the green water to the brown water, in an integrated battle space. The maritime environment is more complex now. You have to put riverine into this bigger picture."⁸

Rear Admiral Donald K. Bullard
(USN) Commander Naval Expeditionary Combat Command
April 6, 2006

The requirement then is to achieve enduring effects in the littoral. This does not necessarily imply permanent presence but the ability to penetrate the littoral where and when desired and the nature of that penetration is also varied.

Being doctrinally correct is challenging in this domain, particularly in the ADF where the lexicon is limited. Clearly a '*manoeuvre*' effect, that is, to achieve tactical combative effects on an adversary is needed. So too is '*mobility*', or the tactical movement of forces which then achieve the tactical manoeuvre. '*Sustainment*' of the distributed force is then crucial and *force protection* is then required over assets conducting these mobility and sustainment tasks.

Various nations have approached this requirement from different directions and with differing emphasis dictated by their particular needs as well as, perhaps parochially, along Service lines. The easiest way to summarise these sorts of effects however is to examine the US Vietnam experience.



Case Study. The US military's experience in Vietnam is an excellent case study as the environment has certain similarities to the POE. In Vietnam the physical and tactical environment generated five different craft types. Boarding operations in the inshore zone were beyond the range of frigates and a specialist craft was developed. This role is now addressed by RHIBs but these are only present with their parent major fleet unit (MFU). Fire Support craft were developed from converted LCM 6. No such capability is currently available in the ADF. Troop variants with ballistic protection were also required.

Troop movement today is largely in helicopters or in some form of protected mobility vehicle. There is no waterborne equivalent in the ADF. Specialised craft to support SEAL operations were also developed. While the SF ADRHIB may meet some of these roles, the suitability in the riverine environment is unassessed; however the fact that the USN operates both the AD RHIB and the Special Operations Craft (Riverine) may be germane.

LITTORAL PENETRATION

Basic physics as applied to ship design has meant that if you wanted to cross an ocean safely and effectively, you built large vessels. If you wanted to beach, you placed these larger vessels at great relative risk and significantly reduced your choice of beaches. Maximising beach access meant having large ships carry smaller landing craft and in 1943 the first well-dock was at sea. If you wished to further exploit the shallow, unsurveyed, changeable and confined brown water zone, small craft were needed. This tension between range and 'littoral penetration' both in depth and persistent presence or effect is an enduring challenge. Figure 2 illustrates the place and effects various vessel types, specifically under Joint Project 2048, the 'Amphibious Deployment and Sustainment (ADAS) System' can achieve. The future phases indicated by dotted lines are yet to be developed and the impacts on solution implied by the degree of penetration desired are highlighted.

Riverine Warfare occurs where the sea and inland waters are an enduring part of the tactical environment rather than a place of transition. It has been variously defined but the following is

Fig. 3 - ADAS Range vs Littoral Penetration

THE YAWNING CAPABILITY GAP: THE ADF AND 'BROWN WATER' WARFARE

perhaps the most apposite.

Operations conducted by forces organised to cope with and exploit the unique

characteristics of a riverine area, to locate and destroy hostile forces, and/or to achieve or maintain control of the riverine area. Joint riverine operations combine land, naval, and air operations, as appropriate, and are suited to the nature of the specific riverine area in which operations are to be conducted.⁹

For the purposes of this paper, the same argument is applied to the narrow and sometimes shallow stretches of archipelagic 'green' water between islands where major fleet units are constrained or cannot operate.

CURRENT SITUATION

Joint Project 2048 Phase 4 A/B delivering the Amphibious Assault Ships (LHDs) and Phase 3 providing up to 12 LCM1E for ship to shore assault craft roles are the only currently funded phases of the ADAS system delivering amphibious capability. Whilst at the leading edge of modern conventional landing craft capability, these will only be employed within the LHD system and not available for independent operations conducted by the LCM8. Originally Ph3 was to replace a range of effects represented by LARC V, LCM8, LCVP, lighterage and LCH but only the LCH effect is currently being addressed as JP2048 Phase 5. This implies some scope challenges to the LCH Replacement as it is unclear whether the capabilities deemed necessary in the past are no longer so. Phase 5 "LCH Replacement" will perform intra-theatre limited amphibious operations and administrative sealift with a greater ocean-going capability.



REQUIRED EFFECTS

In order to achieve domain awareness, security and tactical effect in the 'green and brown water' zone, three core capabilities are required.

1. Intra-theatre manoeuvre and sustainment capability. Intra-theatre manoeuvre and sustainment is the primary task of LCH Replacement but this project cannot address the full environmental range, particularly the shallow rivers and estuaries and poorer beaches, unless it adopts a "system of systems" approach. With only six large vessels it is unlikely to meet the need for concurrent, enduring operations as well as support to contingencies and raise / train / sustain activities, especially if also picking up former LCM8 roles. The LCH(R) will necessarily be a large vessel in order to conduct open ocean transits and will therefore be of limited utility in shallow rivers and estuaries.
2. The potential solutions however may be able to 'host' smaller craft. This means that the LCH may be seen as comprising a systems solution which can operate as either the LCH acting as only a strategic deployment means into theatre for small craft or operating with the LCH as a mother-ship by using perhaps several LCH as a FOB for Cdo Coy Gp scale operations and launching



smaller craft over the ramp. If a conventional Combat Team had access to small craft this would apply equally. Use of ships like *HMAS Choules* and larger landing craft as a floating / mobile FOB for small craft was well-developed in Vietnam and is SOP for the Royal Marines today. The logistic task previously performed by LCM8, before their means of strategic transport into a theatre (LPA/LSH) was removed, could continue with life-extended LCM8 or a replacement but only if their transport was resolved.

3. Deployable Tactical Manoeuvre (Riverine) Capability. Independent Tactical Manoeuvre craft are a new capability although arguably Commando Watercraft, Special Forces Air-Drop RHIB (SF ADRHIB) and the Zodiac F470 capability previously used by Assault Pioneers possess some of the lower-end qualities required. The ability to insert and extract light vehicle or foot patrols, to provide direct fire support to conventional and special forces, to exploit and patrol the rivers,

Fig. 4 – Finnish Uisko and Jurmo Classes

estuaries and reef-bound waters is a common aspiration among many amphibious forces.

4. The Vietnam example demonstrates that at a minimum, fire support, troop / patrol and logistic functions need to be addressed. Arguably a separate C2 function is needed. It is difficult to satisfy all with the one hullform with the principle discriminator being between small combatant craft and larger logistic craft when a vehicle is a required load. As soon as a vehicle larger than a quad bike is specified, the craft becomes larger and less likely to satisfy fire support and patrol scale roles. Common to all however is the need to use speed and manoeuvre as part of the self-protective effect, much like a helicopter. Some resistance to waterborne and riverine IEDs and ballistic protection against small arms is certainly desirable but the same practical limits apply as they do to a helicopter.
5. Force-Protection Capability. Australia's Amphibious Concept (AAC) articulates the aspirational tactic of Ship-to-Objective Manoeuvre (STOM). STOM aims to minimise the pause at a beachhead and to proceed to tactical objectives directly, to take the beach 'in-stride' and to do so from over or just under the visible horizon in order to maximise surprise and force protection of the LHD and escorts. This however implies long transits on the surface assault landing craft, through complex waters in both navigational and threat terms.
6. The ability to achieve local domain awareness and to interdict threats to the landing craft implies capability beyond the escorts offshore and the landing craft



Fig. 5 – Swedeship 'Fast Supply Vessel' for Abu Dhabi Navy

themselves. The base requirement would include a high-speed, protected hull with sensors and stabilised weapons able to detect, track, identify and prosecute potential threats, particularly asymmetric. These would need to be coordinated with the wider surface warfare and maritime force protection effort and deconflicted with the landing force ashore. Any synergy between the solution for this and a Riverine capability is worth exploring.

INTERNATIONAL APPROACHES

Scandinavia. With the end of the Cold War, several Scandinavian navies have also shifted from a coastal defence posture to an expeditionary role but found that their experience in the close littoral of their fjords and archipelagos is especially relevant. The Swedish CombatBoat 90 is in export globally in many variants. The Finnish *Jurmo* Class is a similar design. At Fig. 4 a *Uisko* Class variant of *Jurmo* hosting a stabilised twin 120mm mortar fire support variant and a *Jurmo* troop variant are shown.

Perhaps more suited to logistic tasks and tactical mobility for elements such

as Regional Force Surveillance Units, the 'Swedeship' design for the Abu Dhabi Navy is a larger scale capability and therefore more challenging to deploy but of greater capacity.

Scandinavian development of hovercraft, largely to counter ice constrictions but equally relevant in the coral and mangroves of the tropics are relevant in the POE. While lightly armoured they provide unique flexibilities for getting stores and personnel ashore dry and across a vast range of beaches denied to conventional craft. Unlike their larger USN cousin which uses gas turbines, these are relatively simple and cheap craft. Fig. 6 shows a Finnish LCAC-M.

United States. Former US Navy Chief of Naval Operations, Admiral Mullen put USN requirements succinctly;

We need a fleet that can operate at the other end of the spectrum... We need a green water capability and a brown water capability... I want a balanced force in every sense of the word. I believe our Navy is missing a great opportunity to influence events by not having a riverine force. We're going to have one.¹⁰

The US has in recent years reinvigorated its 'Riverine' capability

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largely dormant since Vietnam. The Small Unit Riverine Craft (SURC) is operated by the USN's 1st Riverine Group and has been effective in Iraqi dams and waterways and in counter-drug operations in South American rivers.

The USN has also recently acquired a variant of the CombatBoat (CB)90 for the Riverine C2 role. It is important to note that these two craft types are usually employed as a battlespace *system* with Tactical UAV and close air support linked to the craft with their crew trained as JTAC and able to coordinate joint fires in support of their mission.

The USN is developing concepts around the Joint Multi-mission Expeditionary Craft (JMEC). The Northrop Grumman prototype at Fig. 8 demonstrates a concept for a common high speed aluminium hullform with inherent ballistic protection and available in troop, C2, fire support and utility /cargo variants.

United Kingdom. The UK has recently acquired the Offshore Raiding Craft (ORC) in troop and fire-support variants. These have been successfully employed in Iraq and Africa. While also employed in a Force Protection role for the Landing Craft in amphibious operations there are plans for a replacement to release these to their core role.

In addition, the need to operate in areas of large tidal zones, mudflats and shallow waterways have also seen the RM develop small and medium air cushioned landing craft (LCAC-S and LCAC-M). Fig.10 shows two LCAC S on the beach in Iraq. In Fig. 11 three LCAC (S) are embarked as deck cargo in an LSD(A), a sister ship to HMA *Choules*, ready to be craned into the water.

CONSIDERATIONS

Major Systems. The fact that there is a close link between Amphibious and Riverine Warfare means that the JP2048 ADAS system could logically be designated as the parenting program.

If ADAS is not considered holistically, elements become disjointed and interfaces not well understood or developed. An obvious example is in acquiring small craft with no view as to their means of strategic transport.

Each requirement has a common need for deployability by sea and / or air. These are largely determined by the lift platform's capacity in terms of material handling, space and weight. Beyond approximately 30 tonnes, heavy cranes or specialised davits become the norm. Ability to tow on trailers will be dictated by the selected prime-mover. Any implied towing requirement will add a liability to Army's Land 121 vehicle project. The SURC gives an indication of scale.

In terms of strategic deployment, craft fitted with kick-stands or stilts as seen in Fig. 11 below for *Jurmo* boats, can be carried (sacrificing LCM1E) in the LHD and LSD dock, or as vehicle or upper deck cargo (at the sacrifice of vehicles) if under 16 tonnes and moved by overhead gantry crane.

Basis of Provisioning. The range of effects required will determine whether one common hull like the JMEC or specialised hulls with perhaps some systems commonality are required. Obvious commonality opportunities include weapons stations, BMS and radio equipment, propulsion and auxiliary systems and sensors and navigation systems.



Fig. 6 – Finnish Navy LCAC

Quantities required will also be determined in part by any multi-rolling and concurrency requirements.

Personnel and Individual Training. There is a clear synergy between the tactical roles envisaged, the expertise being developed to operate the LCM1E assault craft and the Boatswains Mate category's current competencies in high speed, water jet RHIB operations, OTH navigation and small arms expertise. Equally Army's Water Transport trade has a wealth of expertise in the logistic and independent operations domain and tactical work through support to Special Forces watercraft.

As Nick Brown has recently noted,¹¹ the rise in small boat capabilities internationally has come from different needs, but the complexity and level of professionalism required just at the basic levels of safe boat handling of small craft at sea has always challenged training standards, but to add the tactical employment, maintenance of situational awareness and management of onboard surveillance, counter-IED and



Fig. 7- Small Unit Riverine Craft (SURC)

electronic countermeasures and weapons systems raises the bar. Neither Navy nor Army should underestimate it just because, 'we know boats'.

The operation of combatant craft in the complex, littoral maritime domain and the maintenance of situational awareness is a clear overlap between traditional naval roles and procedures and their extension ashore. The decision to place all roles under one organisation, to split them or handle them jointly has pro- and counter-arguments to consider. Individual training and the sustainability of trade and career structures will figure heavily.

Facilities, Supply and Support. The decisions on commonality, organisational splits or consolidation and therefore basing and crewing will influence the facilities and sustainment views. The LCM1E will be maintained by the parent LHD SPO. Navy RHIBs are provided and sustained under a commercial arrangement. LCM8 and LARC V are managed by Army Marine under another SPO.

Organisation. There is an opportunity to group the various effects under a common organisation or allocate them closer to their parent tactical and logistic functions and each has its merits. Perhaps the easiest example of an approach is the UK's 1st Assault Group, Royal Marines (1AGRM). This organisation addresses the needs of the 'L' ships for organic landing craft by providing permanently embarked 'Assault Squadrons' comprising LCVP and LCU landing craft, an Amphibious Beach Unit and a C2 structure embedded within the ship. This has been adapted for Australia's LHDs. Separately, 539 Assault Sqn, Royal Marines (539 ASRM) provides *independent manoeuvre* to the Comd of 3 Cdo Bde RM. A range of craft from rigid raiders to large LCU and including small hovercraft address a range of effects.



Fig. 8 Northrop Grumman JMEC

These are largely reliant on deployment through LSDs (and commercial sealift shipping which is prevalent in Europe) but much less in our region and have a degree of capacity to be self-sustaining, then become an element within the Bde Gp. Separately, the British Army's 17 Port and Maritime Regiment operates some heavy landing craft and lighterage for purely logistic tasks.

Command and Management. There is growing interest in 'brown water' warfare resulting in tactical and doctrinal development and these sit formally under the broader

Amphibious Warfare domain in the US, NL and UK and collectively in NATO. There is therefore ready access to extant and evolving doctrine and tactics. It would be logical to place these requirements under a similar joint governance model in the ADF, even if sub-systems might reside in separate single services.

Collective Training. The manoeuvre and logistic capabilities envisaged are logical extensions of the current domains but will require new models for training and certification, much as is the case for Amphibious Warfare



Fig. 9 – Royal Marines ORC with LCVP. Troop and Fire Support variants shown

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generally. Separate and independent roles may draw on common Fleet and FORCOMD collective training and certification agencies and processes but applied to their specific roles.

CONCLUSIONS

The ADF exhibits a certain blindness to the characteristics of its operating environment and as such a significant capability gap exists in the 'brown water' domain. The conduct of both amphibious operations as well as enduring expeditionary operations in the POE and beyond requires the ADF to maximise the range of effects it can achieve. A clear gap exists at the small-craft end of the spectrum in the extensive 'brown water' areas of the POE. A range of linked capability options, with similarly linked organisational aspects, are available to address these. Wider allied interest and current efforts in development will assist the ADF in its own considerations as well as offering materiel solution options and is an opportunity to address them together. 🐼

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Fig. 10 – LCAC(S) on Iraqi beach



Fig. 11 – Three RM LCAC(S) secured on an LSD(A) deck



Fig. 12 Small Unit Riverine Craft (SURC), trailer and prime-mover / repair vehicle



Fig. 13 – Jumbo Class in a Dutch LPD Dock

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HMAS Ballarat departs Sydney Harbour to participate in Fleet Concentration Period 2009





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Assessing the 2009 White Paper and its Outline of Force 2030 as a Maritime Strategy in the Light of Corbett's 'England In The Seven Years War'

BY MAJOR SCOTT MCPHERSON

The Defence White Paper 2009 (WP09) *'Defending Australia in the Asia-Pacific Century: Force 2030'* provides strategic direction to the ADF, and outlines the use of maritime strategy to achieve national security and regional stability. Known as Force 2030, this strategy is an ambitious approach, which aims to acquire and develop a potent force for the nation.

This essay will assess WP09 and its outline of Force 2030 as a maritime strategy in the light of Sir Julian Corbett's *'England in the Seven Years War'*. Importantly, assessing WP09 against Corbett's writings will demonstrate how key aspects of maritime strategy are resident within Force 2030, and will draw out the relative strengths and weaknesses of the Australian strategy.

This essay will also outline examples from the Seven Years War to highlight

Corbett's key strategic findings that relate to the 'functions of the fleet' (ie. the sea-borne or maritime force). Central to this are three strategies (herein referred to as tenets), which include firstly being able to support or obstruct diplomatic effort; secondly, to protect or destroy commerce; and thirdly to further or hinder military operations ashore.¹ A fourth key aspect is the coordinated use of the entire maritime force to achieve strategic outcomes.

Force 2030- as a maritime strategy- will be assessed against each of these areas to highlight strengths and weaknesses in the Australian approach, and additional context will be provided by way of recent operational experiences (which have shaped Force 2030). Importantly, this essay will also highlight future challenges in order to stimulate further debate on this topic.

AUSTRALIA'S FORCE 2030 MARITIME STRATEGY

The ADF's principal task of deterring and defeating attacks on Australia 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.² Force 2030 -as the centrepiece of the government's maritime strategy- relies upon force structures that permit operations from the sea in order to conduct war, deter conflict or help regional partners. This force is built upon maritime forces, land forces, air power, strategic strike, and Joint enablers (to name but a few), which provide the government with a range of military contingencies.³



Royal Australian Navy boarding officer, Lieutenant Bradley Morgan, shakes hands with East Timor Defence Force (F-FDTL) officer, Lieutenant David Santos, after boarding party practice onboard HMAS Albany, off the north coast of East Timor (Navy photo)

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Importantly, WP09 outlines that Force 2030 is not purely a warfighting force, but a force that is capable of achieving the government's will through a range of actions that achieve diplomatic and military endstates.

TENET ONE - SUPPORTING OR OBSTRUCTING DIPLOMATIC EFFORT

Corbett illustrates 'an obstruction of diplomatic effort' as an action by the English to position their naval and military (ie. land) forces in an objective area, while seeking to gain advantage through working with a coalition. Importantly, these efforts attempted to undermine the will of the enemy not through direct fighting, but through advantageous positioning of a maritime force. The English demonstrated this when they formed an alliance with the Portuguese, and strategically placed their maritime forces in key areas, thus dislocating the French battle fleet and preventing them from dominating the Mediterranean Sea.⁴ While this may seem rather simplified in the modern context, the root of its cause still holds true. A maritime force is an equally effective tool of diplomacy in 2011 as it was in 1756.

A recent Australian example of using a maritime force to support diplomatic efforts occurred in East Timor in May 2006. Otherwise known as 'gunboat diplomacy', the presence of a maritime force, operating as a coalition of the willing off the coast of Dili, demonstrated the Australian government's resolve in supporting diplomatic efforts, while obstructing diplomatic efforts of adversary groups.⁵ This example highlights the how judicious use of even a small maritime force can shape diplomatic efforts and achieve a positive diplomatic effect, such as coercing parties to the negotiation table, which reinforces Corbett's first

tenet.

The Force 2030 maritime strategy and its inherent capabilities will be very capable in supporting and/or obstructing diplomatic efforts through coalitions and maritime forces. From a coalition-building perspective, one of WP09's themes centres on the employment of the ADF within coalitions, either as a partner or as the lead nation.⁶ From a capability perspective, Force 2030 elements operating in the maritime domain are capable of command and control of a large maritime force using the new Canberra Class ships, which include state of the art command and control systems. Therefore, the ability for Force 2030 to operate effectively within a coalition environment enhances the likelihood of achieving diplomatic support or obstruction, which further builds upon Corbett's requirement to effect diplomacy.⁷

Australia's emerging amphibious capability also provides an excellent means to obstruct diplomatic efforts by acting as a deterrent to conflict. The utility of a heavy maritime presence (ie. an amphibious force) positioned off a coastline can achieve great diplomatic effect – indeed more effectively than naval ships or aircraft alone. This was highlighted by General Colin Powell in 1991 when he surmised that 'lying offshore, ready to act, the presence of ships and Marines sometimes means much more than just having air power or ship's fire, when it comes to deterring a crisis. And the ships and Marines may not have to do anything but lie offshore.'⁸ The ability of ADF expeditionary elements to stage off the coast and effect diplomatic change reinforces this argument, and supports Corbett's first tenet in a modern sense.

Force 2030's maritime elements will also be a powerful tool in enhancing diplomacy through defence agreements and bi-lateral arrangements with regional partners. While this style of

diplomacy is not highlighted in Corbett's writings, it is nonetheless a natural extension from his theory of supporting or obstructing diplomacy, albeit within a peaceful environment. A recent example of this was the ADF's response to the 2009 Sumatran earthquake, which allowed the Australian government to utilise its expeditionary orientated force to provide rapid support to our regional neighbour, thus enhancing regional diplomacy and strengthening international ties.⁹ Indeed Force 2030's structure will enable greater diplomatic efforts through additional strategic lift aircraft (C-17) and the improved amphibious fleet, which is able to hold large amounts of disaster relief stores, produce large amounts of fresh water, and house a large amount of construction equipment.¹⁰ The continuing increase in expeditionary forces under Force 2030 therefore supports diplomatic ties within the region, and expands upon Corbett's basic tenet of supporting or obstructing diplomacy.

The combination of these diplomatic effects under Corbett's first tenet highlight the inherent strengths within the Force 2030 maritime strategy – particularly as a force for implementing diplomacy.

TENET TWO – PROTECT OR DESTROY COMMERCE

Within the Seven Years War context, Corbett recognised that undermining the economies of England's adversaries would weaken their will to fight, as their fighting power co-depended on their resource base and ability to trade. In Corbett's words, 'trade and maritime force depend on each other, and the riches which are the true resources of a country depend upon [its] commerce.'¹¹ In this tenet, Corbett highlights the fundamental need to protect one's own commerce, and destroy an adversary's

commerce. The tenet was practised widely throughout the Seven Years War, particularly in 1756 when Rear Admiral Townshend established a form of 'sea control' off the coast of North America, which protected English commerce (through providing safe passage), and denied the line of passage between France and its colonies in the West Indies. This approach undermined French trade routes and facilitated the destruction of many French commercial vessels.¹² Another method of destroying commerce can be seen in the raid on St Malo, where raiding forces attacked ships, wharves and stockpiles at the port, thus destroying a high number of trade commodities and trade shipping for the region.¹³

Corbett's second tenet can be found in the Force 2030 maritime strategy, which identifies sea control as the key component in Australia's sea-air gap denial. As outlined in WP09, 'our military strategy will be a proactive one in which we seek to control the dynamics of a conflict, principally by way of sea control and air superiority, and also by defeating hostile forces in their bases, in staging areas, or in transit. We will use strategic strike if we have to, and land operations in our approaches.'¹⁴ While the WP09 does not explicitly mention attacking commercial shipping, the establishment of naval blockades and sea control infers the denial of commercial shipping where operationally required. Case in point for protection of commerce is the current anti-piracy operations in the Gulf of Aden, where Australian maritime elements conduct commercial shipping protection.¹⁵ Recent counter-commerce operations include ADF maritime elements operating within the Multinational Interception Force in 2002, which enforced economic sanctions (including denying commercial shipping where necessary) in the Persian Gulf.¹⁶ While these

examples are not as extreme as Corbett's descriptions (because they were not conducted under a declaration of war), this style of operation still undermines the adversary's riches, and can be described as a modern demonstration of Corbett's second tenet.

In a future setting, and particularly in a time of war (as unlikely as that is), Force 2030 is well positioned as a strategy to deal with protecting and destroying (or denying) commerce in Australia's sea-air gap. The Future Joint Operating Concept outlines that the maritime elements operating under the Force 2030 guidance will establish Joint sea control, air control, strategic strike, and secure and maintain freedom of navigation through trade routes, thus reinforcing Corbett's second tenet.¹⁷

Despite the need for sea control doctrine (as a fundamental component of the second tenet), some commentators argue that achieving sea control is not viable. Hugh White argues that the new Air Warfare Destroyers (AWDs) should only be used for sea denial (ie. denying enemy use of an area of sea), as sea control is far too complex and costly.¹⁸ However, this approach would only allow Force 2030 to fulfil half of Corbett's second tenet – destroy enemy commerce. If Australia is to maintain its trade routes (which are critical to its economic strength), then sea control is required, thus justifying the high cost and complexity of this task.¹⁹ The same argument can be made for other costly capabilities under the Force 2030 acquisition plan. Without an appropriate suite of layered capabilities, Force 2030 will not be able to achieve sea control, and will not achieve the basic requirements under Corbett's tenet of protecting and destroying commerce.

Force 2030's focus on sea control, and the range of advanced maritime capabilities within the strategy clearly demonstrate the ability of Force 2030 to affect commerce. While there are



clear strengths (and some weaknesses) within the Australian maritime strategy, the combined effects achieve Corbett's second tenet, and advances its applicability into the modern era.

Tenet Three – Further Or Hinder Military (LAND) Operations Ashore

Corbett's third maritime strategy tenet is the need to further or hinder military operations ashore. Arguably this is where Force 2030 faces its greatest challenges, as it strives to convert a land-centric Army to an organisation that thinks like a marine force.²⁰ English forces arguably faced similar challenges during the Seven Years War, and the judicious use of naval and military (ie. land) elements within a coordinated maritime strategy turned service limitations into stunning victories. The most notable of these victories was the successful English amphibious campaign in which a string of coastal towns in southern France were seized through a series of amphibious attacks.²¹ Corbett identified the importance of the

Operating from the sea to the land - Royal Australian Navy Doctor, Commander Peter Collins examines a Micronesian man (ADF photo)

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fleet in supporting military operations ashore, and preferably only against lightly fortified locations. A further example of supporting military actions ashore is the extensive use of rivers and waterways during the Quebec campaign of 1759. In this case, land force commanders utilised naval sloops to conduct reconnaissance and patrol the waterways around the area. This provided significant information to local commanders, which supported both land and naval operations.²² While this was conducted on inland waterways, this combined use of naval and military elements emphasises the importance of Corbett's tenet as part of a maritime strategy.

Force projection to support or hinder military operations ashore is unequivocal in the Force 2030 maritime strategy. WP09 states that 'amphibious and sea-lift ships, strategic (inter-theatre) and operational (intra-theatre) air lift, mounting bases and forward operating bases in northern Australia and our maritime and littoral environment... provide us with the ability to project military power throughout our primary operational environment and, on occasions, beyond'.²³ This statement provides a bold example of the intent of Force 2030, which not only satisfies, but also builds upon Corbett's third tenet.

While Force 2030's projection capabilities may look impressive, this development was borne out of earlier mistakes, particularly during the initial insertion into East Timor in 1999. According to Dupont, there were significant strategic and tactical lift limitations, which significantly delayed the deployment of Australian land forces.²⁴ This lesson has helped shape the ADF's current expeditionary mindset, including Force 2030, as demonstrated by the purchase of five C-17 heavy lift aircraft, and a three-fold increase in amphibious lift capability, thus providing the means to achieve

the third tenet of supporting operations ashore.²⁵

Despite these capability improvements, Frühling opines that the Force 2030 amphibious force is 'insufficient for decisive land operations, and would need to be withdrawn before the enemy mounted a counter attack to its landing'.²⁶ However, this argument does not consider the subordinate doctrine under the Force 2030 maritime strategy, notably ship-to-objective manoeuvre (STOM), and sea-basing.²⁷ Within STOM, the amphibious landing force is able to strike directly at the enemy's critical vulnerabilities, and will manoeuvre to avoid decisive engagement (which may include recovering to the sea), until conditions are suitable for decisive battle. Likewise, the sea-basing concept permits much of the force to conduct prolonged operations from an amphibious task group loitering off the coast, thereby reducing the risk from remaining onshore. Importantly, Force 2030 also exists in an era where contested landings are not conducted.²⁸ This philosophy was also identified by Corbett, who espoused the importance of strong naval forces and a weaker army, which were capable of using superior manoeuvre to defeat their opponent.²⁹ The combined

effects of maritime forces within the STOM and sea-basing concepts underpin the ability for Force 2030 to succeed in the littoral battle, hence reinforcing Corbett's third tenet.

To ensure that Corbett's third tenet can be met sufficiently, the 2014 White Paper should ensure that *all* amphibious force enablers are acquired. As highlighted during the Quebec campaign, the maritime force must make use of a range of watercraft that permit it to prosecute its mission in *all* maritime and littoral environments- not just into a ocean-facing beachhead.³⁰ While WP09 states that the force projection capabilities of Force 2030 are significant, it still lacks critical enablers. Given that our region is archipelagic by nature and contains over 85,000 kilometres of navigable waterways, independent landing craft and riverine craft are needed to provide sufficient mobility and reach to the maritime force. Additionally, given the relative paucity of suitable ports within the region, a requirement exists for an expanded portable wharf system, such as naval lighterage equipment.³¹ By providing the full range of amphibious enablers, Force 2030 will be more capable of furthering military operations ashore, thus building upon Corbett's third tenet.

*Timor-Leste
Battle Group VI
Commanding Officer,
Lieutenant Colonel
David Smith talks
with retired General
Peter Cosgrove at the
10th Anniversary of
Popular Consultation
awards ceremony
held at the
Presidential Palace in
Dili. (ADF photo)*



'Coordinating The Functions' And Modern Joint Operations

Corbett's description of the 'need to coordinate the functions of the naval and military elements' is a 1900s description of joint operations. Corbett highlights the use of coordinated functions during the Quebec campaign, where naval and military forces regularly operated in concert- an example of this being the use of naval gunfire support for an advancing land force. Further examples of 'joint' operations occurred during amphibious landings along the French coastline, in what Corbett described as the ability to control 'the diverse functions of the fleet in full or coordinated activity' within the maritime strategy.³²

The Force 2030 maritime strategy (and indeed the entire ADF's joint warfighting concept) reflects Corbett's joint approach; insofar that WP09 states that 'the ADF must be joint, integrated, [and] highly deployable'. While the ADF has come from a past where services often preferred operate independently, operational experiences since 1999 have demonstrated the ever-increasing fundamental joint nature of the ADF. Indeed, WP09 recognises that 'for a relatively small force like the ADF, joint operations are the only way to deliver decisive outcomes'.³³

Hendley applies this argument directly to the Force 2030 maritime strategy, stating that 'archipelagic warfare is a creature of its own, with an interdependence of maritime, land, air and littoral warfare of an order of magnitude more intimate than in any other type of theatre. Consequently, existing doctrines cannot be simply run in parallel and expected to work'.³⁴ The developing joint culture within the ADF will naturally transition into the Force 2030 maritime strategy, and the development of the force's command and control systems will takes the joint approach one step further- thus

reflecting an advanced version of Corbett's theory of 'coordinated fleet functions'.³⁵

As a maritime strategy, Force 2030 has inherent strengths that are demonstrated against Corbett's three tenets and his principle of coordination. The ability for Force 2030 capabilities to operate as a coalition leader or partner in the region, and the ability for the force to provide a deterrent effect makes it a strong tool for supporting or obstructing diplomacy. Similarly, the advanced technological nature of the force, and the force's construct make it very well suited to providing sea control in support of Australia's economic interests. While these efforts may be prove to be costly and complex, Force 2030's ability to support or destroy commerce in the maritime environment is substantial, thus supporting national trade routes.

While the ability for Force 2030 to project ashore still presents some limitations in terms of smaller watercraft capability, the overall projection capability is second to none in the region. The planned Force 2030 capabilities will allow the ADF to successfully support land operations ashore, as well as hinder enemy operations. The force will further expand on Corbett's third tenet when the ADF's STOM and sea-basing concepts are developed through the coming decade. These endeavours will be enabled through effective joint integration of the maritime force, which will also further the ADF's inherent strength in joint war fighting.

Highlighting WP09 (and its outline of Force 2030 as a maritime strategy) against Corbett's principles not only paints the strategy in a positive light, but clearly demonstrates how the Australian maritime strategy builds upon the tenets and principles that enabled English

victories during the Seven Years War. 🚢



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SUBMARINES, ASW AND THE SOUTH CHINA SEA. A CAUSE FOR CONCERN

BY PROFESSOR GEOFFREY TILL[†]

It is hard to avoid the fact that these days naval development has become a hot topic in the Asia Pacific region amongst the media and in academic circles. The notion that a naval arms race is developing is bandied about and there is a lot of speculation about what it might mean for an already complicated situation in the South China Sea and for stability in the Asia-Pacific region generally.¹ The debate focuses particularly on the development of submarines in the region, especially around the South China Sea. This raises a couple of issues, firstly, the implications of the steady build up of China's submarine fleet in the area and of the United States' response in terms of strategic ASW, and secondly what is behind the accumulation of submarines by the other smaller powers of the region, and what this might mean for the area's strategic stability.² In particular, is a destabilising submarine race developing?

THE SUBMARINE BUILD-UP

First of all, there is no doubting that China and its neighbours *are* building up their submarine capacities, as part of the substantial naval modernization programme taking place all around the Asia-Pacific.

The Chinese submarine force now stands at some 60-70 units including at least six nuclear powered SSNs and over 50 diesel-powered SSKs; the newer classes in both categories such as the 6000 ton *Shang* class SSN and the *Song* and *Yuan* classes of SSKs represent a significant up-grade of Chinese submarine capabilities and has raised a number of operational and

strategic concerns for the US as well as other powers in the region. Although sophisticated wake-homing torpedoes have been developed (particularly effective against vessels with large wakes – like aircraft carriers), Chinese submarines (such as the *Kilo* with its *Sizzlers*) appear to be optimised for shooting ASCMs not least the new H-6K/M cruise missile which suggests a developing capacity to reach as far as Guam, a possibility that might require the hardening of military facilities there.³ The Chinese Navy's focus on the procurement of submarines is entirely consistent with a strategy of sea denial intended to defend the maritime approaches to China against intruding naval forces bent on attacking the mainland. It is also seen as evidence of a desire to deter external intervention in any future conflict with, and/or over, Taiwan.

The comparatively modest Chinese SSN programme, and the development of an ambitious new nuclear submarine base at Yulin on Hainan, suggests an interest in operational speed and a capacity to range well beyond China's immediate area. Even so, the bulk of China's submarine force is especially suited for operations within the First Island Chain. China's SSBN programme has only made slow progress.

Anxieties about China have recently led to a deceleration in Japan's submarine-replacement rate, which will eventually lead to an increased force of some 22-24 submarines. There has even been talk of Japan's acquiring an SSN on lease from the US. The Japanese are placing an increasing



Capable neighbours - a Song Class submarine of the Chinese Navy

emphasis on building up their ASW capacity and take Chinese capabilities as a benchmark of what is required. Hence the JSMDf now has 30 undersea SOSUS-type arrays connected to 14 shore stations, ideally deployed to monitor Chinese submarines transiting from the East China Sea to the wider Pacific Ocean.⁴

India's plans are more problematic. It currently maintains 16 SSKs but has an ambitious submarine programme of modernising existing forces, while developing new ones in order to serve standard sea denial/control purposes. In 2007, the upgraded Mazagon dock

Aircraft Carrier USS Theodore Roosevelt, background, joins a multinational battle group formation including the People's Republic of China Navy multi-role missile destroyer Guangzhou and the Pakistan Navy frigate PNS Badr



[†] This paper was delivered to the ANI Goldrick Seminar 6 February 2012.

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in Mumbai began the construction of the first of six advanced French-designed *Scorpene* SSKs and the navy has launched another project for six locally produced submarines. Admiral Mehta was particularly keen for India to develop more of an all-round indigenous submarine capability, but for the time being it will need to rely heavily on foreign expertise.⁵ According to India's Comptroller and Auditor General's report, project delays, however, are likely to mean, that given the need to de-commission its older submarines, the Navy might have to operate with less than half its current active submarine fleet. To compensate for this serious shortfall India is in the market for an additional six SSKs with air-independent propulsion under Project-75 India, but that project has also run into trouble.⁶

Additionally, Indian SSN/SSBN aspirations are expanding too. The country began its programme to develop an indigenous nuclear ballistic missile submarine project, the Advanced Technology Vessel [ATV] in the 1970s but only in December 2007, did Admiral Mehta, finally confirm the Navy's intent to take the nuclear deterrent to sea.⁷ India was helped in this programme by leasing 4,000 ton Russian 'Charlie 1' Type 670A SSN in 1988-1991, an arrangement which facilitated the design and build of its first SSN, *INS Arihant* which was launched at \$2.9 billion in July 2009, a major step in the country's naval and defence-industrial development; this submarine is expected to be the first of a class of five SSNs under this programme.⁸ *INS Arihant* is scheduled to commission in early 2012, and to be equipped with four K-4 x 3,500 km nuclear-tipped missile or 12 x K-15 *Sagarika* 750 km missiles and more such submarines are expected to follow. India is also in the process of leasing a much larger 12,000 ton *Akula*

II SSN from Russia, despite delays in repairs after the accident to the *Nerpa* in the Sea of Japan in November 2008, which killed 20 crew members.⁹

Finally current planning in the US Navy calls for 48 SSN, and centres on the successful *Virginia* programme, which most unusually is ahead of schedule and below budget,¹⁰ and which currently confers a considerable ASW advantage over China. The US Navy is exploring options for a later follow on class of much smaller nuclear submarines nonetheless capable of carrying a number of the smaller manned and unmanned platforms now considered essential for littoral operations, and is in the early stages of renewing its SSBN force.

As far as the main four naval powers of the region are concerned, it is not just a question of their developing their submarines, but of exhibiting an increasing tendency to use them robustly. A Han class submarine was detected in Japan's territorial waters in 2004, and five warships operated in close proximity to Chinxiao gas field in the East China Sea, an area disputed with Japan, in September 2005.¹¹

In November 2006, in an incident which some construed as a part of

China's preparations for a campaign of sea denial, a diesel-powered Song submarine surfaced within five miles of the *USS Kitty Hawk* battlegroup operating near Okinawa. Denying this was a deliberate part of their developing anti-access strategy against the United States, the Chinese claimed it to be nothing more than an accidental encounter, and that the submarine in question did not have the speed to trail the battlegroup. Perhaps in part because of their embarrassment at having been thus surprised [to the extent they were], and partly in a bid to prevent this incident turning into a crisis, the response of US Fleet Commander, Admiral Fallon was quite muted. He pointed out that the battlegroup had not been exercising its ASW capabilities at the time but if it had been 'and if this Chinese submarine came in the middle of this, then it could have escalated into something that could have been very unforeseen.'¹²

Nonetheless, American concern at these kind of developments has resulted in a significant shift in the deployment of its submarines to the Pacific from elsewhere and to a more public use of its SSGNs more recently.

INS Arihant
is expected to
commission this year
(Public domain)



Part of the reason for the strategic shift to the south-west announced by the Japanese 2010 Defence white paper has plainly been a concern for the consequences of a build-up in China's submarine capacity in the area.

The same kind of developments, though in more minor key can be seen in the developing submarine programmes of many other countries in the region. The ROK's acquisition of modern, medium-sized KSS II and the more capable KSS III suggest a step-change in that country's underwater capabilities, especially with the acquisition of Air Independent Propulsion systems¹³ [AIP] and the fitting of cruise missiles; some have even suggested that the ROKN explore the acquisition of nuclear propelled submarines eventually to replace its nine Type 214 submarines. To supplement its upgraded Challenger class submarines, Singapore has commissioned the first of two very modern *Archer* class *Västergötland* class submarines retro-fitted with AIP from Sweden.¹⁴ At the commissioning ceremony, Defence minister Ng Eng Hen noted that other Southeast Asian navies were cranking up their submarine programmes and said that Singapore would keep pace with these developments. Indonesia, Malaysia and Thailand are likewise developing or enhancing their submarine capabilities.¹⁵ Thailand has agreed in principle to buy two second-hand Type 206A submarines from Germany and in principle would like to acquire another four but parliamentary approval for this programme has yet to be won.¹⁶

Vietnam has ordered six Project 636 Varshavyanka (Kilo) submarines from Russia, part of an extensive package intended to revive its navy and coastal defence forces and to develop sea-denial capabilities that are clearly aimed at China.¹⁷ According to its



2009 Defence White Paper, Australia's submarine fleet is to be doubled to 12 boats, equipped with cruise missile, a similarly ambitious project given its past and present difficulties with the now very capable *Collins* class.¹⁸ Submarine numbers in the Asia-Pacific are expected to increase markedly over the next couple of decades, not least amongst the smaller and lesser naval powers where they are seen as a force equaliser.¹⁹ With this can be expected significant improvements in local anti-submarine warfare capacities. Developments here will include technological advances such as the future *Red Shark* 20 km range anti-submarine torpedo being developed for the ROKN, and tactical ones such as the Australian 'ASW Roadmap'.²⁰

BUT IS IT A NAVAL ARMS RACE, AND IF IT IS, WOULD IT MATTER?

Perhaps we should attempt first to explore the term to see what it really means. The notion of an arms race is famously ambiguous and the literature dealing with it is voluminous.²¹ The naval arms race between Britain and Germany in the days before the First World War is usually cited as a classic example of the *genre*. Its most intense period was 1909-1910, but it continued, more or less until the outbreak of

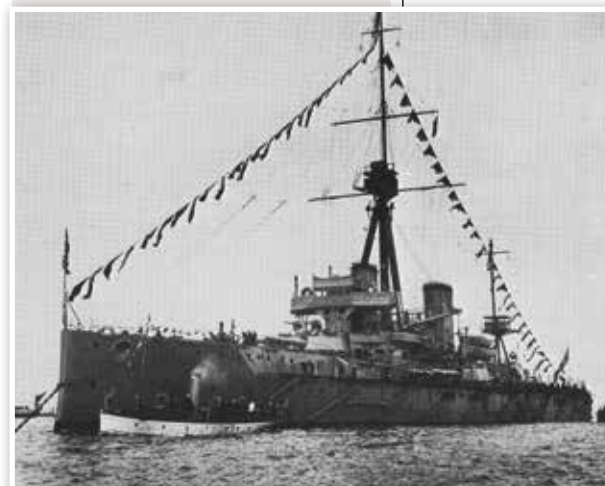
war and was characterised by an apparent competition between the two countries to build the new all-big-gun *Dreadnought* battleships and their more lightly armoured faster consorts, battlecruisers. The British started the process by constructing a brand new style of ship HMS *Dreadnought*, to a revolutionary design in 1905 and then ordering another 12 over the next 3 years [at 4 per annum].²² The Germans responded and the race was on.

Making use of this particular example, analysts have identified the seven deadly characteristics of a naval arms race, which to a degree distinguish it from ordinary processes of naval modernisation:

Firstly, naval arms development of the sort associated with arms races is driven mainly by perceptions of the external security environment rather than by domestic or technological

The now most-capable Collins-class
(Courtesy RAN)

HMS Dreadnought
(Tom Lewis collection)



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imperatives.²³ There were domestic political and economic benefits but they did not drive the process in Britain. The situation in Germany was more complex. There has been a long and frankly inconclusive debate amongst German historians about extent to which the German drive towards naval and military power was in fact driven by international pressures (*Aussenpolitik*) rather than internal domestic ones (*Innenpolitik*) that were more to do with the struggle between various groups for influence within the country.²⁴ But at the very least the external environmental has to be sufficiently competitive in nature for such domestic pressures to seem credible.

Secondly, an arms race involves conscious competition for political or military superiority between two rival hegemonic states, or coalitions. The resultant naval preparation is accordingly usually aimed against another specific state or coalition. Germany and Britain had each other in mind of course. France was concerned about Italy and Austria. Russia was determined to recover itself after its catastrophic defeat by Japan and was concerned about Germany. All the same, the European situation ended up as essentially bilateral.

Thirdly, bearing in mind that there is inevitably a competitive element to international relations, the high level of political tension often associated with arms races might seem a bit vague. It suggests a level of competitiveness significantly greater than what you might normally expect. So how might we measure it? Perhaps by the extent to which the use of lethal force between the protagonists remains a policy option? Thus the naval relationship of the US and the UK in the 1920s and 1930s would be seen as a naval competition not an arms race, because military conflict between the two

was inconceivable (except as a convenient force structure planning device). This was quite unlike the period before 1914, when major war was generally thought likely sooner or later.

Fourthly, abnormal intensity in style is another potentially rather vague characteristic of arms races but in this case we might try to gauge it by looking at: particularly high levels of defence effort (Britain and Germany devoted something like half of government expenditure to defence); or, in terms of the *quality* of what is being produced, transformational technology which offers the prospect of major competitive advantage (The *Dreadnought* rendered every other major warship obsolete almost overnight). Another measure of intensity might be particularly large increases in number, that is the *quantity* of what is being produced, which may also be a major source of strategic advantage. Finally the intensity of the competition might be increased by high levels of suspicion encouraged by conspicuous lack of transparency. From ambiguous evidence about the construction and accumulation of capital ships guns, engines and armour [and even some building starts before *Reichstag* authorisation] the British thought there might be a secret shadow building programme intended to provide the basis of a sudden, rapid acceleration that would catch them out by 1920. This characteristic was especially dangerous because such ambiguities encourages 'worst-case analysis' of the data and the intentions of the other side.²⁵

Fifthly, there will tend to be a specific operational focus for the accumulation of naval arms. It is aimed at a particular nation or coalition, rather than the needs of naval defence



in general. The German surface fleet of the early part of the 20th century was clearly designed for operations in the North Sea, and so could hardly have been aimed at anyone apart from the British – and maybe the French, their allies, a point of which the British were well aware and to which they responded.

Sixthly, the protagonists sense that 'winning' or 'losing' the race could well result in a decisive shift in the nature of the military balance and the consequent power relationship between them. The status quo may in consequence be drastically changed to the disadvantage of the loser rather than simply maintained. This was summed up by the Foreign Secretary Lord Grey:

If we, alone among the great powers, gave up the competition and sank into a position of inferiority, what good should we do? None whatever...We should cease to count for anything amongst the nations of Europe, and we should be fortunate if our liberty was left, and we did not become the conscript appendage of some stronger power.²⁶

Moreover, because Britain was a maritime power, its stake in the outcome was disproportionate. Secure sea lines of communication were critical to the strategic survival of Britain and its empire. For Germany, as

Slava (Russian for "Glory") a pre-dreadnought battleship of the Imperial Russian Navy (Tom Lewis Collection)

the First World War was to show, naval power was a matter merely of prestige and diplomatic influence and of being better able to protect their commerce, not a matter of life and death, independence and integrity as it was for Britain. As far as the British were concerned, things had to be settled on a basis of British maritime superiority. Finally, perceptions and language seem to be important indicators of an arms race. In the period before the war, few doubted that Germany and Britain were in an expensive and potentially dangerous arms race. The analogy was often used by the statesmen of the time. In March 1912, Churchill, First Lord of the Admiralty bluntly stated Britain's determination to defeat the German challenge and promised to out-build whatever the Germans produced. The expense and potential dangers of this inspired liberals in both countries to try at least to slow the process down. It was also the reason why Churchill and others suggested building 'holidays' in the last three years before the war. This gets us to the issue of why naval arms racing was and is considered such a bad thing. The basic idea is clear enough. The process may well feed the 'security dilemma' of all countries in the region; one country's defensive preparations may make its neighbours feel less secure, so sparking counter-reactions on their part. Domestic imperatives such as the influence over decision-makers of the 'military-industrial complex' can encourage an accumulation of arms in one nation that encourages others to respond in a vicious spiral that leads to ruinous levels of economic expenditure and greatly increased prospects of conflict.²⁷

Thus Foreign Secretary, Lord Grey March 1909 in the House:

The great countries of Europe are raising enormous revenues and something like half of them are

being spend on naval and military preparations...[which are], after all preparations to kill each other. Surely...this expenditure...becomes a satire ...on civilisation...If it goes on...sooner or later I believe it will submerge civilisation.

But, on the other hand, there were those who took a much more relaxed view about the consequences of this kind of international behavior. Some pointed to the economic and social benefits of this kind of investment in technological modernization. Others argued that maintaining your military strength would deter risk-taking behaviour by others and so could actually stabilize international relationships. Naval arms races, in other words, had potentially beneficial consequences as well as bad ones.

SUBMARINES, ASW AND THE SOUTH CHINA SEA; SHOULD WE WORRY?

And so, after this rather long introduction, to the heart of the matter. Is there evidence of such a naval arms race developing around the South China Sea region and if so should we worry? To seek an answer to such

questions, the same seven issues need to be considered:

1: Submarine Development Internationally Driven?

Of course at the very least, the international context provides the major background and situates modernization policy but factors other than rivalry with other countries are at play too. The countries of Southeast Asia in particular tend to stress the value of developing innovative high-tech industrial technologies through investing in defence generally and through submarine acquisition in particular. Technology transfer through partnership with foreign defence forms is seen as providing a boost for local industry, social advantage and in some cases may also be designed to keep the military happy and supportive.

About half of the cost of the RMN's Scorpene project for example was tied to barter [through the sale of palm oil, cocoa, rubber and electrical products] and offset deals, and such deals have become a standard expectation.²⁸

The deal was designed to fit in with the New Economic Model plan to turn Malaysia into a high income society within a decade. This would be achieved through investing in new

*Malaysian Scorpene-class submarine
KD Tunku Abdul
Rakman-photo by
Chris Sattler*



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technology, helping firms like Boustead and developing places like Labuan Shipyard into a general hub for marine industries.²⁹ In December 2012, as another example, it was announced that South Korea's Daewoo company had won an order for three Type 209 derivative submarines for Indonesia. While the first two will be constructed in the ROK, sufficient technology transfer will take place for the third to be built in Indonesia. Commodore Sudi Haryono explained that,

Our priority as a government is to build a stronger local defence industry. We understand that we will have to look at buying equipment from abroad if we cannot make it ourselves but our policy is to enter transfer of technology agreements if we have to buy.³⁰

Moreover being able to export indigenous systems to other countries helps make submarine development by the original manufacturing country potentially more affordable. This appears to have been another factor in the recent Korean/Daewoo submarine deal with Indonesia.³¹ Many of the same calculations appear to have been made in the overall package between Russia and Vietnam for the latter's acquisition of 6 *Kilo* submarines.

These arrangements show the complexity of the dynamic between the external and domestic contexts. They illustrate the non-confrontational way in which one country's submarine acquisitions can facilitate others. It also provides evidence of what some analysts consider supply-side 'push' rather than customer side 'pull'; given the decline of their domestic markets, Russian and European defence industries have every incentive to seek out and exploit new markets in the area, no doubt being occasionally guilty of over-persuasion in the process.³²

Corruption and inefficiencies,

(such as India's endemic problem in its shipyards and acquisition systems) may not perhaps drive policy, but it can certainly determine outcomes. Throughout the region there is also a clear desire for independence of strategic decision and for reduced reliance on foreign defence suppliers, whose record is distinctly spotty in terms of quality, cost and reliability. Thus the Malaysian Defence Minister Dr Ahmad Zahid Hamidi:

Much of the economies of Europe and America are generated by the defence industry while we and other countries in this region are the end users...Rather than allow the country to be a dumping ground for near obsolete defence products and services, it's time for us to produce our own using the latest technology and at more competitive prices.³³

This he said would help Malaysia be 'more self-reliant on the national level'.³⁴

Varied though these domestic issues are as policy drivers, none of them seem to be principally aimed at other states.

2: Bilateral Rivalry?

The situation before the First World War was more complex than is often made out. Some rivalries cut across the straight relationship between Britain and Germany, but over time these complexities did resolve into an essentially bilateral competition between two competing coalitions.

So how does this compare with the situation around the South China Sea? President Obama's much-discussed pivot towards Asia, and the clear indications given by Hillary Clinton and others about America's heightened interest in the South China Sea have all brought the potential bilateral competition between China and the US in this area into much sharper relief.³⁵

This relationship frames the policy

of all the other actors in the area. The bilateral rivalry between Vietnam and China, for example is plainly predicated on the assumption that while the two countries may have acute differences of view over the South China Sea, the bulk of China's strategic preoccupations will be on the US and the wider challenge this may represent. In effect, and partly through its submarine acquisitions, Vietnam is developing its own Anti-Access/Area Denial (A2/AD) system, one that is specifically aimed against China but one that has to be seen in the wider context of the US/China relationship.³⁶

At the moment, though, the prospects of this degenerating into a straight "The rest v China" bilateral line-up still seem quite remote, given the numerous differences amongst 'the rest', the importance of their economic relationships with China and their domestic reluctance to be manoeuvred into a pseudo-coalition led by the United States.³⁷ Nor is there much evidence that such is Washington's intention.

3: Submarine development arising from High levels of Political Tension?

Here we have identified a willingness to use force as an obvious indicator of uncomfortably high levels of political tension. At first sight the outlook doesn't seem encouraging. The naval rivalry between North and South Korea provides the currently most deadly example of the genre, with the submarine sinking of the ROK Corvette *Cheonan* and past submarine-based raids on the South Korean coast. Many of the ROK Navy's acquisitions are clear reactions to the actions and capabilities of the North and seem often to stimulate asymmetric responses from Pyongyang. China's rivalry with Vietnam over the South China Sea has had lethal consequences

too, most notably with China's seizure of the Paracel islands in 1974 and the battle of Fiery Cross reef in 1988. Abusive media rhetoric in disputing countries doesn't help much either.

The extent to which the relationship between the US and China may degenerate into outright competition is a hot topic at the moment and finds distinctively maritime expression, since seapower is at the heart of the American position in the Asia-Pacific Region and of increasing importance to the Chinese. The US Navy still thinks of itself as navy under threat. It is not that American Admirals believe themselves to be faced with the prospect of war with China; rather it is a matter of a declining ability to shape events in the Western Pacific in the way that Washington would prefer, particularly in regard to the foreign policy choices made by other Pacific nations.³⁸

Accordingly the US Navy is keen to maintain its forward presence combat-ready naval forces as a precondition for its capacity to project power and influence from the sea, to maintain its web of political relationships in the area, to reassure America's friends and partners and to deter possible adversaries. For its part China sees this 'forward presence' and the US interpretation of international maritime law on the 'freedom of navigation' as an illegitimate means of containing China's growth and power and ultimately threatening its security. Hence the *USNS Impeccable* incident of March 2009, and the sometimes rancorous relationship between the two countries over problems in the East and South China seas.

The covert nature of submarines and their possible presence in sea areas where the fact and nature of national jurisdiction is disputed may well result in tactical situations that both illustrate and exacerbate such tensions. Countries in the region do exhibit

high levels of sensitivity about their sovereignty and so take a jaundiced view of the possible 'intrusion' of anonymous submarines into their EEZs, let alone their territorial seas. Indonesia for example has, in the past, demonstrated its concerns about submarine passage through its waters.³⁹

This level of general tension, though, is much mitigated by high levels of trade dependency between all the actors by the rhetorical and to a lesser extent practical demonstrations of naval togetherness and functional cooperation in the region, in terms of fraternal exercises and common efforts against common threats such as that of piracy in the Straits of Malacca, and the emphasis given multinational naval cooperation in all their declaratory statements and doctrinal formulations. All the states of Southeast Asia, Japan and India, the US particularly and China too with its discourse on the 'harmonious ocean' consistently and regularly employ the rhetoric of such naval togetherness. For evidence of this in the submarine world, one might point to the growing interest in submarine rescue capabilities and mutual help exercises.

There was little evidence of this in the Europe of 1914, though it has to be said that the war between Britain and Germany broke out shortly after a large scale high-level British fleet visit to Germany that everyone agreed was particularly ambitious and successful. There are limits to what naval togetherness can achieve in some contexts.

4. Submarine Development: Abnormally Intense in Style?

The intensity of the naval competition in the region can be measured in a number of ways. The most obvious perhaps is the extent to which national budgets are devoted to naval

development. Here the situation is generally much more encouraging, since defence expenditure levels as a proportion of GNP remain very low by the standards of the 20th Century, and in several cases are actually falling rather than rising. This is offset to some degree of course by the increase in the size of the national budget made possible by economic growth; according to SIPRI the actual amount spent on defence in the region actually increased between 2000 and 2008.⁴⁰ In this regard the Chinese example is often used as a worrying trend, particularly as its results tend to set the standard by which other countries define their needs. As a percentage of GNP, Singapore's spending at around 5 per cent is also high by local standards. Most other countries, though, seem to make much less effort.

Moreover, most countries of the region, do face real domestic problems in implementing their submarine acquisition programmes. The Thai Navy's submarine acquisition plans for instance are bedeviled by budgetary parliamentary doubts, especially in the wake of the country's recent flooding disaster. Moreover its experience of the carrier programme will warn conscientious planners of the dangers of acquiring the kit without the support packages to back it up.⁴¹

The big issue with the *quality* of course is in the appearance in the region of submarines, and especially perhaps larger modern types with greater range, AIP and long-range sea and land attack capabilities. Vessels like this are widely regarded as potentially more de-stabilising. Properly operated they have demonstrated great utility in a variety of high-intensity tasks ranging from covert surveillance, through land attack to campaigns of sea denial. Though major force multipliers for such missions, they are of limited utility and cost-effectiveness

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for low-intensity tasks such as the maintenance of maritime security. They seem justified primarily by their utility against peer competitors rather than against commonplace threats such as pirates or drug smugglers, because they provide comparatively very limited means of exerting 'soft power'. In both submarine operation and ASW operations, it is all too often a matter of 'all or nothing.' Even so, properly operated, their acquisition represents a perhaps natural ambition for a growing navy, not least because they are usually considered to offer major advantages in cost-effectiveness when compared to the countervailing ASW efforts of the 'other side(s)'

But they also come with a particularly challenging baggage of operational challenge. The experience of other navies shows just how difficult it is to operate and maintain submarines, especially when a navy is either developing such skills first time, or regenerating them after a period of relative neglect.⁴² If to this is added the difficult physical and jurisdictional conditions of the South China Sea and the huge problems in water-space management, the possibility of accident and/or inadvertent crisis as well as the expenditure of large amounts of money without long-term benefit must seem high.

However the pace, in quality terms, of transformational change does not seem particularly high when compared to that of the early Twentieth Century. HMS *Invincible* the Royal Navy's first battlecruiser was commissioned in 1909 but obsolescent in 1916 when it was sunk in the battle of Jutland. By contrast, the appearance of AIP has not been rapid nor has the move into nuclear-propulsion, as exemplified by India's very slow development of this capability. China's progress in developing an SSBN force has been steady, or glacial depending on one's

point of view, and certainly far slower than the equivalent efforts of the US or the Soviet Union during the Cold War.⁴³

Nor has pace of change in numerical terms been all that alarming despite the breathlessness of media coverage. The submarine programmes of Thailand and Indonesia, both countries seeking to revive earlier submarine capabilities, have not proved very rapid. The deal between Indonesia and the ROK recently announced for the acquisition of three Type 209 derivative submarines for commission in 2018 can be seen as the second phases of a programme that started back in the 1970s. The same is even more true of Thailand's equivalent aspirations. Finally, even when successful, such programmes have yielded very small numbers of submarines. Although fleet commanders no doubt hope to do better than the 1 in 50 day patrol rate achieved in Canada⁴⁴, this will still make a sustainable submarine patrol presence extremely difficult.

Of course, this range of caveats can be applied with much less effect to the submarine programmes of China, the ROK, Japan and the US where observers have noted an aspiration towards greater numbers (in the case of Japan and the ROK), greater quality (in the case of all four) and in an apparent willingness to use these submarines quite robustly. The extent to which the wider tensions are increasing the strategic focus on the South China Sea means that the tensions that may result from this wider and more general development in submarines may be imported into the sub-region.

Concern here is increased substantially by the Chinese budget's perceived lack of transparency, a critical characteristic of the Anglo-German position before the First World War. Analysts have pointed out that the 2010 Chinese Defence

White Paper for example made no mention of the DF-21D, the J 20 or the prospective launch of the country's first aircraft carrier and so provided a distinctly inadequate guide even to China's short term naval intentions. Other states in the region however remain similarly opaque, in strong contrast to the almost embarrassing candor of the American system. Thus Admiral Abdul Aziz, at the arrival of the second Scorpene, the *KD Tun Razak*, complained that there was dangerous trend where information about a country's strategic assets and sensitive information was made public via the internet. 'Information about the submarines,' he said, 'had also been purposely manipulated by certain parties for their own selfish reasons.'⁴⁵ His views on this are echoed by many of his naval colleagues around the region.

5: Operationally Specific

At first glance at least there are unnerving similarities between the North Sea of 1914 and the South China Sea today. In both cases malign geography more or less forces all the actors to satisfy their own competing security preoccupations in the same stretch of water. Much of the South China Sea is directly contended by Vietnam and China, and other countries in the region. These disputed waters and, for that matter, the Japanese island chain sits directly across China's access to the open ocean, and strategic interests collide in consequence. The US and China are both preoccupied with the security of what the China calls the 'near seas' within the first island chain. Indeed, the most obvious and worrying example of a potentially dangerous operational specificity has to be the emerging competition between Chinese concepts of Anti-Access/Area Denial on the one hand and American responses in the

shape of the Air-Sea Battle on the other. Both concepts only really make sense, and justify their enormous budgets, when pitted against each other – just as did the German and British concepts of battlefleet operation of 1914.⁴⁶

The build-up of the submarine components of China's South Sea Fleet at Yulin, and the distinct possibility that China may base its emerging SSBN force there has increased the US Navy's interest in the area, and is no doubt a factor in its military data gathering activities in what it regards as international waters and air space to the South-west of Hainan. China does not see things the same way and its objections to this were manifested by the *Impeccable* incident of March 2009 and by a robust and continuing campaign of legal and political objection ever since. Given the fundamental difference of view between the two sides about what is militarily permissible in the EEZ, and what actions can be legitimately engaged in to express those views, the prospect of such potentially dangerous incidents must remain high.

Nonetheless, against all this, submarine acquisitions need also to be seen as just part of the developmental programmes of the region's navies. Navies are for 'general purposes of greatness'⁴⁷ but they have many other less conflictual roles too. All the navies of the area are trying to develop a portfolio of general all-round naval capabilities rather than simply a set narrowly aimed at another state. They have for example to develop capabilities that will assure maritime security in their regions of interest against threats such as illegal fishing, drugs, arms and people smugglers and terrorism. They mostly want to display naval capacity (and this is arguably more easily done through surface ships than submarines). Resources being finite, there is an element of tension between

such aspirations and the narrow-eyed policies of deterrence aimed at peer competitors that was so characteristic of Europe before the First World War.

6: Submarine Development - High Stakes?

Since the area is so intensely maritime, submarine superiority seems to matter a lot. Submarine development may be seen as a symbol of the extent to which the South China Sea has become the *locus* of an incipient strategic competition between the US and China about their relative power in the new security architecture of the 21st Century which in turn makes the stake in the submarine relationship between the two seem very high. Hence the US pivot towards Asia something measured in submarine terms by the fact that an increasing proportion – now something like 60 per cent – of US Navy submarines, including its latest classes are deployed to the Pacific, something that will have been noted by China.

There is competition too between some at least of the other players. Rightly or wrongly, the future course of events in the South China sea is seen as an indicator of China's future role in the area and its relationship with ASEAN. To these political considerations must be added a series of economic ones. The extent to which both China and Vietnam have emphasized the importance of developing the maritime aspects of their economies in their latest five year plans, will certainly increase the level of competition between the two for the fish, oil and gas commonly supposed to be potentially available in the South China Sea, and if to a lesser extent this applies to the other players in the region too. The stakes would seem quite high here too, and hence the prospect of submarines operating in such troubled and difficult waters, must be a matter of some

concern.

But, on the other hand, conflict is seen as in no-one's interest and all the actors have an absolute if sometimes indirect stake in the safe passage of the 75,000 or so merchant ships that pass through the area every year. The stakes may in fact be nothing like as high or the outcome so momentous as they appear at first glance. This case is strengthened by reference to the growing economic inter-dependence of the countries of the region and the harm to all that would result from excessive levels of competition, which most would argue makes continuing peace and prosperity the highest stake of all.

7: Language and Perceptions

In 1912-1914, as we have seen, there was a strong sense that Europe was engaged in an arms race at sea and was standing into war. This was why Churchill and others pushed so hard for naval holidays and construction stretches.⁴⁸ In contrast, while to quote Australia's Minister for Defence, Joel Fitzgibbon in May 2009: 'it would be premature to judge that war among states, including the major powers, has been eliminated as a feature of the international system.'⁴⁹ Statesmen in the region mostly think it highly unlikely and their discourse in no way approximates the rhetoric and indeed the level of concern common in Europe before the First World War. But it does perhaps suggest a need to make positive efforts through various programmes of naval togetherness to keep things that way. Hence much of the public rhetoric in the area is about the need further to develop areas of cooperation between the region's major and minor, navies, to avoid the dangers inherent in accidental encounters and the need to develop confidence-building measures.⁵⁰

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Accordingly the need to extend the discourse to the acquisition and operation of submarines is slowly beginning to be accepted. Singapore for example has hosted exercises and discussions on submarine rescue and 'intends to use our submarines to build confidence with other militaries.'⁵¹

Coming to a clear-cut conclusion about the extent to which we should worry about the acquisition and operation of submarines in the South China sea area is therefore not easy. The evidence conflicts, but for all the limits discussed above and the region's togetherness, we should not perhaps be too sanguine about the prospects of a submarine race in the region. There remains the possibility of future miscalculation and future deterioration, especially if the nationalistic impulses of the regions' 'netizens' get involved in some future submarine incident. There is as yet little sign of a submarine equivalent of the 'Dreadnought fever' that beset Europe before 1914, but we cannot entirely rule it out.

Anxiety must be increased by the absence of the specific constraints on competitive naval development that emerged for example during the Cold War, and before, in the shape of arms control or incidents at sea agreements. For a variety of reasons, the US and Chinese navies have been unable to conclude any 'Incidents at Sea agreement' such as those negotiated with the Soviet Union during the Cold War, for example. The likelihood of the successful introduction of water-space management protocols in disputed waters such as the South China Sea, for example in order to reduce the prospect of accident and collision for example seems quite remote.⁵² Levels of transparency about naval intentions also remain low, and the prospects for worst case analysis correspondingly high.

But, to end this preliminary survey on another perhaps mischievous note, there is a legitimate argument that even if it were concluded that such a submarine arms race, or at least competition, were either taking place or in prospect, that its consequences would necessarily be as bad as its critics assert. After all, although the naval preparations of Germany and Britain did certainly cost a great deal of money that could profitably have been spent on other things (social welfare, submarines or the army according to taste) and at times poisoned the international atmosphere, they had precious little to do with the outbreak of war in 1914, which was far more to do with the foreign policies of the powers, the limitations of contemporary diplomatic procedure and the constraining effect of army deployment plans. In Britain, many were convinced that British determination to win was actually good for stable Anglo-German relations. It showed that liberal Britain had not become effete and soft; it deserved respect and provided incentives for friendship. Despite, or perhaps because of, the Dreadnought race Anglo-German relations in 1914 were better than they had been for years.

In like manner, Admiral Laksamana Tan Sri Abdul Aziz Jaafar at the arrival of the Royal Malaysian Navy's first Scorpene,

The presence of the Scorpene submarine is a deterrent for would-be perpetrators. It is an insurance factor in our defence system. It will be force to be reckoned with. It's not that we are unable to defend our country without it but with it our enemies would think two or three times before they act against us.⁵³ And who's to say he's not right? After all, there is something to be said for the notion that in the 1930s the reluctance of Britain, France and the

United States to respond to the military preparations of Japan and Germany and their preference instead for a strategy of relying on a policy described by Bernard Brodie as 'faith, hope and parity'⁵⁴ was much more to blame for precipitating war than was the Anglo-German naval arms.

How might this apply to the South China Sea? Perhaps the clearest example might, paradoxically, be the development of a Chinese SSBN force at Yulin. The incentives for this, after all, are presumably for China to develop the kind of secure second strike capability for its nuclear forces that the classic literature on the subject in Cold War days suggests was a stabilising rather than a de-stabilising development. In the same way, there might be something in the argument that the development of credible naval forces, submarines included, will discourage adventurism and risk-taking behaviour. To the extent that all this is true, then perhaps even if a submarine race is beginning to develop in the region we shouldn't worry too much about it anyway! On the other hand, some would argue that this same development might well tempt the US Navy into preparing for a campaign of strategic ASW, which they would regard as escalatory and destabilizing as, arguably, it was in the Cold War⁵⁵ – and so perhaps we – and perhaps especially Australia – *should* worry after all! 🚢



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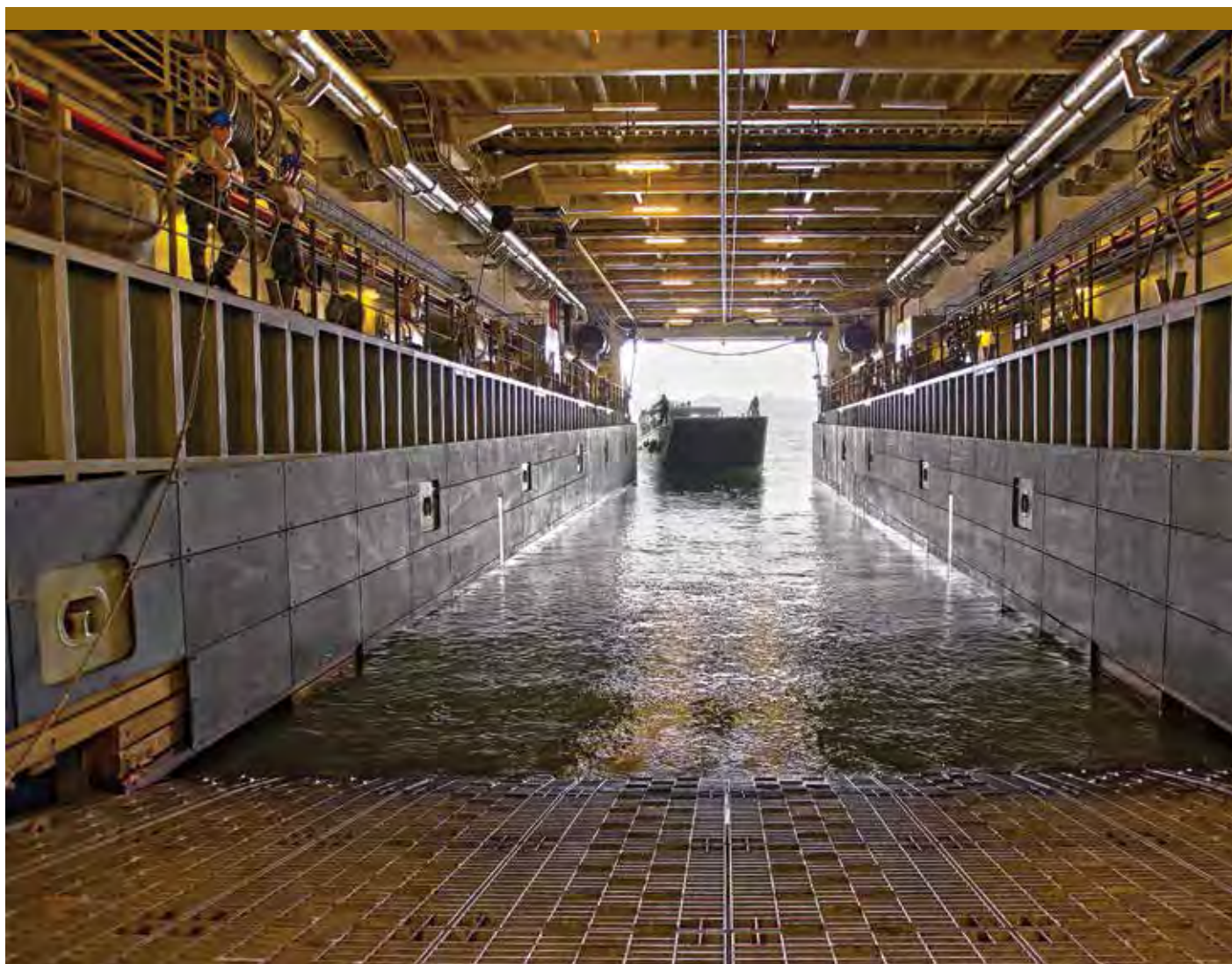
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An Army Landing Craft Medium 8 (LCM8) from Townsville based 35 WaterTransport Squadron approaches the 'beach' inside the well dock of Landing Ship Dock HMAS Choules during Exercise SQUADEX 2012 Credit ABIS James Whittle

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A large submarine is shown underwater, moving from left to right. The water is a deep blue, and sunlight rays penetrate from the surface, creating a dramatic effect. The submarine's conning tower and various sensors are visible on its upper hull.

Depth of expertise

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Image: Eye in the Sky

Captain Norman Banks - 1958-2011

Captain Norman Stewart Banks, a most respected career naval officer, passed away on 2 December 2011 after a long and courageous battle with cancer.

Norman Banks was born in the Orkney Islands in Scotland on 31 May 1958. His childhood was that of a traditional islander of the period and this included often wearing a kilt to school. Norman was the son of Stewart and Nancy Banks who had a long tradition of farming and fishing. His family immigrated to Australia in the earlier 1970s and settled in Melbourne. Norman quickly embraced the Australian way of life and developed an Australian accent that belied his Scottish origins.

In 1977 Norman Banks joined the Royal Australian Navy as a Supplementary List officer at *HMAS Cerberus*, south of Melbourne. With his longstanding family maritime roots it was unsurprising that Norman had a strong affinity for the sea and the Navy.

Norman's early career followed the established pattern of training in the Fleet to obtain his bridge watchkeeping certificate and then service in small ships to consolidate his watchkeeping skills. In Norman's case he served in the patrol boats *Adroit* and *Assail* based out of Darwin. During that period these small vessels mainly conducted fisheries protection and were a navy unto themselves.

Following his patrol boat years, Norman undertook the Assistant Principal Warfare Officers Course at *HMAS Watson* in 1983. He then served in the destroyer escort *HMAS Parramatta* both watchkeeping in the bridge and the operations room. During this period the ship conducted deployments to South East Asia. In 1984 he undertook the one-year Principal Warfare Officer training with the Royal Navy in UK. He and three other RAN officers were on the last course before this training was repatriated to Australia. Norman

specialised in Gunnery and remained in UK after the course to undertake an exchange posting as the gunnery officer of the frigate *HMS Avenger*. The ship had operational service in the Persian Gulf as part of the Armilla Patrol. Essentially the task of the frigate was to ensure safe passage of merchant shipping in the face of the Iranian-Iraqi conflict. This period of his service broadened Norman's professional horizons and firmly established his specialist credentials.

On return to Australia Norman spent some time in the PWO Faculty at *HMAS Watson* prior to joining the frigate *HMAS Darwin*. The ship attended Exercise RIMPAC 1990. The event was notable for two things; the first was *Darwin* running aground off Hawaii and requiring some weeks in Pearl Harbor effecting repairs. The second was that Norman met his future wife Maureen O'Malley at a cocktail party. Maureen and some girl friends were on a holiday from Clinton,



OBITUARY

Massachusetts and by chance received an invitation to attend the reception. Norman and Maureen married at *HMAS Watson* in 1992. Their union brought immense happiness to them both.

Norman's sea service included a posting as Executive Officer of the frigate *Melbourne* and then culminated in his command of the *Adelaide*. The controversy of the 2001, 'Children Overboard' incident, was a much unwanted distraction for Norman. He was immensely proud of the efforts and heroics displayed by *Adelaide's* sailors in successfully rescuing the men, women and children from the sinking vessel. His composure through this incident and subsequent inquiries became an inspiration for a generation of naval officers. His command of *Adelaide* subsequently included a successful operational deployment to the Gulf to enforce UN Security Council Resolutions against Iraq.

In 1994 Captain Banks was posted for two years Exchange service with the USN. He was appointed to the Staff of COMTHIRDFLT primarily as the lead planner for exercise RIMPAC, and he did exceedingly well in a very complex job.

In 2002 Norman was sent to the US Central Command Headquarters in Tampa, Florida to act at the Australian Defence Liaison Officer. This was a critical time as the Central Command was immersed in developing contingency plans for the possible invasion of Iraq. By virtue of his experience with operating with the US Navy over his career as well as his understanding of the US military culture, Norman was extremely successful in that role.

On leaving *Adelaide* Norman travelled to Darwin undertaking the role of the Chief of Staff and Deputy Commander Northern Command. He was promoted to Captain from this

role and attended staff training at the Australian Defence College before serving as the Chief of Staff to the Commander of Australian Naval Systems Command. The Command had diverse responsibilities from naval training, engineering, naval bases and personnel. Norman was a brilliant chief of staff who possessed a sure sense of judgement, a willingness to address difficult personnel matters and an exceptional clarity of thought on paper.

In 2009 Norman contracted stomach cancer and the battle for his life began. The early outlook was positive but his strain of cancer was virulent. His fight against the disease was quite inspirational as was the devotion and courage shown by Maureen. Norman was touched by the support the Navy and the broader Naval Family gave him during his struggle. He was equally grateful to the wonderful support provided by the medical staff at Canberra Hospital and the Duntroon Medical Centre.

Norman Banks had qualities that attracted great loyalty and affection among his friends. They appreciated his native Scottish stubbornness, his deep integrity and good humour. He came to unintentionally symbolise the Navy's abiding desire to adhere to its



values and that of preserving life at sea in the face of the uncertain pressures of border protection.

Norman's abiding passions were his family, the Navy, and his native sport of golf. His beloved Collingwood Magpies could not go by without mention. He doggedly supported the Magpies from his early years in Melbourne and was known to spend late nights overseas with an ear glued to radio or the internet to follow games and hear results.

Norman Banks is survived by his loving wife Maureen, his parents, Nancy and Stewart, and his younger sister, Grace. 🇦🇺

OBITUARY

**THE FOLLOWING MESSAGE
WAS RECEIVED FROM NAVY
OFFICE ON 6 SEPTEMBER
2011:**

It is with regret to advise that Monsignor "Tiger" Lyons passed away peacefully at St Joseph's Home, Northcote, Victoria yesterday, (just a few weeks short of his 90th birthday). He had been in care for some years. His funeral Mass will be at St Patrick's Cathedral, Melbourne on Thursday 8th September commencing at 1400. He will be buried in the Priest's Crypt at the Melbourne General Cemetery after the Mass concludes.

Monsignor Lyons was appointed as a Chaplain in the RANR in February 1957 from St Columba's Church, Elwood and later transferred to the RAN on the 23rd June 1958. He served for 21 years and retired from the RAN as a Principal Chaplain (RC).

Monsignor Lyons served in HMA ships *Lonsdale, Albatross, Cerberus, Penguin, Creswell, Kuttatubul, Watson, Leeuwin, Melbourne, Sydney, Supply, Stalwart, Derwent*, and *Queenborough* as well as on the staffs of the Fleet Commander as the Fleet Chaplain and the Naval Support Commander as the Command Chaplain.

His Honours and Awards included

being appointed as a Member of the Order of Australia, Vietnam Medal, Australian Active Service Medal with Clasp Vietnam, Australian Service Medal with Clasp FESR, Defence Force Service Medal and the National Medal.

When he retired from the RAN, he always retained a great interest in the Navy, its people and the wider Navy family. Monsignor Lyons had a deep devotion to the Blessed Virgin Mary - as will be noted by the many fine gifts he left as memorials to those who had died during Service in the RAN which include the Marian theme. He was serving in Melbourne at the time of the *Melbourne/Voyager* collision.

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CN SPEECH – AUSTRALIAN NAVY FOUNDATION DAY, CRESWELL ORATION – 01 MAR 2012

Members of the Creswell family, members of the Australian Navy Foundation Day Organising Committee and of the Navy League, ladies and gentlemen. It is my pleasure to be invited to present the Creswell Oration for 2012, to commemorate Navy's 111 years service to the Australian nation. I am particularly honoured to be the first person to have the opportunity to deliver this address twice. Five years ago as the Deputy Fleet Commander, when paradoxically, I probably had more freedom in what I said than I do today - I focused heavily on the period leading up to the key decision to acquire our own fleet - I think after five years I hope I can get away with reusing some of that speech! But before I start, though, I would like to acknowledge the achievements of John Wilkins and congratulate him on the public recognition he received with the award of a Medal of the Order of Australia in the Australia Day Honours List this year. It is fitting that this recognition was for his work in the preservation of Australia's naval history - Well done John!

This time five years ago was the first real attempt to publicly acknowledge Navy's birthday; there was a quite a media blitz, *Cerberus*, under the tutelage of Dave Garnock, had a huge Navy birthday BBQ and our ships were dressed for the first time to mark the occasion.

I remarked during this speech five years ago that I thought Navy's celebration of its birthday was here to stay. Well, so far so good! There is maybe less media fanfare today, but I think we are seeing the importance of the day being embedded in our naval calendar. Indeed tonight I will be hosting the first Navy birthday

official reception in Canberra. I have discontinued the Chief of Navy's traditional Christmas reception and replaced it with tonight's event which I think is more fitting and helps reinforce the importance of the day.

As always it is great to be here in Melbourne where so much of the story of our early Navy was played out. I don't think I need to recount the entire role of Victoria in those early years but I do think it is worthwhile to note the richness of Victoria's naval heritage from our first purpose built warship of 1855 which proudly bore this state's name. *Victoria* served in the Maori wars of 1860 and has the distinction of earning Australia's naval forces their first battle honour: New Zealand 1860-1861. Victoria was also the first colony to regulate its naval activities, and, of course, remains the 'cradle of the Navy'.

Today I would like to talk to you about the way Navy is developing as a result of the challenges of today but I will also draw on some historic parallels. The reason I chose this mix for discussion is because, like so many other speakers before me at this event, I firmly believe that Australia's naval future cannot be understood, developed or articulated in isolation from our history and foundations.

If I could turn to this day in history - it marks more than the birth of our nation's Navy (and Army - we should not forget that, either). On this day in 1901, control of the States' Defence Forces was transferred to the Commonwealth of Australia.

In 1913 on this day the first entrants of the Royal Australian Naval College commenced their training at Osborne House in Geelong. This included distinguished graduates such as a young John Collins and Harold Farncomb, both of whom served with distinction during World War II and reached flag rank and whom we honour today through the two submarines that proudly bear their names.

In the early hours of the morning on this day 70 years ago, Victorian born Captain Hector Waller led the crew of the cruiser *HMAS Perth* in company with *USS Houston* in the face of impossible odds against superior Japanese naval forces during the Battle of Sunda Strait.

357 of *Perth's* complement, including Waller, were killed in action,



*Vice Admiral Sir William
Rooke Creswell*

*HMAS Perth at speed (By
B2:67 - HMAS)*



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while those who survived suffered the privations of three years of captivity as prisoners of war. Nearly 700 US sailors died that morning, including their Captain and Medal of Honour winner, Harold Rooks. Today the concept of over a thousand people losing their lives in action over the space of a couple of hours would be very hard to comprehend.

On Tuesday, at the War Memorial in Canberra, I was privileged to meet seven of the twelve remaining *Perth* survivors from that action. Meeting our naval veterans is always an honour; as a group they were truly inspirational. Services like that on Tuesday remind all of us in this uniform of what we may be asked to do as part of a combat force. It also reminds us of the strength of the bonds that the term 'shipmate' evokes and in this particular instance it also underscores the depth of the relationship that we have with the United States Navy.

So, whether we join together today in celebration or commemoration, March the 1st is an important day for us to strengthen and honour our Australian naval heritage. A day to acknowledge the lives lost, the sacrifices made and the selfless service given by tens of thousands of fellow Australians and to draw upon the valuable lessons their experiences and challenges provide us.

Australia as an island state with a long coastline is critically dependent on seaborne trade and has vital interests in the stability and security of the region, whether in times of peace or conflict. As stipulated in the White Paper of 2009, today, as at every stage of our nation's development, our main aim is to defend against and deter armed attacks against Australia.

There are many significant parallels that may be drawn between the challenges we face today in the RAN and those that were presented to the

Navy in our early years of development.

This tyranny of distance and associated naval challenge was acknowledged by Alfred Deakin and Admiral Tyron amongst others at the 1887 Colonial Conference held in London and indeed was the catalyst for the Australasian Naval Defence Act passed that December which allowed for the provision of an auxiliary naval squadron which was to be partially paid for by the Australian colonies and New Zealand.

Of course, in addition to Victoria, several already had their own defensive naval forces and these in time were to become the basis of the future national navy.

Captain, later, Vice Admiral Sir William Creswell, who commanded first South Australia's, then Queensland's naval service – and, briefly that of Victoria, was steadfast in his insistence that Australia needed the ability to defend its vast coastline. Creswell however, was of the opinion that this defence needed to be indigenous to Australia. In an article printed by the Brisbane Newspaper Company in 1901, Creswell wrote about a "guerre a commerce" and how a war on merchant shipping would adversely affect Australia in both the trans-oceanic and coastal trading domains. Then, as now, Australia's future and its prosperity are bound to the maritime environment and the ability to use the sea for the conduct of commerce.

I recently had the privilege of speaking at the Sea Power Conference in Sydney, the theme of which was 'The naval contribution to prosperity and National Security', which reflects the continued importance of Australia's ability to use the sea. Whilst at this conference I discussed the unfortunate phenomenon of 'sea blindness'. This phrase was coined in the UK a number of years ago to describe what was

considered a lamentable lack of understanding by the British public of the sea and the importance of their Navy. We suffer from it too. Curiously enough it was not something that was evident in the early years of federation. With literally no other means of communication or transportation, the country was very much focused on the sea and what it meant for Australia's prosperity.

The strategic reality is that in 2012 it has not changed but the public's grasp of the importance of the sea has waned significantly.

It is confounding that many Australians observe an array of merchant ships at anchor off Australian ports like Newcastle, but do not instinctively make the connection to our national wealth. Of course, compounding this is that much of our high value merchant traffic operates off our sparsely populated north west coast or other regional areas, largely unseen by the public.

The truth is that most seaborne activity is invisible to the average citizen and the relationship between the assured use of the oceans and our national prosperity – indeed our national survival – is not something that penetrates the consciousness of most. Perhaps running the 'supermarket shelves' test is the best way to make this point. Take everything off the shelf that has in some way been reliant on sea transport and see what is left.

Partly this problem exists because of the nature of maritime work. Much of what maritime industries – shipping, fishing and offshore resource



*Hec Waller with
pipe (Tom Lewis
collection)*

exploitation – as well as what the navies that protect them occur out of sight of land and therefore out of mind. We as a Navy, along with the broader naval community need to talk more about what we do and the contribution that we and the rest of the maritime sector make to the continued prosperity of this country.

If you have been following my recent speeches you will see this is a recurring theme, and if I am starting to sound like a broken record it is because I believe that this is such a fundamental message that we must get across.

I would like to touch briefly on the recent findings of Mr Alastair Hope the WA Coroner into the tragic events of 15 December 2010, when Suspected Irregular Entry Vessel 221 foundered on the rocks at Christmas Island and up to 50 asylum seekers perished. I have personally spent a number of months operating there during the monsoon; they are perilous waters in those conditions.

I remain very proud of what the Assail Three crew and their small Army Transit Security Element did on that day. They were the most difficult and tragic of circumstances and our people were simply magnificent. I think what they did on that day, like their mates who dealt with the explosion on SIEV 36 in April 2009, are the truest indicator of the quality of our people and of the intrinsic nature of Australia's Navy. It reinforces for me that there remains an unbroken thread throughout the last 111 years that this sort of behaviour has been consistently demonstrated in both peace and in war. There are some who still want to criticise the response of our people on that day, criticism leveled by people who have never worked at sea, let alone commanded men and women in tough circumstances or had to pick their way through the reality of the Clausewitzian fog which sometimes descends on

operations.

I am grateful that Mr Hope, who was quite rightly very tough, forensic and probing during his inquest, reached the conclusions about our people that he did. From all my reading of the material and my personal experience of the operational environment up there, our people can stand tall for how they responded and acted, putting themselves in harms way to save others on that awful day.

Our commitment to border protection is our most significant operational task, it continues under close public scrutiny and is conducted every single day by a dedicated and yet largely unrecognised group of sailors. We should all be very proud of what they achieve. I certainly am.

If I could turn to the Navy of tomorrow. As most of you would know we are building Force 2030, the future force that was articulated by the Government in the 2009 White Paper, a very capable Australian Defence Force. It is a force that is starting to be delivered. In many ways there are similarities in the challenges we face today just as Creswell faced as he set about building the early RAN. The parallels are significant as we upskill our people for new capabilities and equipment that we have had no prior experience in operating. We of course are not coming off a zero base but it is nonetheless a challenging time.

This year marks the arrival of LHD *Canberra* here in Melbourne for



the fitting of her superstructure and integration of her communications and command and control equipment. When you see her come in you will see the step up that we face after 30 years of having a 'frigate-navy' outlook. We are up to the challenge and frankly I think it will bring a level of excitement and pride to the organisation that will be beneficial, but as I have been saying to the wider Navy, the worst thing we can do is to think that 'we know boats'. In capability terms the LHD is a game changer and will shift the way we conduct our amphibious training and operations just as the arrival of the first RAN fleet of ships in October 1913 shifted the thinking of those in the navy at the time.

For us however the LHD will not

More capable helicopters are on the way... an MH-60S Seahawk helicopter of Helicopter Sea Combat Squadron 8 brings supplies to the aircraft carrier USS John C. Stennis during a vertical replenishment. (Courtesy US Navy)

CN SPEECH – AUSTRALIAN NAVY FOUNDATION DAY, CRESWELL ORATION – 01 MAR 2012

be just about shifting Navy and what it wants to achieve, it will be about shifting the ADF and accommodating what it needs to achieve for the capability as a whole.

And there will be equivalent challenges for the ADF with the introduction of the Air Warfare Destroyers. We are starting to get back into the air warfare mission in a way that is also paralleled only by the capability jump that the 1913 Fleet Unit represented. The AWD are key to that jump, but so are the new Airborne Early Warning and Control aircraft now entering Air Force service.

Together, ship and aircraft – and the other systems and units with which they will operate – represent a sum very much greater than the component parts. In the meantime, we have the long range SM-2 missile at sea in the modernised guided missile frigates and the new phased array radar fit and combat system in the frigate *Perth* has been immensely successful. When the program is complete, all the ANZAC class will have an order of magnitude increase in their missile detection and engagement capabilities.

In 2014 we will see new combat helicopters for Navy with a new variant to the Seahawk helicopter. It re-introduces an important capability – the dipping sonar; which will allow us to conduct anti-submarine warfare in a way that we have not for some time.

Then, of course, there is the future submarine, the offshore combatant vessel, and in the mid-2020s a new frigate to replace the ANZACs. In all, it is a very exciting time on the hardware front.

I know the reality of a serious maritime power projection capability is coming into sharp focus within the Defence senior leadership group.

The announcement regarding the 2nd battalion of the Royal Australian Regiment as a dedicated amphibious

battalion is an important lead indicator, as are the changes Navy will be making to tactical command and control structures to better support the deployable joint force headquarters construct and provide a more robust Command and Control arrangement.

If we consider one of the very first combat experiences of the RAN, there was an emphasis from very beginning on a joint expeditionary capability. Australia and New Zealand had combined to create a Naval and Military Expeditionary Force which set out on August 19, 1914 just weeks after the proclamation of war to land in Rabaul and then take the wireless station at Bitapaka.

This operation was a maritime power projection mission enabled by the ability to exercise local sea control. In that case it utilised the versatility and utility of the battle cruiser *HMAS Australia*; the light cruiser *Sydney* and the Australian destroyer and submarine forces. The initial landings were conducted by naval infantry who were then subsequently supported by militia forces landed from the transport ship.

Today of course we still serve in the joint environment ashore.

In August last year I accompanied

the then Minister for Defence Materiel, Minister Clare, into Afghanistan for my second visit to that country. Navy have about a dozen officers and sailors in a number of roles, from patrolling on the front line with the MTF as Explosive Ordnance Disposal or Improvised Explosive Device specialists, to some key HQ and support positions; they are doing a great job and are universally well respected. We also have Navy people on operations in the Sinai, Timor, the Solomons and in Southern Sudan.

We are now in our 22nd year of major fleet unit operations in the Middle East. *HMAS Parramatta* is the current frigate in the Middle East Area of Operations (MEAO) doing a sterling job across counter piracy, counter terrorism and general maritime security missions. Someone who was no stranger to the dangers of counter piracy operations was Creswell himself who was shot in the hip during a skirmish with pirates off the Malay coast in 1873 whilst he was serving as a Sub-Lieutenant in the gunboat *Midge*.

Of course both new and old capabilities bring with them significant maintenance challenges, a fact that the naval engineer, a man very much the

HMAS Albany doses in on the scene as Royal Australian Navy RHIBs' rescue survivors from the water after an explosion aboard Suspected Illegal Entry Vessel (SIEV) 36 north of Ashmore Island. (Courtesy Navy)



'second father' of the Australian Navy, Captain and later Vice Admiral Sir William Clarkson was well aware of as the senior technical officer of the naval forces from 1901.

With the outbreak of war there were 28 vessels requisitioned for the purpose of transporting the first AIF contingent of 21,500 men and 8000 horses to the Middle East. As you can imagine, alterations of a drastic nature were required. In addition to configuration changes Clarkson was ultimately responsible for the manufacture of all the equipment required to fit out and repair ships at Cockatoo Island dockyard. All of this was achieved often in very tight timeframes. Perhaps the most impressive of all technical achievements of that time under Clarkson's direction was the building of warships up to light cruiser size at Cockatoo Island, a process which was enabled utilising an increasing proportion of locally produced items as suggested by Clarkson.

Speaking of technical integrity....last year the report resulting from the Rizzo Review into amphibious and support ship maintenance was released. This review was undertaken with the express purpose of ensuring that what led to the systemic failure in availability of our amphibious force never occurred again. An important recommendation made by Paul Rizzo was to rebuild and reorganise Navy engineering: a process that he recommended be led by a two star Navy Admiral to give the necessary weight to this critical function. I promoted RADM Mick Uzzell and appointed him as Head of Navy Engineering in September last year and he has been hard at work since that time. There is significant work underway to implement the recommendations of the review and get us back to basics.

Of course the review was about more than engineering, it was about

the broader capability management challenge and ensuring that all of our officers and senior sailors understand their role in it. But a healthy engineering function which is viewed as an enabler rather than an overhead remains absolutely critical to a high technology organisation. I believe we lost sight of that critical difference over the last decade or so. It is interesting to compare the technical content of what our young officers today are being taught compared to Collins and Farncomb and the 1913 entry. In general terms they had a much higher level of technical content than today - perhaps there is a message there and it is something that we are going to have a close look at.

In the current economic climate the RAN has had lower separation rates than has historically been the case which is a significant turnaround from a few short years ago. They are on the rise, however, and we still face a fierce battle for talent particularly for technical personnel as our own Navy-trained personnel remain highly sought after and not just in the resource sector. In Navy we are trying a broad range of initiatives to demonstrate that we have shifted from an 'overhead' view to an 'enabling' view of this critical workforce.

The drive to retain our trained talent has included some very tightly targeted bonuses, industry outplacements, a redesign of our Fleet Support Units and broader professional development programs which I think show that we are serious.

This will take time and there is no easy fix. In the meantime we are looking to augment our talent base through the use of lateral transfers from other navies. While Creswell would probably not have described it as such, this is exactly what happened in the early life of the RAN. We are working very closely with the Royal

Navy to ensure that we can help be part of the solution as they downsize.

What began 111 years ago as the development of an Australian Navy has grown and matured into a force which I am immensely proud of. We are on watch around the world, ashore and at sea, on peacetime and active service getting on with the job we have been given. In doing that I think we owe a great deal to the early leadership of the Navy and how they shaped the organisation here in Melbourne over a century ago. I said last time I gave this address that Creswell's real legacy was that he ensured that the Navy was set up in such a way that it could be sustained and grown as the strategic situation demanded. My time in this job has only reinforced that belief.

This is the enduring task for the organisation's leadership; we are stewards after all, stewards of this great national institution. We must not allow ourselves to be consumed by the parochialism of the present. Stewardship demands due regard to the past, it demands that we understand the challenges of today, that we nurture what we have and also that we have a very clear view of where the organisation needs to be positioned in the future.

We stand on the cusp of one of the most significant periods of naval modernisation for many decades in this, the Asian Pacific century, this inherently maritime century. Guided by the example of Creswell and Clarkson, we are getting on with this challenge. ➡

VADM Ray Griggs
(Courtesy Navy)



GERMAN CORVETTES

German Navy type K130 corvette *FGS Braunschweig* (F260) has been fitted with its brand new main weapon system, the RBS15 MK3 missile system.

Four missiles launchers have been fitted amidships. In total the German Navy has procured thirty RBS15 Mk3 missiles.

The missile is manufactured jointly by German company Diehl BGT Defence and the Swedish company Saab Bofors Dynamics. The RBS15 is a heavyweight anti-ship missile which can be employed to engage to large surface targets as well land targets from the sea. It is a "fire and forget" weapon, equipped with a radar seeker,

approaching its target in very-low-level flight up to ranges of more than 200 km.

At the moment the K130-class corvettes are the only combat ships of the German Navy, armed with the RBS15 missile system.

MICHAEL NITZ



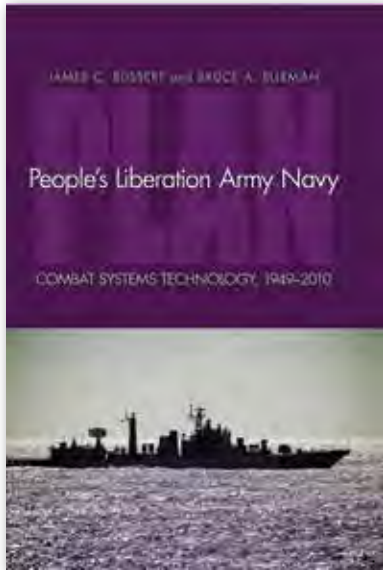


HMAS Gascoyne under way inside Jervis Bay, NSW, Credit: Able Seaman Brenton Freind



HMA Ships Newcastle and Warramunga pull up to stations 1 and 2 for a replenishment at sea from HMAS Sirius, HMNZS Te Kaha takes up lifeguard station to the rear of the evolution

Book Reviews



PEOPLE'S LIBERATION ARMY NAVY: COMBAT SYSTEMS TECHNOLOGY, 1949-2010

By James C. Bussert and Bruce A. Elleman

Naval Institute Press, ISBN 978-1-59114-080-1, 256 pp., USD \$36.95

Reviewed by Sam J. Tangredi

For any specialist on Chinese military affairs or comparative world naval capabilities, Bussert and Elleman's compendium of the PLAN's combat systems and their historical development is a must-have reference. It thoroughly details in a single volume the existing unclassified knowledge of People's Republic of China naval technology from 1947-2010, categorizing the information by: ship type; the principal warfare areas of AAW, ASW and mine warfare and their related sensors and systems; and system integration, electrical and training issues. It is not, however, an integrated, narrative history of these developments or the PLAN overall; nor do the authors intend it to be. Unfortunately, in packaging the book, the Naval Institute Press makes the

intended limits somewhat unclear, deleting the subtitle in some of its descriptive materials and even on the book's spine. The cliché that you can't judge a book by its cover is accurate here.

But what is inside the book is valuable. It is an excellent and straightforward supplement to such Western-source official publications, such as the US Office of the Secretary of Defense's annual *Military Power of the People's Republic of China* – straightforward in that the authors, unlike governmental officials, do not have to worry about whether their language is perceived as alarmist or codling. Their conclusions are definitely not alarmist; despite 60 years of effort, over 80 percent of PRC naval technology is derived from foreign sources, with their most operationally-capable platforms being Soviet/Russian-built. Even the PRC's much-speculated-about Anti-Ship Ballistic Missile (ASBM) program is largely derivative of what was a partially-pursued Soviet capability. But characteristically (perhaps best described as rigorously) sticking to their appointed limits, the authors do *not* discuss the PLA ASBM in much detail since it is a PLA Second Artillery program, *not* a PLAN weapon. For the capabilities they do review, the authors' overall conclusions are down-scale: "China's much publicized modern imports cannot alter the fact that more than three-quarters of the PLAN's submarines, surface ships, and aircraft are almost totally obsolete for today's modern combat requirements." (p. 178)

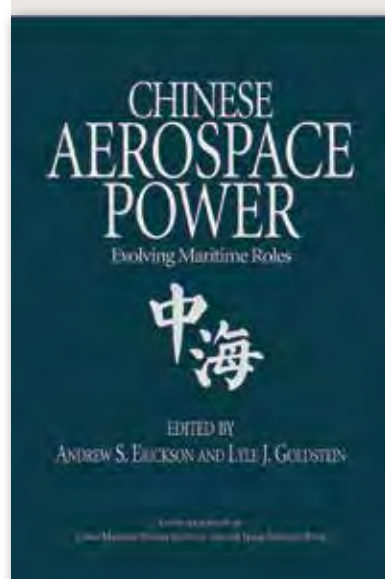
The book is strongest on PLAN submarines and submarine weapons systems, reflecting co-author Bussert's particular area of professional experience. Their conclusion is that the newest PLAN diesel-electric submarines are their most valuable assets in any conflict with a foreign

navy – even more so than any aircraft carrier. There is, however, not much to be said on undersea mine warfare, an area that the open literature is almost barren. The authors do point out that the South China Sea is an area where naval mining can have a significant role, but they have no good estimate on what the PLAN can actually do.

For the more general reader, the final chapter – entitled "The PLAN Fleet in the Twenty-first Century" – is of the most interest. It is there that the authors allow themselves some room to speculate – in a most reasonable, considered manner – about future developments at sea. The portrait they paint is one of a fleet developed very deliberately along the lines of the Soviet Navy: a sea denial force specifically designed to hazard the U.S. fleet and attrite its forces as far as possible from contested areas, such as Taiwan. As with the Soviet Navy, long-range anti-piracy operations or port visits are by-products. This is in keeping with the current general assessment that the PRC is focused on developing an overall "anti-access" strategy. However, many of the necessary systems for anti-access, such as for satellite reconnaissance and long-range strike, are not under the exclusive control of the PLAN, so the authors do not discuss the anti-access concept beyond pointing to Jiang Zemin's 1997 direction to the PLAN to "build the nation's maritime great wall," and to the PRC's January 2007 ASAT test. (p. 185)

In admirably sticking to its limits, the book raises an interesting analytical question: can navies or naval developments truly be independently assessed, or do they require a joint context in order to make sense of their impact? I would argue the latter, but that is admittedly an USN-centric view. Although there is a brief discussion of the on-again, off-again PLA Marine Corps and amphibious capabilities in

a chapter with coastal defense, Bussert and Elleman's volume is limited by design to detailing systems for 'war at sea' rather than 'war from the sea.' It does what it sets out to do – assemble the open information and chronology of PLAN war-at-sea-systems developments in one place. The book, therefore, is a detailed and valuable contribution, but – as intended – not in itself a full assessment of the PLAN future potential. ✨



CHINESE AEROSPACE POWER: EVOLVING MARITIME ROLES

Edited by Andrew S. Erickson and Lyle J. Goldstein,

Naval Institute Press, Annapolis MD, 2011

Reviewed by Dr Gregory P. Gilbert; Air Power Development Centre

Chinese Aerospace Power: Evolving Maritime Roles, the fifth book in the "Studies in Chinese Maritime Development" series, continues to set the standard for our understanding of Chinese military affairs. This book offers a thorough analysis of how China's impressive advances in air and

space capabilities are influencing the military balance in the Asia-Pacific. It avoids hyperbole by presenting the reality of Chinese military capabilities, experiences and perspectives.

Chinese Aerospace Power is a collection of papers derived from the US Naval War College's China Maritime Studies Institute's fourth annual conference, "Evolving Maritime Roles for Chinese Aerospace Power", held on 10-11 December 2008. The papers have been supplemented and brought up to date prior to publication, and although many of the capabilities discussed continue to evolve, the book brings together the fundamentals that underpin China's developing strategy and doctrine.

China's aerospace power is not some great centrally controlled behemoth, rather it is a complex reflection of western aerospace power "with Chinese characteristics". The conference brought together USN and USAF experts to further what has since become known as the Air-Sea Battle – a concept that also has major implications for the defence of Australia and its interests in the Pacific.

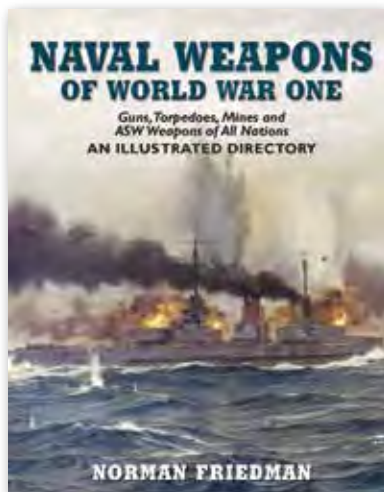
Some aspects discussed within this book will undoubtedly be known to a few specialists but few Australian warfighters will have expertise in the full depth and breadth covered. It is not a book for the faint-hearted, and while a few Australian commentators may try to support their opinions on international relations by bluff and/or bluster, these papers are the epitome of scholarly endeavour. They use detailed analysis to back-up their claims and their judgements are supported by relevant sources.

Chinese Aerospace Power provides great insight into China's recent advances in areas such as intelligence, surveillance and reconnaissance (ISR), air launched cruise missiles (ALCMs), anti-ship ballistic missiles (ASBMs), as

well as space technologies. The book contextualises the introduction of China's carrier fleet, the earliest phase of which was demonstrated when a carrier, based around the ex-Russian *Varyug*, actually commenced sea trials in August 2011, well after this book was published. The Chinese aerospace transformation continues but this book will remain a valuable introduction to Chinese aerospace power for some time to come.

Overall *Chinese Aerospace Power* provides an excellent introduction to China's current aerospace transformation. It is a must-read for ADF members who contribute to strategic and/or capability decision-making, irrespective of whether they are serving with Navy, Air Force or Army. It is also recommended for anyone who wishes to come to grips with the logic and grammar of modern warfare in the Asia-Pacific region. ✨

Book Reviews



NAVAL WEAPONS OF WORLD WAR ONE *Guns, Torpedoes, Mines and ASW Weapons of all Nations*

An Illustrated Directory

By Norman Friedman

Seaforth Publishing, UK

ISBN 978-1-84832-100-7

*405 pages; profusely illustrated with
photographs and technical drawings;
£45 recommended*

*Reviewed by Commander David
Hobbs MBE RN (Ret'd)*

World War I was fought by navies equipped with new, technically complex, weapons, far in advance of those in service only a generation earlier which had changed the nature of naval warfare without being realistically tested in action.

Senior officers who had first gone to sea in an era when the tactics used by wooden sailing ships with smooth bore, muzzle-loading cannon were still in use had to understand the impact of the new weapons and devise tactics to use them effectively. Fast-firing heavy guns and primitive contact mines had been used during the Russo-Japanese War of 1904 but by 1914 it was fair to say that no fleet commander had experience

of combat with the weapons that were now in service although several, including Jellicoe, had been responsible for their specification and introduction into service. Submarines, long-range torpedoes and reconnaissance aircraft had clearly made the time-honoured strategy of close blockade untenable and long-range guns and fire-control systems were considerably more advanced than those that had been used at the Battle of Tsushima but they needed time and constant practice to make them effective.

In order to understand the way in which commanders deployed fleets, you have to understand their perception of the new weapons they had available to them and those that their adversaries would deploy against them. The practical results of gunnery duels at high speed and ranges far beyond those that had been thought possible in pre-war exercises, once understood, had to be assimilated quickly by admirals in their fighting instructions to gain a tactical edge over a well-equipped and determined enemy fleet.

This book has been eagerly awaited and fully lives up to that expectation; it would be difficult to imagine a better finished product. Every weapon used by every navy is given a detailed analysis with technical specifications, photographs, drawings and a summary of their conception, development and use. In the case of guns the different shell designs with differing 'calibre radius heads' are discussed and compared in terms of range, accuracy and effect. In the section on the largest guns ever fitted to an Australian warship, the 12-inch BL Mark X* in *HMAS Australia* for example, we learn that the gun weighed 58 tons and fired a shell that weighed 850lb, of which the burster in a 'common' round weighed 83lb 4 oz. An armour-piercing round could penetrate 12 inches of Krupp armour at 7,600 yards. The gun is well illustrated in the frontispiece which shows an excellent

view of *Australia's* forward turret and bridge structure looking aft from the bow.

The 6-inch Mark XI* gun, the type fitted to the cruisers *Melbourne* and *Sydney* is illustrated by one of the latter's guns on its PVI mounting in the Australian War Memorial. Unfortunately, it is missing its breech, controls and telescopes but it has the merit of having made history in the action against *Emden*.

The book is divided into sections which cover guns, torpedoes, mines and ASW weapons. Significantly the section on guns fills 316 pages out of this 405 page book and the section on British guns within it fills 104 out of the 316 pages. Similar ratios apply in the other weapons' sections showing the dominance of the Royal Navy during the period in question.

Throughout the book measurements are given in the form provided by the sources to avoid 'errors in translation' and the inevitable 'rounding errors'; thus British weapons appear in imperial units and German ones in metric. This is a good idea and it is not difficult to do the conversion with a calculator if one wants to. Unlike his previous books, the author has not footnoted the text because he feels that it is impossible to provide a source for each piece of data in an encyclopaedia of this kind. Instead he has provided an extensive list of sources and their locations.

For me the most fascinating elements of this book are the extensive introductory pages in each section that explain the origins of the weapons, their design, manufacture and tactical use. Here we find why guns and other weapons evolved in the way that they did, whether they measured up to expectations, the part they played in the evolution of conflict at sea and how tactics evolved to make best use of them.

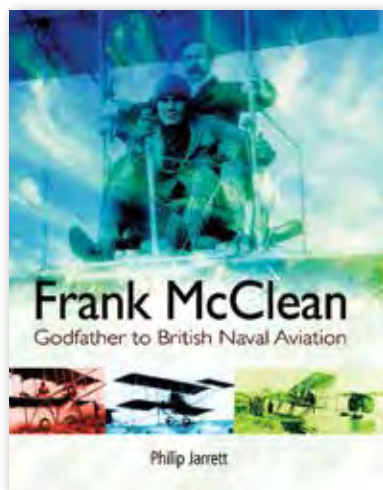
Many of the weapons described were still in service in World War II

or can be considered as prototypes of later weapons, giving the book a wider value in the study of twentieth century conflict. The author explains how the development of one weapon led to the modification or counter-development of others; for instance the need for long-range gunnery in the Grand Fleet was initially seen as important to inflict damage on the enemy while remaining out of range of the torpedoes that German battleships were believed to be capable of firing from the line-of-battle.

With his usual incisive analysis, Friedman notes how the use of new weapons affected the tactical thinking of commanders in action. For example he notes that Jellicoe was the first to understand that to control a large fleet of warships in action he needed a tactical plot but that, as with so many novel ideas, the concept was not tested realistically before it was used in action. Some weapons achieved greater effects than imagined, others less so, and the British fascination for underwater weapons becomes apparent when one learns that many of the fears expressed by Jellicoe in 1914 actually reflected planned or current British thinking on tactics.

In summary this is much more than a directory of weapons used between 1914 and 1918, it is an important work that is fundamental to an understanding of the war plans and tactics used by the fighting powers during a period of unprecedented naval warfare. It will appeal to anyone who wants to understand how and why the conflict evolved the way it did and may change the perceptions of those who had not fully appreciated the properties of contemporary weapons and their effects.

My review copy has been given an important place in my library and I recommend it highly. ✨



FRANK MCCLEAN: GODFATHER TO BRITISH NAVAL AVIATION

By Philip Jarrett

Seaforth Publishing

ISBN 978-1-84832-109-0

175 pages plus Appendices

**Reviewed by CMDR David Hobbs MBE
RN (Ret'd)**

Little has been written about the rapid development of naval aviation before the formation of the Royal Naval Air Service in 1914 with the result that not enough is known about a period of exciting and dynamic progress. Philip Jarrett's book helps to fill this gap, provides fascinating insight into period that deserves greater attention and puts into context the way in which aviation pioneer Frank McClean helped the Admiralty to establish a 'school' for training aviators earlier than would otherwise have been possible.

Lieutenant Arthur Longmore, an Australian serving in the Royal Navy, was one of the first four officers chosen from hundreds of volunteers to undergo flying instruction at Eastchurch in 1911. They did so in aircraft provided as a patriotic gesture at no initial cost to the Admiralty by Frank McClean, flying from a site he

had already donated to the Royal Aero Club but the Admiralty had to pay for the aircraft's running expenses, maintenance and repair. It also paid for the officers to be given courses of technical instruction with Short Brothers at their various facilities in the UK and for them to visit to the Gnome aero-engine factory just outside Paris. Flying instruction took place under the auspices of the Royal Aero Club, the only organisation within the British Empire at the time that could award certificates of qualification to pilots who passed the internationally recognised flying test. Longmore was awarded certificate number 72 on 25 April 1911.

It becomes clear, reading this book that the Admiralty wanted its officers not just to become pilots but to become instructors with knowledge across a broad range of aviation subjects. They were then expected to teach the numbers of men that followed in the rapid expansion of the Royal Navy's new air arm.

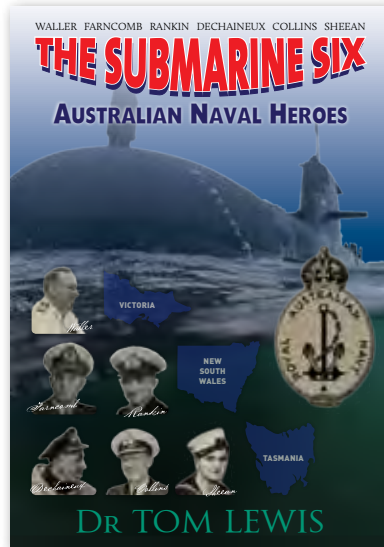
This was an era when every flight was reported in the specialist press and modifications to the early designs were eagerly noted and discussed. This wealth of material provided much of the information on which the author based his work but he also had access to McClean's photographic archive which is now in the possession of the Fleet Air Arm Museum at RNAS Yeovilton and which helped to produce the book.

In 1911 different manufacturers used different methods of controlling aircraft in flight and their relative merits were the subject of lengthy debate. Even the individual aircraft had personalities and the early machines bought by the Admiralty were all given nicknames by their pilots. There were, for instance, the 'field-kitchen' which suffered from over-heating; the 'triple-twin' in which two engines

Book Reviews

drove three propellers and the 'gnome-sandwich' in which the 'filling' was the pilot who sat between two engines and their propellers, one pushing and one pulling the aircraft in flight. When the early pilots took off from the deck of a warship or attempted to carry out a visual search for a dived submarine they were doing something for the first time and finding new limits the hard way. It is easy to forget how very few flying hours they had by our modern standards. Jarrett brings this era to life and puts the early pioneers into their historical context with a style that is both informative and easy to read.

The Navies of the Commonwealth share a common aviation heritage that began with the enthusiastic steps described in this book. It gives an accurate picture of experiments that took place before the Royal Naval Air Service or Royal Flying Corps were formed and there is much more including the development of balloon flight and McClean's flying expedition up the Nile from Cairo to Khartoum. For those interested in reading about the first days of fixed-wing naval flying in the Commonwealth and their place in a contemporary context, this is an important book and I thoroughly recommend it. 🦋



THE SUBMARINE SIX **Australian Naval Heroes:** **Waller, Farncomb, Rankin,** **Dechaineux, Collins, Sheean**

Dr Tom Lewis

ISBN 970987151919

Avonmore Books
www.avonmorebooks.com.au

201 pages

Reviewed by LCDR Desmond Woods

This new book by Dr Tom Lewis has had a long gestation period. The author has been gathering information and interviewing those who knew his subjects for the last decade. Some of those he interviewed in his early research period died before the book was published. Had this research not been done, much of the first hand information and insights recorded in the book would have been irretrievably lost. Dr Lewis has done good service to posterity by ensuring that elderly eye witnesses to the deeds and lives of these great Australian sailors have had their final say.

By the time this review is published the findings of the current investigation into the recognition of unrecognised acts of gallantry may have been

produced. This book has been given in manuscript form and in final format to those making those recommendations. Time will tell whether the nation will use this process to remedy the injustice done to the RAN heroes who are among those under consideration. The fog of war and national amnesia with regard to its naval history caused their deeds to be unrequited for generations. If the oversights of the past are put right then this book will have played its part in providing justice at last for these men, their families and for the Navy and the nation.

The Submarine Six comes with a foreword by VADM Crane, written in June 2011, aligning the book with the centenary of the RAN and pointing out that the Collins class are the only ships in the RAN which bear the names of individuals.

This handsomely illustrated work tells the story of those six sailors in detail. Effectively, it is six short biographies, but it also covers a very great deal of Australia's naval history from the early 1920's until the end of Collins' naval career in 1955. This is a considerable achievement. Naturally the main focus of the book is the 1939-45 war which took four of its subjects' lives. Tom Lewis builds his account of the careers of each of the five officers through the scores and remarks made on their personal reports, and through many interviews and written accounts.

The four who died fighting, Waller, Rankin, Dechaineux and Sheean, have now become, at least within the Navy and the naval retired community, men garlanded with imperishable fame. But they are still largely unknown to the general Australian public. When the author was interviewed on radio while promoting the book it was clear that the interviewers had no prior knowledge of these sailors' achievements until they had read the book and were somewhat bemused that they had never

heard of these Australian heroes. The bloodied digger in trench and jungle is understandably the prevailing image in the public mind of Australians at war and it appears to be all that is taught in Australian school textbooks. This book should be a set text in Australian history classes nationwide. It should also be mandated reading for all New Entry Officers at the RANC. Five of its subjects were graduates of the RANC. The inspiring life stories are all here.

John Collins, was a brilliant ship handler and victor over the *Bartolomeo Colleone*. He commanded *Shropshire* and led Australia's fight back in the Pacific until he came as close as a man can to being killed in action and yet survive. He recovered from his wounds and led the Navy into the post war world as an advocate for air power at sea and prepared the service for the Korean war.

Emile Dechaineaux, the Tasmanian son of a French artist who distinguished himself during the evacuation of Dunkirk, was the warm-hearted father of his ships' companies until he was struck down on *Australia's* bridge, standing next to Collins, by air attack at Leyte Gulf. His death from internal wounds robbed the Navy of an officer who, had he lived, would have been a very great leader at sea for the final year of the war and in the post war period.

Teddy Sheean's familiar story is well told. His selfless split-second decision to return to his Oerlikon gun and fire in defence of his mates being strafed in the water should be embedded in the national consciousness as the ultimate example of mateship and duty, combined in one young lost life. His decision to sink with *Armidale*, still fighting back, was an act of sublime courage and self-sacrifice in the highest traditions of the Victoria Cross, which he so richly deserves. He brought great honour to himself and his little ship and his story has the power to move

no matter how often it is told. It was told to an ANZAC Day audience in the town of Armidale a few years ago. Many of them knew nothing of this Tasmanian boy whose corvette bore the name of their town. The crowd was visibly moved.

Harold Farncomb was the consummate naval professional who never put a foot wrong while at sea in the most testing of command positions. He repeatedly distinguished himself in command of an RN carrier and the RAN's cruisers. He was a great Australian sailor who was tested in battle and never found wanting. He fought a successful battle in peacetime to recover from mental war wounds and went on to be a fine barrister.

Robert 'Oscar' Rankin, was the quiet methodical hydrographer who when given command of an under-armed 'sloop of war' *Yarra* demonstrated his fighting spirit and determination to do all that he could to protect his embattled convoy, or die trying. *Yarra's* last fight and the gallantry of Rankin's men should be finally recognised by her CO and his gunner LS 'Buck' Taylor both receiving posthumous Victoria Crosses.

Finally there is Hector Laws Waller, the finest Captain (D) and greatest natural leader of RAN sailors in war that Australia has ever bred and the RANC trained. He took the near obsolete and mechanically unreliable flotilla of elderly destroyers, that a penurious Australian government gave him, and turned it into a sharp weapon of war. He demonstrated to Admiral Andrew Cunningham, C-in-C Mediterranean, the steely calibre of Australian sailors in battle. His deeds commanding *Stuart* at Matapan, attacking Italian heavy cruisers at point blank range, and illuminating them with searchlights, are unsurpassed in our naval annals for cool courage and elan. His death in 1942 and the loss of *Perth*

and half her ship's company in Sunda Strait was the tragic finale to a heroic and full life, well lived on many levels. Mike Carlton's recent fine book *Cruiser*, published in 2010, reminded a new generation of the life and death of this great naval officer who combined being an extraordinary leader and a working seaman. In far fewer pages Tom Lewis has distilled the essence of "Hard over Hec Waller" and illustrated his account with the anecdotes that round out this kindly, wise sailor so beloved by his men. Waller too is among those rightly under consideration for retrospective honours.

Of note is the fact that only two posthumous awards were available during the war: the VC or a Mention in Despatches. Why this should be so is not entirely clear, but the effect was that Waller and Shean were both awarded only an MID for the actions in which they died. Rankin did not even receive that award presumably because there were none of his men left who were senior enough to have the credibility to speak or write of his selfless courage.

This book is written to be read by those who know and understand the national significance of the men it pays tribute to, and by the general public. For those for whom 'navy ways' are new information there is a wealth of detail on the naval context in which these six lives were lived. The book contains a glossary and an opening chapter containing a wide range of information on the Navy and its people. This is a definitive work and will be consulted and enjoyed for decades to come, long after the Collins class have been superseded by the future submarines now under discussion. The names of the submarine six will be with us forever, whether or not future ships carry them, and whether or not overdue recognition is now paid to the skill and courage of these great Australians. *Submarine Six* is highly recommended. 🚢



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Visions from the Vault

LINGAYEN OPERATION BOMBARDMENT — 8 JANUARY 1945



The battleship *USS Mississippi* bombards Luzon in the Philippines during the Lingayen operation on 8 January 1945. She is followed by the battleship *USS West Virginia* and the heavy cruiser *HMAS Shropshire*. It was during the invasion of Lingayen that *Shropshire's* near

sister, *HMAS Australia*, survived no fewer than five hits by Japanese kamikaze aircraft. The destroyer *HMAS Arunta* was also damaged by air attack. *Shropshire's* close-in air defences were likewise kept busy, accounting for several of the enemy. Despite some near misses, she was

lucky to be one of the few Allied heavy ships to escape damage. ✦

(*Naval Historical Centre 80-G-301229*)

ANI ON-LINE: A GUIDE TO THE NEW WEBSITE.

Our new website is now on-line! In addition to the features available on the previous site, the new site also features a library of past journals, a discussion forum, a news section and member list. This short guide is designed to help you take full advantage of the new features.

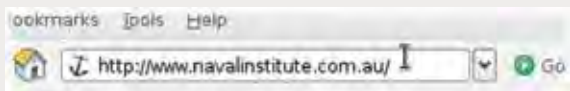


Figure 1

OBTAINING AN ACCOUNT

In order to access the new features of the site you must have a user account for the website. If you have a current subscription to the ANI, navigate to the website www.navalinstitute.com.au using your web browser (figure 1), click the "Members Login" menu item (figure 2), then click the link to download an application form. Fill in the form, then fax or post it to the ANI Business Manager. Once your account has been created, you will receive an email that outlines your member ID and password.



Figure 2



Figure 3

LOGGING IN TO YOUR ACCOUNT

Once you have your account details, you are ready to login and access the new features of the site. In order to login, navigate to the website (figure 1) and click the "Members Login" item (figure 2). Enter your member ID and password as they were provided to you, then click the "Login" button. The case of the member ID and password are important: i.e. "CaSe" and "case" are considered entirely different words by the authentication system. Each letter of the password will appear as a single "s" to prevent others from seeing your password as you type.

If you have entered your details correctly, you will be presented with the news page. The grey status bar at the top notifies you of the account you are using (figure 4). You are now able to access all of the new features of the site.

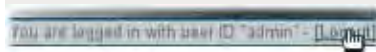


Figure 4

LOGGING OUT OF YOUR ACCOUNT

In order to protect your identity and to prevent malicious use of your account by others, you must log out of the site when you are finished browsing. This is especially important on public computers. In order to log out, click the "Logout" link in the grey status bar (figure 4).

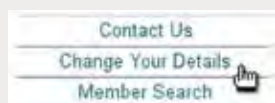


Figure 5



Figure 6

CHANGING YOUR DETAILS

When your account is created, only your member ID and password are stored in the system for privacy reasons. However, you may provide other details that are visible to other ANI members. In order to change your details, login and click the "Change Your Details" menu item (figure 5). Then select the "change" link (figure 6) next to either your personal details or password. Change the text appropriately and click the "save" button (figure 7).

The personal information that you provide will be visible to other members of the ANI but will be hidden from members of the general public. You may provide as much or as little detail as you wish but none of the fields are compulsory. However, you may not change your member ID as it is the link between the on-line database and our off-line records.

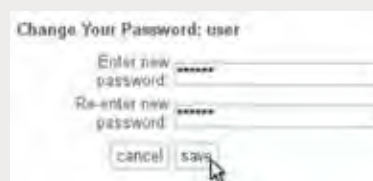


Figure 7

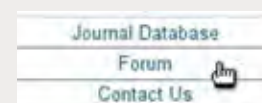


Figure 8

PARTICIPATING IN THE FORUM

In order to post topics and replies in the discussion forum, first login and click the "Forum" menu item (figure 8). Then select a forum that you would like to view by clicking its "View Topics" button (figure 9). Select a topic that you would like to read by clicking its "View this topic" link (figure 10). If you are not interested in any particular topic, you may add your own by clicking the "Add New Topic" button (figure 10). Similarly, once you are viewing a topic, you may post a reply by clicking "Add New Post". Fill in the heading and body of your reply and click the "Submit" button to add your reply to the topic. If you change your mind while writing your reply, you may click the "Cancel" button and your reply will not be added to the topic.



Figure 9

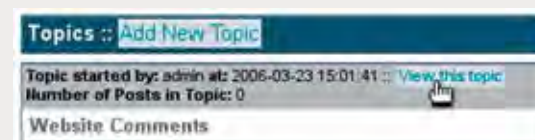


Figure 10

FURTHER QUESTIONS

If you have specific questions regarding website features or even a feature request, post a topic in the "Website Questions" forum and a site administrator will reply. Otherwise, happy browsing!

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Don't indent, and leave left justified.

Separate paragraphs by one line. Single spacing only. Use one space only after stops and colons.

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Use numbers for 10 and above, words below. Ship names use italics in title case; prefixes such as HMAS in capitals and italics. Book and Journal titles use italics.

Use single quotation marks for quotations. Do not use hyphens for any rank except Sub-Lieutenant.

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So:

Adkin, Mark. *Goose Green*. London: Leo Cooper, 1992.

Adler, Bill (Ed.) *Letters from Vietnam*. New York: EP Dutton and Co., 1967.

Articles use quotation marks around their title, which is not in italics.

If citing web sites please use the convention:

Australian Associated Press. "Army admits mistakes in SAS investigation". 17 February, 2004. <http://www.asia-pacific-action.org/southseast asia/easttimor/netnews/2004/end_02v3.htm#Army%20admits%20mistakes%20in%0SAS%20investigation>

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the end of the article, please supply full honours - Lieutenant Commander Bill Crabbe, CSC, RAN - unless you would prefer not to use them. Then please supply a paragraph on yourself, to a maximum of 50 words, including any qualifications you would like listed, and any interesting biographical aspects. **If possible please supply a colour or greyscale head and shoulders e-photo of yourself** for use alongside the article title.

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