



Journal of the Australian Naval Institute

No 117



Winter 2005

AUSTRALIAN NAVAL INSTITUTE

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ISSN 0312-5807

The *Journal of the Australian Naval Institute* is printed by:
New Millennium Print 1/38 Kembla Street, Fyshwick, ACT 2609

Front Cover: HMAS *Sheean* and HMAS *Armidale* (RAN)
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The grand illusion of an Australian merchant marine

*Commander Andrew Brown, RANR**

The concept of rebuilding Australia's merchant marine into a viable commercial operation with a capacity to provide logistic support for the Australian Defence Force should such support ever be required has been a very emotional topic for some writers in recent times. Unfortunately, many of the arguments put forward in support of positive Australian Government intervention in order to re-establish an Australian merchant marine are based on a number of misconceptions.

Foremost amongst these is the proposition that for a nation such as Australia to be able to project maritime power in its area of interest it must be able to requisition, as opposed to chartering on the open market, appropriate shipping to support its operations in time of need. The examples frequently quoted are that of the Falkland Islands campaign and of the East Timor operation, and unfortunately both are very poor examples to support the proposition.

In the case of the Falkland Islands campaign the United Kingdom was faced with a requirement for a moderate number of certain types of merchant vessels. The UK was fortunate in that its registers held the required vessels but few could be used without - in some cases, substantial - modifications being made and it was fortunate that its internal political structure and legislation permitted the Government to take ships up from trade. These are not factors to be glibly dismissed. The UK's merchant fleets operate in a very different environment to that found in Australia. It has, for example, a number of cruise liners on its registers as they are required for the substantial North American and European tourist markets. However, the point has been made more than once that it was a good thing that the UK did not require one more merchant ship over those it requisitioned, for it had no more suitable ships and would have had to charter in additional shipping if required.

This point should not be lost on Australia. It is, from a defence perspective, pointless for Australia to re-establish and maintain a merchant marine unless it contains ships that will be useful to the ADF. Bulk carriers and LNG tankers (common on the Australian register) are not so useful; RO-RO ships (especially truck carriers) and refined product tankers more so. Those useful ships that may still be found on the Australian register are all gainfully employed, so that could not just be requisition from trade unless they were replaced (which would almost

defeat the object of the exercise). So you would need not just to build up a merchant fleet *per se*, but one that held additional capacity over what that fleet was required to do on a daily basis (we do not expect to have to fight any more World Wars, so current trade could not be disrupted) and also which was relevant to the ADF's operational capabilities.

And this is the rub: such ships are expensive to build and costly to run and it is a certainty that the ADF is not going to pay to have such a logistic support fleet lying at anchor on the off chance it will be required. So the ships will have to work to pay their way, and the first thing that will have to be sorted out is where they will get work from and how much nett profit they will be able to generate (or, in other words, how costs are to be kept at a minimum). In basic terms, this means that the ships are going to have to be configured for their merchant trade commitments and by definition that means that few of them will be built to meet all the ADF's requirements.

The idea that the UK's merchant ships were 'simply' requisitioned or that the concept of requisitioning ships is always superior to chartering vessels needs to be quickly deflated. Merchant shipping used in support of Australia's East Timor operation was chartered, not requisitioned, and this proved to be adequate for Australia's purposes.

Once a vessel is chartered the charterer may do whatever it likes with the vessel so long as the actions it takes are consistent with the charterparty. If the charterparty is drawn widely enough this will give the Australian Government enough flexibility as to how to use each chartered ship: it can be commissioned as a warship (ie HMAS *Jervis Bay*) or used as a conventional merchant ship on a time or voyage charter. Ships can be modified (eg by fitting communications equipment, weapons systems or additional accommodation) providing they are 'made good' prior to being returned to the owner. The 'trick' is to use a well-briefed shipping agent who understands clearly what types of ships are required and in what time frames. Whilst this can be a costly exercise, it is considerably cheaper than owning the fleet itself.

So why consider having a merchant fleet that can be requisitioned at all? There are some potential difficulties in relying on requisitioned shipping, although perhaps these are not as obvious as first appears. For example there are few cost savings: the

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owners of requisitioned ships have to be compensated along similar lines to the cost of chartering, and if a requisitioned ship is lost then the Government is wholly responsible for all compensation (as opposed to a chartered ship that is insured). Ships appropriate to the task have to be located and requisitioned (and if, as will usually be the case, they are already full of cargo or passengers then they must be given an opportunity to unload) or chartered, and whether a ship has been requisitioned or chartered has no bearing on whether it will require modifications. There is, of course, always the very real risk that even with a modest merchant fleet at your disposal the type of vessel required will only be available if it can be chartered from another source.

What requisitioning does do is potentially save the Government from the worry (and these days, it is actually little more than that) that a suitable ship otherwise available for charter will be prohibited from being chartered by its flag State. However, merchant ships are remarkably fickle when it comes to flag State allegiance (as Australia has found out over the years) as such allegiance is just another aspect of operational costs. There are few costs a ship operator can vary by much at all, so whatever combination offers the best mix of convenience and lower cost will be selected. As a result there are few merchant ships these days that are truly 'national': irrespective of the flag they fly, their crews will come from a variety of nations, their owners and managers likewise and who can guess which nationalities own their cargoes. They are also a very competitive lot, and whilst some talk of 'international mercantile marine cartels' having the power to either cut off Australia's maritime trade or to set rates that would effectively cripple it, in fact currently this would simply not happen. If such cartels existed (there are 'conferences', to be sure, but none has such a power) they would soon find themselves undercut by operators who could see how to make a profit and nationalities would not feature in the equation.

The fact is that Australia's maritime trade primarily moves in foreign hulls because those in the merchant shipping business find it more convenient and profitable for it to do so. For example, crew costs (which are a function of not only how much you are required to pay your crew but also how many of them you are required to have on board any given ship) are a major factor and are effectively locked in from when the ship is built. They, more than anything else, are a cost that can be least affected by Government policy as no employee is going to consent to a cut in pay or conditions and maritime unions have fought long and hard for both. Even in the United States, where recent taxation

initiatives appear to have convinced some shipowners that they ought not leave the US it is unlikely that any who have done so will come back. Further, legislation (eg the US' Jones Act) will never be crafted just to keep an Australian merchant marine in existence: there are employment and shipbuilding issues that will lobby for their point of view (to name just two) and the political pressures brought to bear will inevitably skew the initial intent of the legislation. The practical effect of such legislation would be in the detail and there may well be some benefit to the ADF but that hinges on a number of factors. All that can be stated for certain is that any new ships would be built so as to attract whatever subsidies or compensation scheme were on offer - and that may or may not accord with the ADF's requirements.

The reality of life in maritime trade is that there really is no such thing any more as an 'Australian merchant ship' or one from any other nation for that matter. The commercial interests from any number of nations are inextricably intermeshed in any ship. Will having only Australian merchant ships operating off our coast make Australia more secure in some way that is lacking at present? Further, would this **of itself** deter a potential aggressor (traditional or terrorist), give greater security to the nations ports and maritime trade or even better assist the ADF in an operational role? Probably not. The role of chartered shipping in operations has already been discussed and, after all, the attack on the World Trade Center in New York in September 2001 was committed by American airliners initially (until the hijackers took over) crewed by American crews. The same thing can said about merchant ships: recent piracy incidents (such as ships' crews being locked away whilst their ship proceeded uncontrolled in major shipping lanes) have nothing to do with which flag the ships were flying or who was manning them.

The new international security codes being put in place in ports around the world will, undoubtedly, take time to establish and there will inevitably be breaches in the system. However, the world is for better or worse now moving down a path where merchant ships and ports will have to comply with these new codes or they will simply be isolated - commercially as well as politically - and will go out of business.

Certainly, the flag State is not to be ignored but when it comes to the economics of a merchant marine and of ensuring that above all else Australia can trade overseas (today and in the foreseeable future) with as few interruptions as possible then the issue of flag State, and whether or not it has its own merchant marine, is no longer major factor and is little more than a blip on the commercial radar.

An effects based approach to technology and strategy

*Lieutenant Commander Mark Hammond, RAN**

I would not put so many dollars and so many people into so good a target. Come to think of it, I would not put anything on the surface of the ocean – it's too good a target.

Edward Teller: the Aircraft Carrier after 1945¹
I must confess that my imagination...refuses to see any sort of submarine doing anything, but suffocate its crew and founder at sea.

H.G. Wells: the impact of the submarine in 1902²

Teller, the father of the Hydrogen bomb, can be forgiven for suggesting that surface vessels were obsolete over 50 years ago. He knew little about nuclear fallout and collateral issues that today limit the usefulness of atomic weapons. Besides, as demonstrated by H.G. Wells, predicting the impact of new technology on future naval operations and strategy has always been problematic.

The industrial revolution heralded an unprecedented arrival of new technologies. Steam propulsion replaced wind. The aircraft carrier and submarine added new dimensions to maritime warfare. These new ship designs found many navies unprepared for their impact, essentially because they revolutionised the maritime battlespace and provided the Means for wars to be fought in different, unprecedented Ways.

Today, the Defence Science and Technology Organisation (DSTO) suggests that the driving factor in ship design in the 21st century will be emergent technologies.³ Given that ship designs dictate their capabilities, and that naval operations are both enabled and limited by these capabilities, it may be possible to draw conclusions about how future naval forces will operate by interpreting the impact of forecast technologies on the capabilities of future vessels. Furthermore, an examination of the past thirty years, the era of the information revolution, may yield insights that enhance our understanding of developments expected in the next thirty years.

This article discusses how forecast technological developments in hull forms, propulsion systems, sensors and weapons might impact on how medium-power navies operate over the next 30 years. Firstly, forecast developments or 'emergent technologies'⁴ are reviewed and interpreted using Effects Based philosophy - a prism that enables clear articulation of the impact of new technologies on naval capabilities. Trends are then summarised and

assessed to determine dominant developments. Next, a medium naval force of 1974 is glimpsed to provide insight into what has really changed during the technology revolution of the past 30 years. Finally, the article summarises the likely impact of future technologies on medium-power naval operations over the next 30 years.

Effects based interpretation of emergent technologies⁵

Effects based philosophy describes physical, functional or psychological outcomes, events or consequences that result from specific actions.⁶ The Australian Defence Force (ADF) will operate its future forces within a National Effects Based construct.⁷ Another medium navy, the Royal Navy (RN) also embraces Effects Based Operations.⁸ As shown in Figure 1, the philosophy views military units (Means) as providing a variety of military options (Ways) for achieving strategic objectives (Ends). In this manner, technological changes to naval forces (Means) impact the **effects**⁹ that they can generate and, therefore, the Ways in which Ends can be achieved. Hence, the close relationship between strategy and technology. It is therefore both practical and appropriate to use this philosophy to interpret the impact of emerging technologies upon our future capabilities.

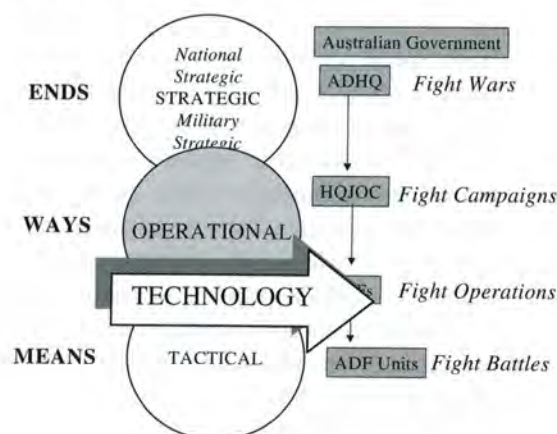


Figure 1: ADF Command, EBO & Technology¹⁰

Emergent technologies are '...technologies that may impact on future Naval ship design and construction'.¹¹ Typically, this genre is constrained

* Lieutenant Commander Mark Hammond graduated from the Australian Command and Staff College in 2004 and will assume command of the *Collins* class submarine HMAS *Farncomb* in August 2005.

to relatively mature, prototype proven or funded technologies. Whilst other concepts, theories and ideas exist, it is difficult and perhaps premature to attempt qualitative description of their potential impact until they have made the difficult transition from theory to prototype.¹² For the purpose of this article, therefore, forecast developments will be limited to emergent technologies in four areas - hull forms, propulsion systems, sensors and weapons.

Hull forms

Today's modern warship is typically a monohull vessel of varying length, breadth and draught, designed as required to maximise capabilities in terms of payload, sea-keeping ability, power projection and survivability. Forecast developments in hull design include advanced monohull (planing hulls, hydrofoils, wave piercing and Deep Vee hulls) and multi-hull designs (catamaran and trimaran, wave piercing, Small Waterplane Twin Hull (SWATH) and Surface Effect Ships (SES)).¹³ To gauge their impact on naval operations, these developments should be interpreted in the context of the effect created by the technology upon the platform.

All of these forecast developments increase vessel speed (Hydrofoils > 60 knots, Deep Vee > 55kts, Wave Piercing Mono-hulls: sea transport > 30 knots)¹⁴ and efficiency.¹⁵ As such, it is possible to predict a trend toward faster, more efficient naval vessels that have greater endurance. It is also noteworthy that the majority of designs inherently reduce vessel draught and acoustic signature.¹⁶

Three of these attributes - speed, efficiency and shallow draught - were examined in the context of High Speed Vessels (HSVs) in the Royal Australian Navy's (RAN) 2003 Headmark Experiment. The experiment demonstrated that HSVs provide excellent manoeuvre warfare capability in shallow littoral environments whilst producing significant targeting problems for air, surface and sub-surface opponents.¹⁷ However, as discovered by a United States (US) HSV project, operational effectiveness of current prototypes is attenuated by relatively poor sea-keeping in sea states greater than eight feet,¹⁸ although this deficiency might be overcome by advanced trimaran designs.

Trimaran designs afford hull-drag reductions of 20% or more whilst simultaneously enhancing the sea-keeping qualities expected of conventional mono-hull designs.¹⁹ Similarly, Surface Effect designs permit a catamaran hull to 'ride' over a cushion of air maintained between the hulls, reducing drag and noise signature and permitting beaching in some conditions.²⁰ Clearly, the trend is toward faster, quieter and more efficient shallow draught vessels.

There will also be continued advances in submarine hull design. Whilst propeller and propulsion changes account for the majority of speed improvements in current diesel-electric and nuclear submarines, advanced streamlining is becoming increasingly important. Vortex control devices and eddy break-up devices were used to counter hydrodynamic flow issues (with associated noise and speed consequences) on both the RAN *Collins* and US Navy *Seawolf* class submarines.²¹ This has had the effect of reducing acoustic signature and fuel consumption whilst increasing speed and endurance.

In summary, potential improvements in hull design produce the physical effects of improved fuel efficiency/endurance, reduced acoustic signatures, increased vessel speeds and improved access to shallow (or shallower) water. This bodes well for tempo-based strategy such as manoeuvre warfare, especially in the littoral. These trends may be further enhanced by propulsion system developments.

Propulsion systems

Propulsion Systems include propellers, propulsors and associated fuel and auxiliary systems. Forecast developments include enhanced electric propulsion, fuel cell technology, water-jet propulsors and supercavitating propellers. Again, these developments seek to increase vessel speed, efficiency/endurance and/or to reduce acoustic signatures. In the context of a naval vessel however, it is important to note that propulsion efficiencies can also enable greater power generation to support weapons and sensors.

Conventional marine propulsion systems convert mechanical, gas or steam energy into rotational propeller or directional water jet motion, whilst separate power generation sources provide for sensor, weapons and ancillary demands. Enhanced electric propulsion systems, as envisaged by the US Electric Ship concept, centre on Integrated Power Systems that use electric motors driven by a common power generation system to simultaneously provide power for sensors, weapons and auxiliary demands.²² This reduces the size and complexity of the power generation/propulsion system, freeing up space for other capabilities whilst improving fuel economy by 15-19%.²³ Developments in battery technology are evidenced by improved performance amid reduced size/weight of mobile phone batteries in recent years. Translated to the maritime environment, this has produced more effective conventional submarines with greater endurance and increased stealth. Just as the automotive industry is investing increasing amounts of money in electric propulsion and hybrid car designs, it can be expected that hybrid ship designs will follow. Perhaps the Royal Navy's Type 23 frigates and Type 45

destroyers represent a portal to the future of quiet, fuel efficient ship design.²⁴

Fuel Cell technology and Air Independent Propulsion are also likely to become more common.²⁵ German Type 212 submarines are at sea today, propelled by fuel cells. The technology has also been tested in a USN surface vessel.²⁶ Fuel cells create electrical energy from chemical reactions without moving parts, generating less heat and acoustic noise than conventional combustion processes.²⁷ However, there are associated speed limitations.²⁸ Overall, the technology affords increased stealth, endurance and efficiency.

Water-jets provide increased efficiency for vessels in the range 25 to 40 knots.²⁹ Located near the surface, they also allow a shallower vessel draught. Supercavitating propellers also improve vessel efficiency by increasing thrust,³⁰ allowing speeds measured in hundreds of miles an hour. The cavitation effect does increase noise signature, however, supercavitation technology may yet revolutionise naval power in the same way that the supersonic jet impacted air power.³¹

To summarise, advances in propulsion technology are likely to increase naval vessel stealth, speed and efficiency, with some technologies again enhancing shallow water efficiency and access. These improvements appear to reinforce hull design advances, potentially auguring an era of faster, shallower draught, quieter, and more efficient naval vessels. Again, manoeuvre warfare concepts are reinforced. However, future naval forces will require an array of intelligent sensors to maintain situational awareness to exploit enhanced battlespace access and manoeuvre.

Sensors

DSTO notes that 'Sensor development appears to be growing at an exponential rate in miniaturisation, sensitivity and applications.'³² Furthermore, predicting future sensor capabilities out to 30 years is significantly problematic because '...unpredicted technological advances can render systems obsolete mid development.'³³ That said, it may be possible to draw some relatively robust conclusions by reviewing current developmental efforts.

Some remote-controlled and autonomous sensors are already mature, particularly Unmanned Aerial Vehicles (UAVs) and Unmanned Underwater Vehicles (UUVs). HMAS *Warramunga* has controlled, tasked and received sensor information from a UAV.³⁴ The US has completed more than 300 UUV missions including mine-warfare operations in Umm Qasr during Operation *Iraqi Freedom*.³⁵ Future developments may include submarine launched UUVs³⁶ capable of conducting reconnaissance, mine-laying, inshore photography

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and beach survey work. UAVs similarly permit operations behind enemy lines, or in contested air space where the risk of casualties is unacceptable. Both UUVs and UAVs are embedded components of future forces for the RAN and RN.³⁷ Further advances in robotics and miniaturisation of power sources will inevitably increase the endurance, dexterity, reliability and flexibility of these platforms, perhaps rendering current maritime aircraft redundant.

In terms of communications, data-rates have steadily increased in the past thirty years and this trend is likely to continue. Directional Extra High Frequency (EHF) and Super High Frequency (SHF) communications enable platforms to transmit high volumes of information (including video) instantaneously, rendering forward deployed units (eg submarines and special forces) almost undetectable by today's interception technology. Furthermore, there have been significant advances in covert underwater communications that enable submarines to communicate with other submarines, ships, bottom sensors or sonobuoys without being detected.³⁸ The technology can also be adapted to control UUVs, or to switch on or off remotely activated mines without the need for an umbilical. The effect created by this technology is one of enabling and exploiting covert, integrated operations in hostile environments - again, enhanced battlespace access.

Sonar technology is also proceeding apace.

Multi-beam technology has enabled three-dimensional seabed mapping for commercial purposes. An early derivative called 'Petrel'³⁹ is now being fitted to RAN frigates.⁴⁰ The equipment enables real-time seabed analysis for mine avoidance, navigation and submarine detection. Similarly, submarines will be able to exploit this technology to aid navigation in shallow water, opening safe access to previously unsurveyed (or poorly surveyed) archipelagic waters, and enabling inshore mine-laying operations without the need to return to periscope depth to receive satellite navigation data. Other advances include Explosive Echo Ranging, Low Probability of Intercept sonar and Low Frequency Active Passive Sonar (to detect submerged submarines at greater distances).

Radar surveillance is becoming increasingly supported by satellite technology. Medium navies, embracing the network enabled concept, are realising the theatre level surveillance opportunities afforded by real-time satellite observations using a range of detection, classification, intelligence collection and communications capabilities. However, other technological advances are decreasing platform vulnerability by improving stealth, counter-detection, early-warning and decoy systems.

It is therefore difficult to quantify the gains that might be realised in the next 30 years as improvements in related fields vie for ascendancy in detection capability on the one hand, and stealth on the other. However, it is possible to surmise that the net effect on the future maritime battlespace will be networked forces informed by a diverse array of advanced organic and remote sensors,⁴¹ enabling greater access to the maritime battlespace and greater certainty in the maritime picture than is currently available. Naval forces will consequently demand longer range, more responsive and increasingly accurate weapons systems to maintain a reach advantage over their adversaries.

Weapons

Naval weapon systems can be broadly categorised as either above water or below water. Above water weapons are employed against surface vessels, aircraft and, increasingly, land targets. Below water weapons target a vessel on or below the sea surface - primarily submarines and ships. The objective is usually to destroy or damage the target; though in effects based philosophy the right terminology might be to 'neutralise the effectiveness of' the target. Future weapon systems will also exploit emergent technologies, and increasingly target them too.

Naval gunnery now employs rocket propelled munitions, improved computer-aided targeting and rapid-fire technology such as Metal Storm (1 million

rounds per minute, infinitely variable rate of fire).⁴² Rail guns and pulsed power systems are now being developed for electric ships that will still be in service in 2034.⁴³ Missile technology, whether ship, submarine or air launched, arguably demonstrates the same trends. Terminal homing capabilities now exploit third party guidance (eg laser designation) as well as providing options to home on heat or infra red signatures.

Similarly, laser technology continues to produce potential weapon applications, possibly in the area of missile defence. DSTO assesses that solid state laser technology will permit efficiencies that allow employment on naval vessels.⁴⁴ High power microwave weapons are also on the horizon (2010),⁴⁵ and variants called Masers (Microwave Amplification by Stimulated Emitted Radiation) may permit the employment of multi-megawatt pulses of radio energy against the electronics in missiles, UAVs or aircraft.⁴⁶ The 'effects' of these developments (against air, land or sea targets) include extended range, improved rate of fire and, in some instances, improved accuracy and lethality.

Advances in underwater weaponry, like sonar technology, continue relatively unabated. The 2034 generation of torpedoes and mines may be able to: recognise and counter most decoy systems; recognise and target specific vessels; exploit bottom topography to aid stealth whilst homing; engage at extended ranges that negate improvements in counter-detection technology, whilst remaining undetected until a point at which the kill probability approaches certainty. However, other advances may provide new challenges. Supercavitating bullets could produce an underwater Close-In Weapon System (CIWS) capable of engaging torpedos and mobile mines during their terminal homing phase.⁴⁷ Anti-torpedo torpedos and Submarine Launched Anti-aircraft Missiles (SLAM) may also arrive as technology continues to advance, perhaps maturing before 2034.⁴⁸ In fact, Dunk suggests that submarine technology advances will outpace anti-submarine developments, citing a reduction in effectiveness of maritime patrol aircraft as one likely result.⁴⁹

Again, the pace, complexity and diversity of developments render it difficult to predict a resultant 'balance of power' between stealth and detection on the future battlefield. Perhaps it is more productive to simply surmise that weapon engagement ranges and accuracy are likely to improve.

However, a significant shift in the balance may yet result from a revolutionary development, such as the ability to 'see' underwater to a range of thirty nautical miles or more, or the ability to consistently destroy torpedos or mines prior to impact/detonation. Alternately, the significant weapon developments of the next 30 years may in

fact produce capabilities that reliably target and disrupt an adversary's computer systems and information exchange capabilities. Perhaps the key to tactical and strategic advantage in 2034 may reside in the ability to employ weapons against sensors rather than platforms, to lever advantage by attacking the 'eyes', 'ears' and 'brain' of the opponent, before threatening the 'body' with lethal, surgically precise strikes.⁵⁰ Developments in electromagnetic interference technologies, including Masers, may yet find more targets in a network-enabled battlespace.

Hypotheses aside, the net effect of naval weapon development seems to point toward increasingly accurate, longer range, more reliable systems with greater rates of fire and lethality. The arrival of laser and microwave weapons, as well as highly advanced underwater systems, may shift the focus from attrition of equipment to neutralisation of systems through targeted electromagnetic interference. The continuing battle between development of detection and targeting systems versus counter-detection and counter-targeting systems render it difficult to predict revolutionary changes in this field.

endurance and efficiency. In many instances, they will also be increasingly effective in shallow water. Future platforms will maintain improved situational awareness provided by a diverse array of advanced organic and remote sensors, many of which can operate in hostile environments without risking human lives, enabling greater certainty in the maritime picture than is currently available.

All of this points toward future forces that are increasingly 'aware', more integrated, and therefore, perhaps, more difficult to effectively neutralise or defeat. Superficially, it would seem that survivability, efficiency and effectiveness are the big winners, particularly in shallow water. Perhaps this indicates improved capacity to exploit high-tempo manoeuvre warfare in Littoral environments.

However, improvements in sensors must be weighed against increased platform stealth and extended range, stealthier weapons. New missile and torpedo technology may yet be countered by new defence systems (eg underwater CIWS). Whilst increasingly accurate, longer range, more reliable systems with greater rates of fire, and perhaps greater lethality, are being developed, so are more



HMAS Newcastle (RAN)

Observed trends and their likely impact on medium-power naval operations

Interpreting forecast technological developments in terms of the effects they might have on naval platforms yields several conclusions. Firstly, future platforms will benefit from hull and propulsion improvements that provide more speed, stealth,

effective countermeasures and 'anti-weapon weapons' (eg anti-torpedo torpedoes, Masers). Therefore, apparent gains must be taken in context. It may therefore be prudent to contemplate how technology has historically impacted the way naval forces operate.

In broad terms, the RAN of 1974 consisted of aircraft carriers, submarines, destroyers and frigates, as well as logistic support ships, amphibious ships,

patrol craft, mine warfare vessels and hydrographic vessels. Based on current plans, the fleet of 2034 is likely to include submarines, air warfare destroyers, frigates, logistic support ships, amphibious ships, patrol craft, mine warfare vessels and hydrographic vessels.⁵¹ Aircraft carrier aside,⁵² the force structure appears fairly static. Similar comparisons can be made with the RN.

Over the past thirty years the RAN has engaged in operations in environments ranging from benign (eg humanitarian assistance) to hostile (eg 1991 and 2002 Gulf Wars). The RN has a similar history. Today's RAN employs advanced weapons and sensors, compared to the fleet of 1974, and its current ships and submarines are quieter and more tactically 'aware' than their predecessors were. Although they exploit technology to improve communication and cooperation between units (eg common operating picture, coordinated operations etc), the RAN and RN still operate their forces in much the same way that they did thirty years ago. That is, collectively or independently to project force in order to protect or disrupt Sea Lines of Communication, to provide Sealift, and to exercise or contest Sea Control. In war, they still detect, classify and engage targets.

Emergent technologies will enhance detection, classification and engagement capabilities, undoubtedly impacting on the way some naval operations are conducted, but these impacts appear predominantly marginal and consistent with past experience. Barring massive development of unmanned platforms, such as UAVs and UUVs, there are potentially no revolutionary inventions (such as would rival the invention of the submarine or aircraft carrier) on the immediate horizon. Therefore, if the past thirty years are any indication, it appears that force structures and roles will change very little as a result of forecast technological possibilities.

That said, new weapons (eg Masers) are being developed that can target the technology that enables Network Centric Warfare in the first place. This may create an opportunity to shift strategic focus from attrition of equipment or platforms, to neutralisation of the systems that enable them to see, hear, fly, float, move and fight, using targeted electromagnetic interference weapons. We may yet witness the emergence of new battlespace effects and therefore options, or Ways, as a result of technological changes to the Means.

Put simply, although the RAN and RN have evolved during the information technology revolution that continues today, their force structure has remained static. Apart from a trend to greater internal and external interoperability and joint/combined operations, the battlespace effects

they generate and the way in which these forces operate has not fundamentally changed as a result of new technology. Noting the continuing technology trends, the same might also be predicted for the naval forces of 2034.

Conclusion

Certainty is relative...

Technological changes to naval platforms impact their capabilities, adding, subtracting or altering the combat effects that they can create within the maritime battlespace. These 'effects' contribute to providing various military options for achieving strategic objectives. In this manner, technology impacts strategy through the Ends, Ways, Means construct of Effects Based Operations.

Medium power naval forces have changed little in terms of force structure in the past thirty years despite variations in tasking and operational tempo that have ranged from benign humanitarian assistance roles to war in the Falklands and the Gulf. These insights have been gleaned during the information technology revolution that continues today. It therefore serves a useful pointer to the potential impact of technology in the future.

Objective Effects Based analysis of emergent technologies, coupled with a retrospective appreciation of the past thirty years, yields several conclusions. Firstly, forecast technological improvements will continue to impact on medium power naval forces in much the same way as during the past thirty years - evolutionary, rather than revolutionary. Trends toward improved stealth, speed, efficiency, endurance and effectiveness will be enhanced by greater computer power and communications, enabling unprecedented battlespace awareness. Future forces will be reliably networked but they may be vulnerable to new weapons such as Masers. High-tech unmanned vehicles will increasingly permeate the battlespace, bringing with them new opportunities and new threats. Access to the littoral will be improved. These new capabilities may enable battlespace effects that yield new options for achieving warfare objectives. Technology will therefore continue to impact on naval strategy through the Ends, Ways, Means construct.

The way that naval forces operate over the next thirty years will gradually evolve along current lines as a result of forecast technological improvements. However, unless revolutionary changes render entire platforms obsolete, as Edward Teller predicted would happen to the aircraft carrier after 1945, these changes are unlikely to be revolutionary.

¹ Geoffrey Till, *Maritime Strategy and the Nuclear Age*, The Macmillan Press, London, 1982, p. 183. Edward Teller was 'the father of the H-bomb' and speaks here on the future of the

aircraft carrier post WWII.

² H.G. Wells, *Anticipation*, 1902. 12 years later U-9 would sink three 12,000 tonne cruisers in less than an hour, at the cost of 1400 British officers and sailors. 2 years later Britain was effectively surrounded by German submarines, and again in WWII.

³ G.A. Clarke & I.A. Burch, *Emergent Technologies for the Royal Australian Navy's Future Afloat Support Force*, DSTO Aeronautical and Maritime Research Laboratory, May 2001, p. 1.

⁴ Today's inventions often take in excess of ten years to be translated into sea going capability as medium power navies today largely 'lever' technology from the private sector, rather than the other way around. Logically then, the capabilities that will influence naval strategy in the next thirty years are probably emerging now. Besides, 'crystal ball gazing' could prove comparatively counter-productive.

⁵ This section draws heavily on *Emergent Technologies for the Royal Australian Navy's Future Afloat Support Force*, primarily because the report collates worldwide developmental efforts in a succinct, coherent format.

⁶ Department of Defence, *Future Warfighting Concept*, ADDP-D.3, 2003, p. 11. EBO goes further, talking about decisive and enabling effects and maintains a predominantly strategic focus. However, it is the battlespace effects generated by military units that conspire to provide the military capabilities that underpin naval operations.

⁷ *ibid.*

⁸ Ministry of Defence, *British Maritime Doctrine BR 1806*, The Stationary Office, 2004, p. 203.

⁹ Eg firepower, manoeuvre, stealth.

¹⁰ Department of Defence, *ADDP 5.01 Joint Planning (Provisional)*, 1st Edition, DPS, Canberra, 2003. Figure 1 is based on this reference, modified to articulate the technology input. ADHQ-Australian Defence Headquarters, HQJOC-Headquarters Joint Operations Command, JTF-Joint Task Force.

¹¹ Clarke, *Emergent Technologies for the Royal Australian Navy's Future Afloat Support Force*, p. 1.

¹² Some Australians will remember the paperless, fully integrated *Collins* class submarine combat system designed in the 1980s to take advantage of 'foreseen' technology that even today remains elusive.

¹³ Clarke, *Emergent Technologies for the Royal Australian Navy's Future Afloat Support Force*, p. 45.

¹⁴ *ibid.*, pp. 47-8.

¹⁵ Less fuel consumption/Less hydrodynamic drag.

¹⁶ The notable exception is SWATH vessels.

¹⁷ Author's observations as Staff Officer during Headmark 2003.

¹⁸ George M Stewart, *At Sea Experimentation with Joint Venture*, October 2001 through September 2001, CAN Corporation, 2003, p. 48. The project leased a catamaran hull High Speed Ferry, Joint Venture, for assessment on behalf of the US Army, US Marine Corps, US Navy and Naval Special Warfare Command to "...explore the concepts and capabilities associated with commercially available advanced hull and propulsion technologies..." p. 1.

¹⁹ Clarke, *Emergent Technologies for the Royal Australian Navy's Future Afloat Support Force*, p. 46.

²⁰ *ibid.*, p. 47. Subject to propulsion system.

²¹ Similarly, hull designs and coatings are increasingly targeting fouling from marine growth as well as temperature related corrosion issues, both of which are particularly important in Australia's northern environments.

²² Chester Petry, NAVSEA Dahlgren, *The Electric Ship and Electric Weapons*, presentation to NDIA 5th Annual System Engineering Conference Tampa, Florida, October 22-24, 2002.

²³ Clarke, *Emergent Technologies for the Royal Australian Navy's Future Afloat Support Force*, p. 54.

²⁴ Other electric propulsion possibilities include advanced

permanent magnets and low temperature superconductors, although the scope of this essay does not permit all developments to be covered in detail.

²⁵ Graeme Dunk, 'Technological and Operational Trends in Submarine Warfare', in McCaffrie & Hinge (eds), *Sea Power in the New Century*, Australian Defence Studies Centre, Canberra, 1998, p. 182.

²⁶ Clarke, *Emergent Technologies for the Royal Australian Navy's Future Afloat Support Force*, p. 52.

²⁷ *ibid.*

²⁸ Norman Friedman, 'Operational and Technological Developments in Underwater Warfare', in *Sea Power in the New Century*, p. 161. Usually below 4 knots.

²⁹ Clarke, *Emergent Technologies for the Royal Australian Navy's Future Afloat Support Force*, p. 53.

³⁰ *ibid.* p. 53.

³¹ Kit Lavell, 'New Technology Transforming Naval Power', viewed 7 September 2004 at http://www.signonsandiego.com/news/op-ed/techwar/20030301-9999_mzle2newtech.html.

³² Clarke, *Emergent Technologies for the Royal Australian Navy's Future Afloat Support Force*, p. 61.

³³ Royal Australian Navy, *Australia's Navy for the 21st Century*, 2002, p. 16. This is the unclassified synopsis of the RAN's Plan Blue (Long-Range Strategic Plan).

³⁴ Dr. D Nandagopal, 'Maintaining the Technology Edge in Maritime Warfare for the 21st Century', presentation to Pacific Technology Forum 2004.

³⁵ Mr. Tim Schoor, presentation on Unmanned Systems Technology for Mine Warfare – AUUSI Unmanned Systems Program Review 2004, Office of Naval Research – Department of the Navy Science and Technology, 12 February 2004.

³⁶ Friedman, "Operational and Technological Developments in Underwater Warfare", p. 160.

³⁷ As are UCAVs (Uninhabited Combat Air Vehicles). See both Australia's Maritime Doctrine and British Maritime Doctrine.

³⁸ HAIL technology by Nautronix Pty Ltd, Fremantle, W.A.

³⁹ Thomson Marconi Sonar Pty Ltd.

⁴⁰ As part of the FFG upgrade program.

⁴¹ Defence Advanced Research Projects Agency (DARPA) Strategic Thrusts as viewed on 8 September, http://www.darpa.gov/body/strategic_plan/strategci_text.htm.

⁴² Clarke, *Emergent Technologies for the Royal Australian Navy's Future Afloat Support Force*, p. 31.

⁴³ Petry, *ibid.*

⁴⁴ Clarke, *Emergent Technologies for the Royal Australian Navy's Future Afloat Support Force*, p. 32.

⁴⁵ *ibid.*

⁴⁶ *ibid.*

⁴⁷ *ibid.*, p. 34.

⁴⁸ Dunk, "Technological and Operational Trends in Submarine Warfare", p. 185

⁴⁹ *ibid.*, p. 188.

⁵⁰ This extends current thinking from battlespace shaping as a preliminary event, defining it as the new main effort upon which success in conflict might be increasingly derived. This targets the psychological aspect of 'rational' warfare, wherein the adversary perceives hope of victory has been lost and prefers negotiation to needless slaughter. Obviously, the theory falls down when the opponent thinks differently about the value of human life.

⁵¹ RAN, *Australia's Navy for the 21st Century*, pp. 18-20.

⁵² which was to be replaced by HMS *Invincible*, yet was not due to cost concerns.

Practicing leadership

*Rear Admiral Davyd Thomas, AM CSC RAN**

It has often been said that this is an exciting time to be embarking on the bulk of one's career. In addition to the existing Defence Capability Plan, the 2003 Defence Capability Review has ensured a modern force structure. Whilst this new force structure is fundamental to our ability to fight and win at sea, it is our people that will ultimately make the difference. Being a leader means understanding their importance in giving us the competitive advantage.

There can be no more important function for any government than to provide for the security of the nation. Those people entrusted with providing the sharp end of national security have a distinct and unique responsibility. The nation expects us to exhibit the values shown by our forebears and to win. We haven't let them down. This connection with society is significant. Given the stakes at hand, one could argue strongly that serving in the military represents a higher calling. There are higher causes at stake in our work that is of vital interest to the nation. This leads to higher expectations than societal norms and additional responsibility for all those who serve. Our performance and our reputation will be on the line throughout our service and it will be our legacy.

In performing our core function, all RAN personnel are employed to contribute to our nations' competitive advantage. Individual leadership is crucial to this competitive advantage. So how do we produce the best leaders? Theory is undoubtedly a fundamental requirement. It goes without saying that the importance of the leadership, management and professional development continuum should be reinforced throughout a naval career. However the outputs are only achieved when the 'rubber hits the road' - in practicing it. To do that successfully requires us to understand ourselves as individuals and to understand the factors that contribute towards giving us our competitive advantage.

Before we can practice the art of leadership effectively an individual needs to understand their own strengths, weaknesses, value system, passion, limitations and constraints. Without an honest appraisal and genuine reflection there can be no improvement. I liken it to a fitness regime. Before undertaking a regular physical fitness routine, a person benchmarks themselves and sets goals. They use this as the basis for targeted exercises, and improvement. Preparing oneself for 'leadership

fitness' is no different. An important question is an individual's ability to truly appraise themselves. My own observations suggest many people inflate their own leadership ability - better off being real, as it is the individual who will suffer in the end, and in the leadership game that means unit effectiveness will too.

Like physical fitness, working towards leadership fitness and then maintaining it takes time, effort and a consistent exercise regime. By forming habits through a regular exercise regime one can develop their leadership ability most effectively. Using the physical fitness analogy, one won't be successful by not preparing for a race and simply running it on the day. It takes practice and consistent effort. In leadership as in other disciplines one needs to benchmark the leadership habits they want to form. In military terms, these habits that are practiced in a benign environment form the basis for the way people think and act under stress or when ethical questions are raised. The following table provides some traits in a continuum worth considering:

Reluctance →	Courage
Falseness	Honesty
Blame	Accountability
Disloyalty	Loyalty
Self indulgence	Teamwork
Remoteness	Sharing

The left hand side suggests traits we want to move away from, while the right side suggest core traits evident in successful leaders.

To become 'leadership fit', people need to understand themselves and seek out opportunity to form leadership habits. Although societal expectations upon us are unique, the military is in a fortunate position. That arguably higher expectation is self perpetuating but we are expected to be on watch, to live by our values and lead. It is our duty to maintain the highest standard of values, in particular the value of honour, despite external pressures or influences in the wider community. The military needs to be on guard against this. It is our task to ensure our values are understood, practiced and preserved at all costs. That's a role for all of us.

Opportunities to develop leadership fitness present themselves in many different forms, and at any time. Perhaps the best and simplest is the divisional system. Applying these principles in

* Rear Admiral Thomas assumed the position of Maritime Commander in July 2005.



the most effective means of communication then why do we miss our families when we deploy. We need to communicate in person as much as we can. You have to be there, amongst it. By living and being amongst those we lead understanding and real relationships develop. Trust develops. Missions get explained. Leadership gets practiced. I never cease to be inspired when I see young people simply doing their jobs. It reminds me of my own passion in days past, when seemingly mundane things today were once exciting and fun. Sustaining that passion through the endless grind of work can be tough for anyone. But being amongst others to reaffirm a passion can be uplifting - get amongst it!

Leadership then is the key to our success. It's the glue that binds our force structure into a most effective package - as good as the best. For us to maintain leadership as our competitive advantage in harm's way one must be properly prepared. Like the runner preparing for his or her race, leaders have to exercise regularly to achieve and develop leadership fitness. By understanding themselves first, individuals can seek out opportunities along the way. In this way we will win when it matters and protect our competitive advantage. Importantly we will meet that higher expectation of society - as a disciplined, values

leading our sailors and junior officers is a precursor to leading our people into harm's way. The application of good traits must be habitual because when it matters there won't be time - think of it like preparing the battlespace! Importantly, in developing our habits we are actually guarding the organisation's values. The leader must protect the organisation's values by understanding their leadership fitness and then practicing.

Getting the message to others takes constant energy. Communicating in simple terms and leadership by example is still the best way. The leader needs to be a participant, not a spectator in every endeavour. It's the leader's role not to dwell upwards, although it is from there that the vision, mission and guidance should be drawn; rather it is the leader's role to be amongst the team. Leadership can't be as effective if it is remote. If an email was

based force, which is well led and capable of providing their national security beyond reproach. It's an onerous responsibility and one that requires constant effort, energy and passion. But it is a noble cause and will in fact be our legacy. We therefore owe it to our forebears, contemporary Australians and our future. We are on watch, developing leadership habits that will enable us to 'fight and win' in any battle space.

A question for retention: is the system to blame?

WO R Ried

It is no tall tale to say that the state of retention within the Royal Australian Navy, especially Seaman Officers is in a bad way indeed. Many new programmes offering incentives and the like have been initiated and many thousands if not hundreds of thousands of dollars have been spent trying to rectify this issue. Whilst incentives such as the retention bonus have (so far) been a step in the right direction, there remains one very real problem that has yet to be addressed, that of the reactionary approach taken by the Navy when it comes to dealing with the maintenance of Officer's careers.

The problem is that there is a definite trend of opinion when dealing with Officer's careers, that those who are truly loyal to their job, the proactive, interested, ambitious and dedicated men and women will be content to just take everything (postings, promotions and benefits) as they come. This is of course not true and when abused, can and does lead to disillusionment and often their resignation from the Service. What has happened is that the system is pitched towards the 'odd-balls', those Officers who are not happy with their occupation or posting, maybe less than competent to do their job and who use (dare I say it) the threat of resignation to get what they want.

Many junior officers throughout the Fleet have remarked that there are definite disadvantages to attending the Australian Defence Force Academy, which can sometimes even outweigh the obvious advantages that ADFA offers. Whilst a tertiary education is an essential qualification in modern society, to those at sea with little or no opportunity to use their degree in their foreseeable future (disregarding of course the various engineering streams), such qualifications may seem a waste of time. Even though the current Naval Officer Year One (NOYO) scheme where Midshipmen attend HMAS *Creswell* and then go to sea for the remainder of their first year in the RAN, is an undeniably good thing, many new and unique problems have arisen. Firstly there are minor problems which begin with pay inequalities between ADFA entry and Direct Entry (DE) officers (even though they often possess the same level of experience and training). The real problem arises when an ADFA NOYO sees their ADFA classmates transfer to Direct Entry. There have been many cases where Midshipmen have left ADFA after the first two years (a grace period prior to the accrual of Return of Service Obligation) and have been promoted to whichever rank they would have

attained had they begun their careers as DE officers. The most grievous of such circumstances have occurred when such Midshipmen have left ADFA due to academic failure or disciplinary action. These people are effectively being rewarded with extra pay and promotion for being incompetent, lazy or delinquent! Such 'officers' should, at the very minimum, remain in their original rank for the time that they were initially intended (four years for ADFA Midshipmen). The system is allowing such unfairness to occur and consequently, those officers who have already or continue still to study in Canberra in lieu of better pay and rank, have and continue to become disillusioned and annoyed. The incentive therefore, is to not attempt to do well at ADFA because the benefits of failure are much more immediate than the eventual benefits of a Degree.

Another problem is the use of 'blackmail' by officers to gain the postings they desire. Often complaints are made throughout the RAN that officers have received their posting preferences because they threatened their poster with their resignation. The problem is that the Navy is afraid of losing someone and when resignation is threatened, the reactionary approach of placating that person's desires takes over often to the detriment of the Service. It is those who indulge in this practice repeatedly who are at fault. Good postings are essential to the retention of personnel, and whilst one can not always expect good postings back-to-back, they should be on offer to more than just those who are greedy.

The system needs to be reassessed and these problems addressed if the RAN is to retain the officers who actually want to be there. Since these problems are repairable or at least able to be monitored then they should be the focus for the next re-evaluation of the retention issue. We should be less reactionary and more preventative when it comes to the resignation of personnel. The RAN is full of dedicated officers willing to do their duty. Therefore, I say change the system to benefit the majority, not the oddballs.

A response to WO R Ried

Director Naval Officer Postings

In response to WO R Ried's letter on 'A question for retention: is the system to blame?', the Navy fully acknowledges that people are the resource that enables the Navy to retain its combat edge and the Navy aims to attract and retain a broad spectrum of the very best Australians to ensure it meets its mission to fight and win at sea.

To achieve this end, the Navy is constantly reviewing its policy and procedures to ensure the Navy is proactive in ensuring it attracts and retains the right sort of people. In 2004, the Chief of Navy, Vice Admiral Chris Ritchie, introduced the Sea Change program, which is focused on improving individual choice and the better management of people's careers in the Navy. The changes are being achieved in an environment where the Navy is still able to meet all its operational and capability obligations. For this reason the Navy is changing the way it is doing business in relation to how it manages its people.

While WO R Ried states that there are disadvantages to attending the Australian Defence Force Academy (ADFA) and gaining a degree, the Navy continues to see a degree as beneficial to the member and to the service. Through an emphasis on academic studies Officers develop their intellect and vocational utility. All applicants who join the Navy as an Officer have the choice to select ADFA or Direct Entry (DE). The applicants can assess the benefits that each entry scheme possess and choose a path that is right for them.

WO R Ried claims that officers who leave ADFA and transfer to the DE Scheme do so through Academic Failure or Disciplinary Reason and gives the impression that there are vast hordes leaving ADFA. Any transfers from ADFA entry to DE are in response to specific requests from the officers concerned and are assessed by the Director Naval Officer's Postings on an individual basis. Since January 2003 a total of eight officers have changed from ADFA entry to DE and of these none were considered disciplinary reasons and three where due to academic difficulties. The majority of transfers are in response to being exposed to the Naval Officer Year One (NOYO) Scheme, which WO R Ried compliments, and to life at sea. These Officers have decided they wish to continue with their application training rather than undertake a degree. On transfer, the rank of these officers is amended to conform with their DE counterparts and to reflect the progress the officer's are making towards

gaining a qualification and subsequent utility to the Navy.

Through out the planning of an officer's career the Navy plans to balance the officer's aspirations with the corporate requirement to ensure optimal manning of the Navy and Defence, to support Defence's mission. So while WO R Ried claims officer's 'blackmail' the Navy into postings by threats of resignation, all postings are assessed in terms of the benefit to the Navy and to the officer. Where the Navy can accommodate a request by an officer, it will endeavour to do so, in line with the Navy taking care of its workforce. To ensure there is no bias, prior to any posting action taken the posting has to be cleared by an officer of at least two ranks higher. Thus all postings have to be declared, and defended, to ensure the posting is unprejudiced, not just to the officer but also to Navy and to other officers.

Once again I wish to emphasis the importance that the Navy places on its officers and sailors and that the Navy continues to be pro-active in its management of its personnel, with the aim of ensuring the Navy can fight and win at sea.



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HMAS *Anzac* - East Asian Deployment 2004-01

Captain Richard Menhinick, CSC RAN*

On the morning of Monday 21 June 2004, the *Anzac* class frigate, HMAS *Anzac* departed Fleet Base West (HMAS *Stirling*) and commenced passage to Christmas Island and a four and a half month deployment including an Operation *Relex II* patrol, Work Up, Exercise *Singaroo* and East Asian Deployment 04/01. The ship was Commander Task Group 627.4 (CTG 627.4) for the deployment which at different times involved HMA Ships *Anzac*, *Canberra*, *Westralia*, *Arunta*, *Hawkesbury*, *Yarra*, *Geraldton*, *Dubbo* and *Sheean*. HMA Ships *Melbourne*, *Kanimbla*, *Bendigo*, *Wollongong* and *Dechaineux* were also involved during the Northern Australian Exercise phase.

As with most deployments these days this was a multi-faceted one which challenged the leadership of the ship and the ship's company in many ways. The deployment began with Operation *Relex II*. This is the Government's Border Protection operation. In this role *Anzac* patrolled the waters in the vicinity of Christmas Island and Australia's north-western waters until 19 July. We arrived at Christmas Island on 25 June, embarked 33 members of the Army as Transit Security Element 33, and relieved *Canberra* who proceeded home to Fleet Base West, if only for a few weeks.

Relex operations at Christmas Island are multi-faceted. They provide a challenge to the Command team but also provide a good opportunity for departmental and core based competency training. Opportunities to conduct training such as Engineering Casualty Control Drills (or ECCDs - sometimes referred to as Engineering Casualty Causing Drills!) abound. These opportunities were utilised fully.

Throughout this period *Anzac* continued the maritime patrol and a pre-work up training program, conducting a form of the old 'weekly running' but this time out of Christmas Island. Basically the ship would sail on a Sunday morning as Christmas Island is shut on Sundays! and stay at sea for the remainder of the week, returning to buoys in Flying Fish Cove (FFC) most Fridays. Whilst in FFC the embarked Army Transit Support Element 33 was tasked to establish an observation post on the north easterly point of Christmas Island thereby providing surveillance to the north and east throughout *Anzac's* time at the buoys. Throughout the period we were cognisant of the need to balance the operational

patrolling requirement with the need to have a ship's company that was refreshed a little and ready for the commencement of work up, which was planned to occur immediately on completion of Operation *Relex II* commitments. We therefore conducted an operational type of weekly running for this particular *Relex* patrol punctuated by fuelling evolutions at the Smith Point fuelling installation, where the ship fuels from a fuelling pipeline run from shore while the ship is tethered to buoys approximately 40 metres from the shore.

On 19 July *Anzac* was relieved by *Arunta* and after conducting some exercises headed off for Darwin and the Northern Australian Exercise Areas, with Sea Training Group (STG) embarked for week one of our work up. The next day the ship rendezvoused with *Canberra* who was our consort for the work up. The next five weeks were run at the frenetic pace that those familiar to work ups know so well. At times up to 50 green suited STG personnel would be in the ship working with the ship's company and ensuring that the ship was as ready as it could be for the main day which was the unit readiness evaluation (URE), which was on 17 and 18 August.

The workup period was complicated but also in many ways enriched by a Principal Warfare Officer's (PWO) Sea Assessment Week and Exercise *Singaroo* (Singapore and Australian forces) within which the URE was conducted. Throughout as senior ship we were Commander of the Task Group.

The PWO Sea Assessment Week was of great training benefit to all ships. The week progressed with a number of Air Warfare, Combined Anti-Submarine and Surface Warfare Exercises in company *Melbourne*, *Canberra*, *Kanimbla* and *Westralia*, with a detachment of three S-70B-2 helicopters from 816 Squadron. Including the flights embarked in *Anzac* and *Canberra*, the period at sea benefited from having five helicopters available for warfare tasking which was an impressive reminder of days past.

The busy environment proved a challenge for Officer Of the Watch (OOW) and PWO students alike. The week also showed the value of advanced multi-ship interaction and in company training. As an example, instructions concerning detaching from a formation, the execution of signals for subsequent

* Captain Menhinick has been the Commanding Officer of HMAS *Anzac* since December 2003. He was Vice-President of the ANI from 2002-03.

serials and who takes charge of ships between serials were not well implemented early in the week and at times tactically unsound sector screens were promulgated from ships for undersea warfare and air warfare. However, both issues were addressed immediately with good result. The highlight, and a significant step forward for the Navy, was the fact that the PWO Sea Assessment Week was completed safely with all objectives met, exceeding expectations with the first sixteen students of the new PWO course achieving a 100% pass rate in an asset rich environment.

The focus of the next stage of the deployment was Exercise *Singaroo*, the eighth such biennial exercise. For this exercise two Republic of Singapore Navy corvettes, RSS *Victory* and *Vigilance* joined us. Exercise *Singaroo* proved that bilateral operations between Australia and Singapore continue to thrive. The structure of the exercise assisted well to the melding of disparate forces and much was achieved. It was a pleasure to have conducted operations in close company with our Five Power Defence Arrangement (FPDA) partners.

As mentioned earlier, *Singaroo* was also the URE for *Anzac*. After a few well deserved days of rest and relaxation at anchor in Darwin Harbour, *Anzac* proceeded to sea bound for Singapore and the second stage of the deployment, being into East Asia itself. There was certainly a surprise along this route. *Anzac* passed north of Timor and conducted an east-west transit of the Indonesian archipelago. At 1811 on Friday 27 June, approximately 210nm south-south east of Singapore the ship came upon a small coastal trader, later identified as the *Suci Harapan*, floundering in a mild sea state. The people onboard (fifteen in total) were gathered on the coach house roof. *Anzac's* Ship's Warrant Officer and also Officer of the Watch had noticed a small fire had been lit and personnel were waving sheets and

canvas to attract attention. *Anzac* made best speed towards the vessel, initially believing it may have been on fire, however as the ship closed it was obvious that the vessel was using the flames to signal distress.

A boarding party was quickly assembled, briefed and dispatched to investigate. As the boarding party arrived at the vessel, *Anzac* personnel assured the distressed crew that they were there to lend assistance and all people were to remain on the boat. As the first of the boarding party embarked however it became obvious that the vessel had taken on a lot of water and was about to sink, in fact the Command Order 'abort, abort, abort' was given seconds after the first of the boarding party embarked, as the vessel lolled alarmingly to port. The boarding party member quickly disembarked into the sea boat and they stood off as the stricken vessel sunk in a matter of seconds. The second sea boat was at the ready and launched immediately.

Just before sunset the *Suci Harapan* had disappeared beneath the surface and all members of her crew were in the process of being recovered by both sea boats. *Anzac* embarked the fifteen Indonesian crew of the *Suci Harapan* on the quarterdeck by 1907, six minutes after sunset and only fifty six minutes after the vessel was first sighted. All fifteen were in good health and very thankful. They were provided with clean, dry clothes, food and water and medical assistance while they were processed and accommodated on the quarterdeck. All members of the *Suci Harapan* remained onboard for the overnight passage to Singapore. They were certainly the luckiest crew members around as no other ships were in sight and they would in all probability never have been sighted by anyone else.

After a few days in Changi Naval Base, Singapore, and with the rescued Indonesians returning home, *Anzac* sailed for Kuantan on the east coast of Malaysia. There the ship conducted a short port visit and attended the Opening Ceremony and briefings for Exercise *Mastex 2004*, which stands for Malaysian/Australian Exercise. *Anzac* departed Kuantan and later rendezvoused with the Malaysian Navy Ships *KD Jebat* and *Lakasamana*



Muhammad Amin for the exercise itself in which we conducted Officer Of the Watch manoeuvres, anti-submarine exercises with *Sheean*, air and surface warfare exercises. The Royal Malaysian Navy was very interested in maximising their submarine interaction time and this was ably provided by *Sheean*. The challenge of shallow water submarine warfare in and around the busy commercial shipping traffic of the South China Sea was a significant benefit of this exercise.

This was then followed by the principal FPDA activity of each year, Exercise *Bersama Lima 2004* (BL04), which was a great success. It compares most favourably with other exercises the RAN conducts and is an excellent exercise package. While clearly satisfying the primary tactical level of warfare, such as air warfare, surface warfare, undersea warfare and naval bombardment of the land, in the strategic context of the span of maritime operations it meets the requirements of the diplomatic and military category of operations. The benefits to Australia of a continued high priority commitment to the FPDA cannot be underestimated. Of special note on this occasion was the emphasis placed on the maritime interception operations and their potential for an anti-terrorist element to be added to future FPDA exercises and operations. Of all the advances over the last ten years in FPDA, this is perhaps the most important, especially noting the Sea Lines of Communications issues common to Australia, Singapore and Malaysia.

The focus on maritime interception was best illustrated by the emphasis placed on the VIP/media day. It involved twelve VIPs (Ambassador/Ministerial level/Star rank military officers) and eight media embarking in *Anzac* by Singaporean helicopters for a sea day. BL04 operations were keenly observed, with the main event being the witnessing of an interdiction exercise, using *RFA Grey Rover* as a suspect merchant ship and boarding parties from *Anzac*, *KD Jebat* and *RSS Endeavour*. The helicopter from HMNZS *Te Kaha* conducted aerial security support. It was true cooperation from all five nations. This event was broadcast throughout Southeast Asia by both television and print media.

As with *Mastex 04*, BL04 also has the added benefit of providing ADF elements with experience operating in the South China Sea and adjacent waters. This experience is invaluable, certainly from the perspective of working in a shallow water environment with a high traffic density of merchant ships. Attempting to identify, track and attack warships, with maritime patrol aircraft and helicopters also operating, was challenging and worthwhile itself. In the tactical phase, *Anzac* was Commander Task Group of the 'Red' or 'enemy'

forces. The heavy density of the merchant traffic allowed *Anzac* to utilise innovative deception via lighting, covert emissions, routing and infra red cooling of stacks and machinery spaces (fire hoses) to confuse the picture and avoid detection even by the Australian AP3C Orion aircraft. By the way, we thoroughly enjoyed shooting the AP3C down with a NATO Sea Sparrow missile. This was a highlight and cheering rang out in the Operations Room as the exercise Safety Cell confirmed the 'kill' and order it home as 'out of exercise' for that mission!

In some circles there continues to be much discussion about Australia's strategic role in Asia. This deployment was all about achieving successes in this area. BL04 had 31 ships and submarines, over 60 aircraft and 3000 personnel from Australia, Singapore, Malaysia, New Zealand and Britain. With land elements becoming increasingly involved and with the shore and sea aspects now lasting over three weeks it is an exercise to rival RIMPAC and one which is as important strategically to Australia. More interest and focus on this annual exercise from Australian media would be most welcome, as it typifies what Australia and the Australian Defence Force are about in the region.

After the conclusion of BL04, *Anzac* and the Task Group continued to meet requirements and objectives. For *Arunta* and *Westralia* this meant a passage north to Japan with *Anzac* sailing to Pusan in South Korea. This was a most successful visit, again highlighting the close ties we have in Asia. Within minutes of the brow being in place I proceeded ashore with the Ship's Company to attend a Welcome Ceremony held on the wharf. A large contingent of Republic of Korean Naval Personnel and Band formed alongside *Anzac's* Ship's Company. A most important ceremony whilst in Pusan was the commemoration ceremony with 45 members of Ship's Company at the United Nations Military Cemetery Korea. This is the only United Nations military cemetery in the world and is one where 281 Australians are buried.

Following Pusan, *Anzac* sailed for the northern Chinese port of Qingdao. This was a significant occasion and signified the first ever exercise at sea between the RAN and the Peoples Liberation Army Navy (PLAN) of China.

Qingdao (meaning Green Island and pronounced *Ching Dow*) lies on the north-east coast of China, in the province of Shandong whose peninsula divides the Gulf of Bohai and the Yellow Sea, some 700km south east of Beijing. Qingdao was occupied by the Japanese during the period 1914 to 1922, and again during WWII, but the main foreign influence came from Germany which was ceded the city in 1898 and established it as a naval base and coal port. Their legacy is evident in architecture and gardens in old

parts of the city, and in the famous TsingTao beer which is brewed to a Bavarian recipe. A tour of the brewery was **enjoyed** by many officers, (I am not sure if the subsequent mandatory rendition of *Waltzing Matilda* was in tune!) but that is not the purpose of this article.

Nevertheless, of great interest to Australians should be the fact that in 1914 the German East Asian Cruiser Squadron, commanded by Vice Admiral Graf von Spee and comprising the armoured cruisers *Scharnhorst*, *Gneisenau* and the light cruisers *Leipzig*, *Nurnberg* and *Emden* and the light unarmoured cruiser *Cormoran* was based at Qingdao. Indeed the old German Naval Base is pretty well intact, and is now a PLAN museum. It was from Qingdao in 1914 that *Emden* departed to ultimately meet her fate at the hands of HMAS *Sydney* at the Cocos Islands. It was also from here that von Spee, very well aware of the threat that the power of the battlecruiser HMAS *Australia* possessed, attempted to sail home to Germany, deterred principally by the presence of *Australia* of any attempt to raid Australian cities or defend German territory in the Pacific.

With a population of some seven and a half million, Qingdao is now the major provincial industrial centre and port with heavy foreign investment, notably from South Korea and Japan, (and increasingly from Australia) in producing railway locomotives, cars and domestic electrical goods. It is also host to a number of light industries. Large, modern hotels flank the western-style beaches to the south of the peninsula, while to the west an expanding commercial port lies in one of the largest natural harbours in China. The mixture of 19th century colonial buildings, high-rise hotels and department stores, and more traditional narrow Chinese streets and markets, makes Qingdao a fascinating place to visit. It will also be the centre for all Olympic sailing events in the 2008 Beijing Olympic Games, with an Australian firm having won the contract to design and construct the sailing facilities, hotels and integrated Olympic support complex.

From a military perspective Qingdao is the headquarters of the PLAN North Sea Fleet. This comprises a mixture of surface combatants, replenishment ships, submarines, patrol craft, mine warfare vessels and auxiliary ships of various types. China has three main fleets, the North Sea Fleet, the East Sea Fleet (headquarters in Ningbo) and the South Sea Fleet (headquarters in Zhanjiang). There are numerous other fleet bases but they all belong to one of the three fleets.

Anzac's visit to Qingdao was from Sunday 10 October until Thursday 14 October 2004. Also present for the visit was the Maritime Commander

Australia, Rear Admiral Rowan Moffitt AM RAN, who boarded *Anzac* for the entry to the harbour on the 10th and sailed with *Anzac* to observe the exercise with the PLAN on the 14th.

The visit of the Maritime Commander and of *Anzac* was a visit of much significance for the relationship between Australia and China. A significant step towards this was the conduct of the first ever combined exercise between the RAN and the PLAN. The exercise was based around a safety at sea, search and rescue (SAR) scenario. This was a most apt way to commence sea-going interaction between Australia and China, noting that the sea is the common foe that brings all mariners together. The exercise was conducted on the 14 October on completion of a fascinating and successful harbour period of planning, recreation, rest and sightseeing. (55 personnel from *Anzac* were also able to conduct a two day tour which included the Great Wall of China and Beijing).

Planning as always remains the key to a successful exercise. This is no different whether you are exercising with the PLAN or the Republic of Singapore Navy, as an example. The PLAN and ourselves therefore conducted familiarisation visits to each other's ships, a series of communications exercises, including radio, visual light signaling and semaphore whilst in port. The PLAN ship with which we were conducting the exercise was the *Harbin*, a Luh Type 52 DDGHM of 4600 tons commissioned in 1994. She is the flagship of the PLAN North Sea Fleet and it was her sister ship, *Qingdao* that visited Sydney in 1998.

Another area of extensive planning involved authorisations for the S70-B-2 helicopter in *Anzac* being cleared from a safety perspective to land on *Harbin* and for the Zhi-9C (Dauphin) helicopter in *Harbin* to land on *Anzac*. After flight crew visits between both ships, with confirmation that the deck strength of the *Harbin* was sufficient to handle the much larger and heavier S70-B-2 and with a risk assessment and mitigation strategy in place permission was granted.

The day of the historic exercise dawned bright and clear. This was a complete change to the weather and visibility the ship had had on entering Qingdao. On that day visibility had been about 1000 yards which reduced to 200 yards as *Anzac* approached the berth. Indeed the Australian Defence Attaché, Colonel Russell Smith, standing on the wharf for the arrival reported that the sounds of *Waltzing Matilda*, played by *Anzac's* RAN Band Element could be heard long before the ship was sighted through the fog!

Harbin sailed first and after the departure formalities were completed, *Anzac* was farewelled by a full band from the PLAN and guard, with the

Deputy Commander North Sea Fleet (RADM Gin) there for the farewell. As already mentioned it was a clear day and the city of Qingdao was visible in all its brilliance. It really is an impressive city and harbour, surrounded by mountains in the background. A stunning vista with which to depart China.

Anzac formed up 1000 yards astern of *Harbin* and departed Qingdao in that formation. Also present ahead were four PLAN patrol boats that did an excellent job clearing the path of small fishing boats, of which there were many hundreds. The four patrol boats remained in the vicinity for the entire exercise doing this job. As both ships proceeded, the planning and practice communications exercises that had been conducted all paid off. The first major event was an extensive communications exercise by flashing light. With this completed *Harbin* and *Anzac* conducted Officer Of the Watch manoeuvres, with *Anzac* manoeuvring for the first few and then *Harbin* manoeuvring for the last few.

With that completed successfully, an exercise distress message was received from a merchant ship to the south. The PLAN *Fuqing* class replenishment ship *Taicang* played the merchant ship. The *Taicang* reported that they had two seriously wounded personnel onboard and an electrical fault. Both ships altered to the south with *Anzac* sweeping to the east and *Harbin* sweeping to the west. In due course the distressed merchant ship was sighted. The plan was for the helicopters of both ships to then conduct a hovering transfer of equipment and medicines and also to simulate a medical evacuation to *Anzac*. During the course of this *Anzac*'s S70-B-2 was to land on *Harbin* and *Harbin*'s Dauphin would land on *Anzac*. This was, however, when Murphy's Law

struck, and the venerable S70 (nickname Mojo!) developed a hydraulic leak on startup rendering it unserviceable. However, much benefit was still gained as the Dauphin landed on *Anzac* and instead of flying operations we conducted a RHIB boat transfer of RADM Moffitt and his staff to *Harbin*.

Anzac then took station 1000 yards astern of *Harbin* who then hauled out to starboard and *Anzac* then steamed past *Harbin* at speed some 150 feet off. Both ship's companys were lining the decks and waving, and *Anzac*'s RAN Band Element was playing Auld Langs Eyne as *Anzac* passed the *Harbin*. RADM Moffitt then proceeded back to Qingdao with *Harbin* while *Anzac* shaped a course for the Philippines to commemorate the 60th anniversary of the Battle of the Leyte Gulf.

In summary, the value of the exercise was far beyond the tactical and operational level. Although both navies learnt a lot about each other, and the common bond of mariners at sea was evident, the real importance was that this exercise marked a new chapter in the diplomatic arm of maritime operations for both countries. The visit of *Anzac* to Qingdao was the third visit by an Australian ship to that port. However, it was the first time that an exercise at sea had been conducted between the PLAN and the RAN. This is one of the great pillars of sea power. That is the ability for ships to express, across the miles of oceans, messages of friendship and trust between countries and peoples which perhaps helps shape how each culture feels about each other. This exercise was successful because it built trust, understanding and a relationship. All in all, the PLAN and RAN managed to build some solid relationships despite the difficulty incurred as a result of the language barrier.

This exercise helped significantly in this regard and is a platform on which the Navy can now build. China and significantly the province of Shandong are one of Australia's most important trading and economic partners. It was a pleasure to be able to



work with the PLAN for these short few days.

After this the weather intervened and *Anzac* took some typhoon avoidance action. The predicted path of Typhoon Tokage necessitated an alteration of the navigation plan and a course was shaped through the Taiwan Strait to the South China Sea and then for the Philippines. Meanwhile Typhoon Tokage had increased in intensity and curved north to Japan, where the remainder of Task Group 627.4 (*Arunta* and *Westralia*) battled the heavy weather.

On the afternoon of Sunday 17 October, *Anzac* made landfall with Luzon, the largest island in the Philippine Archipelago and later commenced a transit through the Archipelago towards Tacloban and the Leyte Gulf. *Anzac* anchored at Leyte Gulf approximately 6nm from Tacloban on 19 October, to begin preparations for the 60th Anniversary Commemorations for the Battle of Leyte Gulf. Also in port for this important occasion was the USS *Lake Erie*, who held an Official Reception attended by US veterans of the Battle for Leyte Gulf and the former First Lady and resident of Tacloban, Mrs Imelda Marcos.

The next day was the official parade and commemoration at General MacArthur Beach, attended by Her Excellency Gloria Macapagal Arroyo, President of the Republic of the Philippines. *Westralia* arrived having battled around the typhoon and a most moving ceremony occurred with both ships on 21 October. With the sun rising *Westralia* led *Anzac* to the exact position within the approaches to Leyte Gulf that *Australia* suffered a fatal kamikaze (or torpedo plane) attack, 60 years earlier. At the same time as the attack the Last Post was sounded and on completion *Anzac* fired a twenty-one gun salute while passing *Westralia* at close range. The ceremony was very moving and appreciated by the 19 RAN veterans and their wives embarked in *Westralia*. On completion both ships proceeded to Manila for another successful port visit

which coincided with a visit to Manila by the Chief of Navy, Vice Admiral Chris Ritchie, AO RAN.

The last port on the deployment was Port Klang while *Westralia* sailed directly home. *Arunta* meanwhile was in Japan conducting a security exercise at sea with Japanese forces. *Westralia* arrived home the day before we did while *Arunta* arrived home a week later. For *Anzac* the visit to Port Klang gave the crew an excellent opportunity to relax in vibrant Kuala Lumpur which was thoroughly enjoyed by all. The transits of the Singapore and Malacca Straits also offered good training for the bridge and operations team.

Anzac berthed at Parkes Wharf, HMAS *Stirling*, FBW at 1000 Sunday 7 November to be greeted by a large contingent of families and friends, marking the end of East Asian Deployment 04/01 and Task Group 627.4. During the deployment the ship had steamed 26610nm and spent 89 full days of 140 days on deployment at sea, not counting the days the ship entered port or sailed. There are a whole bunch of interesting statistics that arise from a deployment, such as the 1369kg of mail received to the use of 2342 rolls of toilet paper or the fact that 1112kg of potatoes were eaten, but the fact that is most pertinent is the way these deployments showcase Australia in the region. The Navy conducts these deployments almost continuously, without fanfare in the media. As you read this there are probably four major fleet units (at least), support vessels and many minor war vessels conducting peacetime training, deployments, exercises and diplomatic initiatives in the region and further afield in support of Australia. This deployment was a snapshot of many others - just another example of sea power and the Royal Australian Navy protecting Australia's interests.



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A regional response to piracy

Michelle Pierecy*

In the aftermath of the terrorist attacks of September 11, there was wide acknowledgment that the worldwide system of ports and shipping was vulnerable to terrorist attack, potentially on a scale that could equal or surpass the attack on the World Trade Centre. Though violence on the high seas has not reached epidemic proportions, it is becoming more prevalent and this is a significant threat to the security of the global system of trade on which the international economy relies.

The key difference between piracy and maritime terrorism is the motivation of the perpetrators. Maritime terrorists seek to achieve 'political goals beyond the immediate act of attacking or hijacking a maritime target.'¹ Whereas the goal of pirates is financial gain, usually in the form of theft of cargo, stores or the ship itself, terrorists may seek to use the vessel as a vector for a catastrophic attack to achieve political ends. Death or injury to the crew in a pirate attack may be incidental to the objective of financial gain; in a terrorist attack, widespread death and fear may well be an objective in itself.

Piracy is defined under the Law of the Sea Convention (LOSC) as an 'attack mounted for private ends on a ship, involving violence, illegal detention of persons or property, or the theft or destruction of goods.'² Importantly, the LOSC makes the further distinction that piracy is conducted 'on the high seas or in a place outside the jurisdiction of any state.'³ This is important from a legal standpoint, as a piratical act committed within the territorial sea of a given state is more correctly sea robbery. However, for the flag state or trading nation that has lost its nationals, ship or cargo in a violent attack, the distinction in which side of the contiguous zone an offence occurred is relatively unimportant. For the purposes of this article, piracy and sea robbery will be treated as piracy unless otherwise stated.

The aim of this article is to assess the significance of the threat of maritime violence in the Southeast Asian region. It will argue that while the numbers are comparatively small, they are increasing, and the preconditions for both still persist throughout the region. Moreover, the stakes are high. Given the absolute strategic significance of the sea lanes in the region to the world economy, any potential disruption must be treated seriously. It contends that the threat of maritime violence is significant and has the potential to become more

significant over time.

The second part of this article will examine the strategic and political interests of the major regional players - Japan, China, India and the US - and will argue that they have many common interests in maintaining Southeast Asian maritime security. All have been touched by terrorism to some degree and had their shipping threatened by high seas violence. However, there are a number of strategic issues that transcend these common concerns, particularly the tension between the 'status quo' powers of the US, Japan and India on one hand, and an up and coming China that stands to challenge the US as the dominant power in the region on the other. Other strategic and political concerns between the four nations may see maritime security used as leverage to angle for more favourable position in the region.

The threat of maritime violence to the Southeast Asian region

It is difficult to overstate the importance of the Southeast Asian region to world seaborne trade:

*Southeast Asia is a geographic region unlike any other in its maritime significance. Its seas are some of the most traversed shipping lanes in the world. Not only does the region draw much of its livelihood from the sea, but the world also relies on the resources from and safe passage of vessels through its waters.*⁴

The spectre of maritime-based transnational crime has a persistent negative impact on economic security in the affected areas as well as the major shipping nations that trade through them.⁵ The consequences of such disruption, particularly if the situation worsens, are significant for the system of world trade on which the international economy relies to function properly. This is particularly true in the Southeast Asian region, through which more than a third of all shipping, 50% of the world's oil and 25% of the world's cargo passes each year.⁶ As a case in point, the Straits of Malacca and Singapore Strait are the primary Sea Line of Communication (SLOC) for shipping from Europe to the Middle East, and 'a typical voyage from the Arabian gulf port (Rasnatunah) to Yokohama Japan would be 1000nm longer through the Lombok-Makassar Straits as compared to the shorter Malacca-Singapore Straits. This route would add an estimated total increased cost between US\$84-250b a year for shippers.'⁷ The other two significant SLOC in the region are the east-west transit via the southern tip of

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India, and the route through the South China Sea, northeast to the Sea of Japan.⁸

Given the importance of the region, any threat to its efficient functioning is potentially significant. It seems apparent that piracy is a growing problem in the Asia-Pacific, particularly in so-called strategic waterways such as the Straits of Malacca. The narrow, 550-mile-long waterway straddling Indonesia, Malaysia and Singapore has long been a 'pirate's paradise'.⁹ According to the International Maritime Bureau (IMB), the total number of reported piratical incidents was 445 in 2003, a substantial increase from the mid-1990s¹⁰ and these attacks are becoming more violent. The waters of Southeast Asia, particularly Indonesia continue to predominate, and the strategically important Straits of Malacca have shown the greatest increase.¹¹

Maritime terrorism has not been a common means of attack, given the greater ease and attractiveness of heavily populated land targets.¹² Despite the logic that indicates that maritime terrorism is less likely than other arenas for terrorism, there are indications of an increase in attacks and planned attacks on maritime targets since September 11.¹³ 'Given the potential for one strategically sunk ship to severely impede international commerce, the maritime environment may also serve as an attractive domain for very symbolic victories for terrorists.'¹⁴

In both cases, pirates and terrorists are becoming better organised, more adept and more disruptive

'Security in the Straits (of Malacca) appears to be deteriorating, and there are good reasons for heightened concern. Organised criminal syndicates, possibly with international links, appear to be behind some of the increasingly competent attacks, which feature well-trained personnel using fast boats, modern weapons and sophisticated communications.'¹⁵

Though the figures are not yet overwhelming, the trend toward increasing maritime violence and disruption in the region's most important shipping routes is a worrying one. There are good reasons to believe that piracy will continue to increase. And while terrorism and violence on the high seas is not a new phenomenon, 'the current political security environment suggests that a catastrophic attack is both inevitable and imminent.'¹⁶ If major shipping nations are convinced of the possibility of an attack, the incidence of maritime terrorism need not increase markedly to make its effects felt. As long as shipping operates in an environment of perceived threat, terrorists will have achieved a key psychological objective. There is no reason to expect that this trend might be reversed.

An additional reason to believe that maritime

terrorism and piracy might become a more significant threat is that the preconditions that give rise to both are becoming more prevalent in the region.¹⁷ Economic hardship is a factor in both piracy and terrorism. The Asian economic crisis created an incentive for lower socioeconomic classes to turn to illegal sources of income such as piracy. However, economic hardship and inequality also foster resentment and tend to inspire radicalist movements that sponsor terrorism as a means of achieving religious or political objectives. Both function best where the controls of the state are weakest and law enforcement is weak and prone to corruption. Both rely on corrupt local officials to look the other way from suspect behaviour to achieve their objectives. In addition, members of transnational crime syndicates such as pirate rings and terrorists are able to move into and out of states relatively freely if the central state is weak and border controls are poor. Both rely on a level of invisibility to be able to plan and execute operations.¹⁸

The main conclusion to be drawn from these trends is that the threat of maritime violence in Southeast Asia is significant, and becoming more so. The preconditions for maritime terrorism and piracy are becoming more prevalent as regional states grow weaker and less able to manage maritime security, the divisions between rich and poor increase and political and religious radicalism takes hold. Though the incidence of maritime violence is not yet at crisis point, it is showing marked and steady increases and the Southeast Asian region remains the focal point for this activity. Moreover, because of the importance of the region to world trade, the stakes are particularly high and the potential impact is more significant.

Major regional players: interests and responses

Given the apparent inability of regional nations to cope with burgeoning security issues in their maritime approaches, it is no wonder that major international players with significant shipping interests such as the US, China, Japan and India have taken a close interest in regional maritime security. 'For the moment, Southeast Asia's maritime infrastructure will continue to be the soft belly of states that can be attacked with little effort. An attack to the belly is enough to cause the strongest of men to keel over in incapacitation and defeat.'¹⁹ The major powers are highly trade and resource dependent, and this represents a major vulnerability; the so-called 'soft belly' of nations that rely on a secure supply of oil, reliable access to imports and a consistent means of conveying export goods to international markets. In the most optimistic interpretation, these common interests

have the potential to improve major power cooperation in the region.

'Maritime cooperation has also increased, primarily using the anti-terrorist or piracy platform as a rationale for cooperation. The key powers, China, India, Japan, and the US have shown a desire to increase their maritime influence in the region... The web of relationships in the political, economic and military spheres, when fully matured, will also provide a mechanism for the resolution of conflicts before they arise.'²⁰

However, it is important to bear in mind that, while there is broad general agreement that Southeast Asian maritime security is in everyone's interests and that this has given way to greater cooperation, the positions of the major players are not unified. All four powers seek to influence the course of events in the region in their own interests and it would be naïve to suppose that the so-called 'web of relationships' will necessarily result in a single view of the best way to address security problems. Moreover, the strategic and political agendas of the individual states might well take precedence over individual security issues. This is especially true in the case of the unarticulated tension between the US and China, both of which seek to limit the other's influence in this strategically important area.

The lynchpin in any discussion of major power interest in Southeast Asian maritime security is necessarily the US, which has perhaps the largest stakes in addressing both aspects of rising maritime

violence. It has by far the world's largest economy, exceeding the combined Gross Domestic Product of China, Japan and India²¹ and like most other major players, 95% of its trade is conducted by sea. It is the single largest consumer of crude oil on the planet and the largest net exporter of goods.²² Given its economic and strategic interests in the region, and as the world's only current superpower, the US seeks to maintain and consolidate its presence in the region, and this is underpinned by desire to contain the growing influence of China.²³ This is characterised by a need to positively engage with China in the region on the one hand, and to contain any possible expansionism on the other.²⁴

It also sees itself as the main protagonist in the so-called 'Global War on Terror' and soon after the terrorist attacks of September 11 2001, identified global shipping as a critical vulnerability to terrorist attack on American interests. As such, it has declared a significant interest in maintaining the security of its seaborne trade. The US now refers to Southeast Asia as the 'second front' of the War on Terror and the region's many homegrown and active terrorist organisations, some with alleged connections to al-Qaeda and Muslim separatist groups, became obvious targets for US and national counterterrorism initiatives.²⁵ The US was the main driver of adoption of the International Ships and Ports Security (ISPS) Code by the International Maritime Organisation, bringing significant pressure to bear on would-be trading partners of the United States to ratify it. In 2003 the US proposed the



Regional Maritime Security Initiative (RMSI) which, if implemented, would involve not only closer intelligence sharing with Southeast Asian states, but also deployment of US Marines and special forces on high-speed vessels to interdict maritime threats within the region.²⁶ This has been met with enthusiasm from certain regional states, particularly Singapore, but more reluctantly from Indonesia and Malaysia, which maintain significant reservations about the impacts of the initiative on regional sovereignty.²⁷

China must be considered alongside the US as the other major influence in the region, as much for its impact on the jockeying for position of the other actors as its own Southeast Asian strategic agenda. It is already a major Asian power, with deep economic ties to the ASEAN region, strong reliance on the maritime economy, and strategic dependence on secure SLOCs.²⁸ This dependence is likely to increase as its crude oil imports from the Arabian Gulf increase over the next decade.²⁹ As a shipping nation, it has one of the world's largest commercial fleets after Japan and Korea and has become the largest container producer.³⁰

As it emerges as the world's next superpower, China's strategic intent to make its influence felt in this region is likely to grow. Worryingly for India, after China became a net importer of oil in 1993, a senior Chinese Navy official declared 'we can no longer accept the Indian Ocean as an ocean only of the Indians.'³¹ However, it is already aware of local and global suspicions of its expansionist tendencies in the region, and has sought to establish itself as a regional good citizen to counter these perceptions.³² It is a participant in or signatory to a number of international agreements and activities on maritime security, but is wary of any arrangement that allows the US too much predominance in the region. It has voiced reservations about the US proposed Proliferation Security Initiative (PSI).³³ On the other hand, in spite of concerns about US presence, and given its significant economic maritime interests, it is party to the Suppression of Unlawful Acts (SUA) Convention, which extends the rights of maritime forces to pursue pirates, terrorists and maritime criminals into foreign territorial waters.³⁴

Japan relies heavily on seaborne trade, with special reliance on the Malacca Straits for its oil supplies. 95% of its imports and exports shipped by sea and 80% of its oil comes through the Malacca Strait.³⁵ Its liquid natural gas (LNG) trade is also heavily dependent on the Southeast Asian shipping routes.³⁶ Japan acknowledges the growing danger of maritime terrorism to its shipping interests in the region.³⁷ It therefore has clearly identified strategic interests in assisting shipping and port security through the Southeast Asian region. Politically, it

has sought to take a multilateral cooperative approach to furthering these objectives. Japanese security planners have proposed the creation of a multinational maritime security and safety regime that would include a capacity for counter-piracy, even calling for the creation of a regional coast guard, which has so far been unsuccessful.³⁸ It has had more success promoting bilateral anti-piracy exercises in the region and negotiated to establish a Regional Cooperation Agreement on Anti-Piracy in Asia, involving intelligence exchange between ASEAN, Japan, China, South Korea, India, Bangladesh and Sri Lanka.³⁹

However, Japan may have an additional political and strategic interest in keeping a high profile in the region, thus balancing China's influence. Though China is Japan's largest trading partner, Japan would still seek to remain the most influential regional force, a lead that is steadily slipping.⁴⁰ To that end, the Japanese alliance with the US is vital, and gives it greater leverage to pursue its strategic and security agendas in the region and greater room to manoeuvre in its dealings with its neighbours, including China.⁴¹ That said, Japan, like other major players, would still prefer to see China develop in a stable, engaged, democratic manner so seeks to positively influence this process rather than attempting to hold back the tide of Chinese growth.⁴²

India has similar interests in maintaining secure Southeast Asian shipping routes. It is heavily reliant on maritime trade for its viability. 50 oil tankers enter Indian territorial waters daily⁴³ and by 2020, its oil consumption is expected to reach 38 million barrels per day, with 80% coming from the Persian Gulf through the Indian Ocean. Moreover, the recent Mumbai bomb attack demonstrated that India is very much a terrorist target. 'Given the propensity of influential Saudis to fund extremist causes abroad and of the Pakistanis to provide material support to such causes, the phenomenon of Jihadi terrorism is now taking roots in India's neighbourhood.'⁴⁴ In geopolitical terms, 'India is located at the crossroads of the flow of global oil supplies and the movement of jihadi terrorism from Afghanistan and Pakistan to the Asia-Pacific region.'⁴⁵

India has welcomed US anti-terror efforts in Central Asia, and an American withdrawal could create a vacuum that would allow fundamentalist Islamic movements to flourish.⁴⁶ As a demonstration of their mutual interest, the US and Indian navies recently cooperated in patrols of the Malacca Straits in a joint anti terror and piracy maritime security initiative.⁴⁷ But India's enthusiastic participation in US-led initiatives may be borne as much out of a *realpolitik* recognition of the other benefits of allying with the world's only current superpower and counterbalance to the alliance between China

and Pakistan, with whom Indian relations are strained to say the least.⁴⁸ It is likely that India will continue to support the US in its maritime security efforts because it serves its maritime interests as well as the strategic alternative it offers to the 'Sino-Pakistani nexus' that India perceives as a threat.⁴⁹ Similarly, the US sees the Indian relationship as a useful foil to the influence of China in the region.⁵⁰

Conclusion

Given the absolute importance of a robust system of maritime trade and shipping to the world economy, any disruption to that system is likely to be of great concern to affected coastal states that rely on the maritime environment for their livelihood. It is of equal concern to major trading nations whose economies depend on seaborne trade, as about 95% of the world's cargo is moved by sea. The Southeast Asian region has long been a haven for pirates, and the rate of piratical attacks is increasing. Moreover, though still uncommon, in the aftermath of the September 11 terrorist attacks, a single major maritime terrorist attack could have potentially catastrophic consequences for populations, international security and world trade. While the rates of both kinds of maritime violence are still relatively low, the preconditions for both exist in abundance across Southeast Asia, and are not expected to improve in the near future. As such, it must be concluded that the threat of maritime violence in the region is significant and has the potential to become more significant as time goes on.

The major players in the region, specifically China, the US, India and Japan, have clear strategic interests in promoting a secure Southeast Asian maritime environment, and there is evidence of growing political cooperation amongst actors to achieve this aim. However, all have other strategic interests that may be incidental to maritime security interests. Japan, India and the US are concerned with maintaining their influence in the region, while balancing the increasing influence of China, due to become the next world economic and military superpower. On the other hand, China is seeking to simultaneously shore up its influence in the region and reassure other players that it intends to engage rather than expand.

¹ N Renwick & J Abbott, 'Piratical Violence and Maritime Security in Southeast Asia', SAGE Publications, Vol. 30(2), 1999, p. 275.

² United Nations, *United Nations Convention on the Law of the Sea*, Division for Ocean Affairs and the Law of the Sea, New York, 1997.

³ *ibid.*

⁴ T.R. Shie, *Ports in a Storm? The Nexus Between Counterterrorism, Counterproliferation, and Maritime Security in Southeast Asia*, Paper delivered at CSIS Pacific Forum, Hawaii, July 2004.

⁵ J McFarlane, 'Transnational Crime and Asia-Pacific Security' in S.W. Simon (ed), *the Many Faces of Asian Security*, Rowman and Littlefield, USA, 2001, p. 196.

⁶ T.R. Shie, *Ports in a Storm?*

⁷ H.M. Ibrahim, *Threats to the Straits of Malacca: Environment, Responses and Solutions*, Faculty of Science and Environmental Studies, Universiti Putra Malaysia, 1997.

⁸ *ibid.*

⁹ *Terrorism Fears Grow on Asian Oil Route*, Jihad Watch, June 4 2004,

<<http://www.jihadwatch.org/archives/002120.php>>, viewed 20 October 2004.

¹⁰ H Gibson, 'A Plague of Pirates', *Time Magazine*, Vol 150, No 7, August 18 1997,

<<http://home.wanadoo.nl/m.bruyneel/archive/modern/plague.htm>>, viewed 16 August 2004.

¹¹ E Lampert, 'Is shipping heading for the apocalypse?', *Maritime Review*, May 2004, p. 16.

¹² Shie, *Ports in a Storm?*

¹³ *ibid.*

¹⁴ *ibid.*

¹⁵ 'Piracy and maritime terror in Southeast Asia: Dire Straits', *IJSS Strategic Comments*, Vol 10, Issue 6, July 2004, p 1.

¹⁶ T.R. Shie, 'The Nexus Between Counterterrorism, Counterproliferation, and Maritime Security in Southeast Asia' *CSIS Issues and Insights*, Vol 04-04, <http://www.csis.org/pacfor/issues/v04n04_ch3.cfm>, viewed 5 August 2004.

¹⁷ Renwick, & Abbott, *Piratical Violence and Maritime Security in Southeast Asia*, p. 186.

¹⁸ L.I. Shelley, *The Nexus of Organized International Criminals and Terrorism*, Transnational Crime and Corruption Centre, 2003.

¹⁹ G.G. Ong, 'Pre-empting Maritime Terrorism in Southeast Asia' *Viewpoints*, Institute of Southeast Asian Studies, Singapore, 29 November 2002, p. 3.

²⁰ J Ho, 'Economic Power, Maritime Power and Maritime Challenges in East Asia', *Singapore Armed Forces Journal*, Vol 30, No 1.

<http://www.mindef.gov.sg/safty/pointer/back/journals/2004/Vol30_1/3.htm>, viewed 9 October 2004.

²¹ Dupont, A. *East Asia Imperilled: Transnational Challenges to Security*, Cambridge University Press, Cambridge, 2001, p. 71.

²² Central Intelligence Agency, *CIA World Factbook*, <<http://www.cia.gov/cia/publications/factbook/geos/us.html>>, viewed 29 October 2004.

²³ Ho, Economic Power, Maritime Power and Maritime Challenges in East Asia.

²⁴ *East Asian Strategic Review*, National Institute for Defence Studies Japan, the Japan Times, Tokyo, 2003, p. 5.

²⁵ Shie, *The Nexus Between Counterterrorism, Counterproliferation, and Maritime Security in Southeast Asia*.