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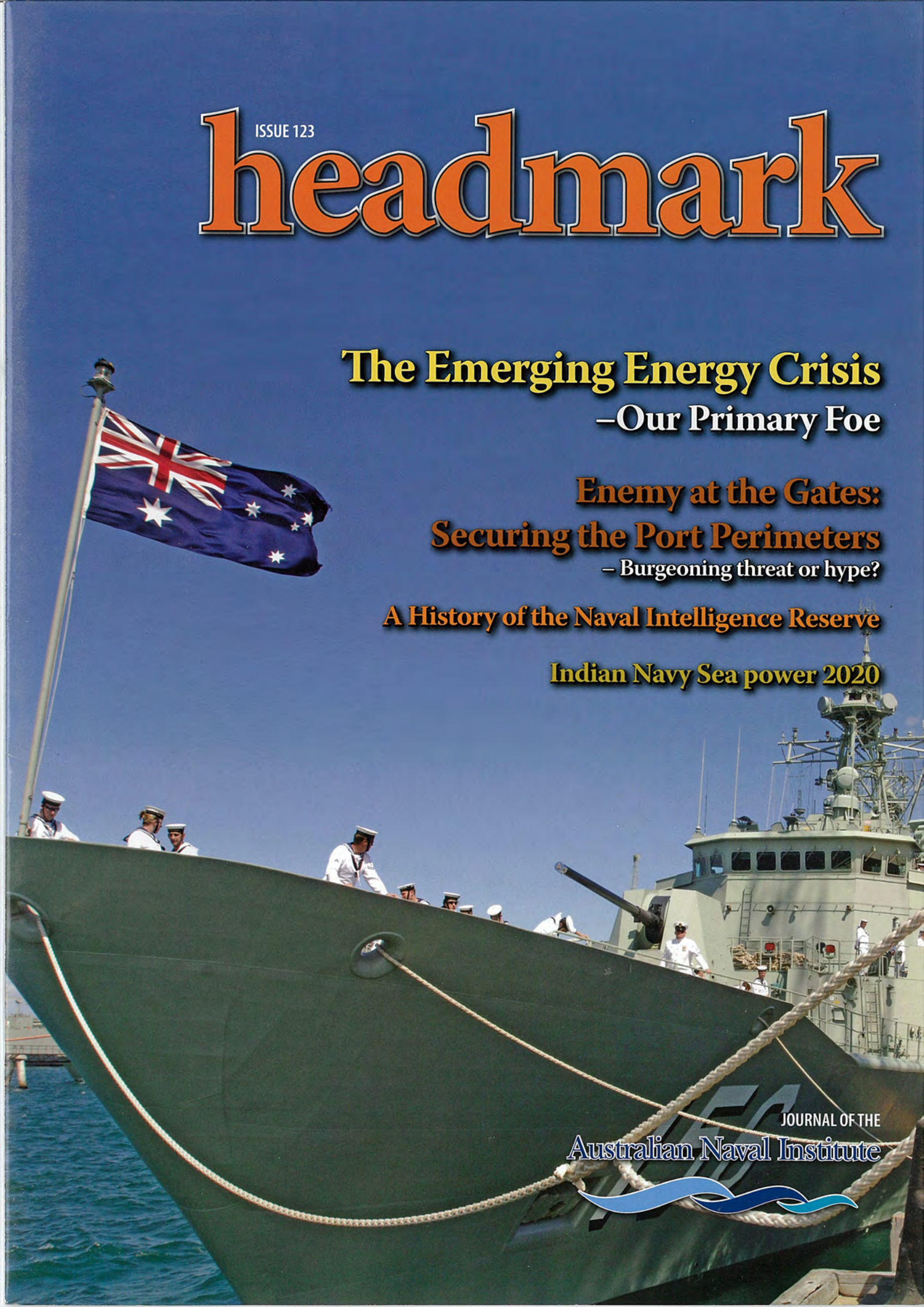

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President's Message

Firstly, a happy New Year to all members of the Institute. We believe that the ANI made much progress in 2006 and I am hoping – and will do my best to make sure – that 2007 will be even better.

As an opening note, I would like to welcome ATI to the ranks of our sponsors at Silver level. Every addition to our sponsors increases the resources of the Institute and provides it with the ability to do practical things to forward our aims.

I would also like to take this opportunity to thank the Editorial Committee, of which Peter Jones has now handed over the leadership to Steve Gilmore, and our Editor, Tom Lewis, and Designer, Diane Bricknell, for their work on the Journal. I think that all will agree that Headmark not only looks good but also reads well and is a credit to the Institute.

We are currently looking at the forward program for 2007, which I hope to have settled in time for presentation to the membership at the Annual General Meeting. At this stage, we intend to provide some form of support to the Sea Power Centre's biennial King-Hall naval history conference. The theme is 'Naval Networks: The Dominance of Communications in Maritime Operations' – a theme in which the term 'communications' will be exploited in all its naval contexts.

In addition to the now traditional two-day event in Canberra on Thursday 26 and Friday 27 July, there will be a one-day seminar in Sydney at the Australian National Maritime Museum on Tuesday 24 July – a great step to extend the reach of this increasingly significant activity. We are expecting that Dr Nicholas Rodger (whose first two volumes of his three volume history of the Royal Navy, The Safeguard of the Sea and The Command of the Ocean have been so acclaimed) will be the keynote King-Hall speaker and that Dr Gary Weir from the United States, an expert on submarine and undersea warfare development, will be this year's Synnot Lecturer. While their detailed programs outside the major King-Hall events are yet to be defined, we will look to keep ANI members informed of any events of potential interest.

We are looking to other seminars and events throughout the year, striving to maintain the balance between the ideal and the practical.

The Annual General Meeting is currently planned to take place at 1730 in the Military Theatre of the Australian Defence Force Academy in Canberra on Friday 16 March. We plan to follow this with an ANI Reception in the ADFA Officers' Mess at 1830 to which all members are invited. This will have the dual benefit of confining the proceedings of the AGM and providing an inducement to make up the quorum! As part of our recruiting effort, we would be delighted if members could bring as their guests prospective candidates for membership.

All the best,
James Goldrick.
Autumn 2007

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Front page photograph:
The last line is released and HMAS Toowoomba departs for the Persian Gulf.

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Design & DTP:
Diane Bricknell
diartist@bigpond.net.au

The Emerging Energy Crisis – Our Primary Foe

MATHEW O'LOUGHLIN

The Royal Australian Navy (RAN) is procuring ships, submarines and aircraft, a process that typically takes about a decade, which is followed by a service life of approximately thirty years. For a large program such as the ANZAC ship project, COLLINS submarines or the Joint Strike Fighter, this can also include decade long production run. All of this means that we may now be considering platforms that will be in commission in 2055.

It is no secret, but may come as a surprise to some, that the world is rapidly running out of its crude oil reserves. One significant outcome from this is the ever increasing cost of oil, felt by all of us in the increased price of fuel and follow on effects such as flight fare levies and increased transport costs pushing up the price of commodities.

The current significant major capital projects for the RAN are the Air Warfare Destroyer (DDG) and Landing Ship Helicopter Dock (LHD).

The options for the DDG are the US Gibbs & Cox design based on the Arleigh Burke DDG and Navantia of Spain's F-100. These ships will be the RAN's front line combatants for their commissioned life, with the first DDG projected to enter service in 2013.

The options for the LHD are the Navantia LHD and DCN Mistral, the first of which is expected to enter service in 2012. These are large ships with a displacement of greater than 20,000 tonnes. The aim of this paper is to highlight major long term issues with defence procurement due to constrained focus on propulsion systems.

A Brief History

Australia is an energy rich nation. We export coal, Uranium and Liquefied Natural Gas (LNG), however we are a net importer of crude oil and crude oil products, with about 40% of our usage coming from international sources.

The RAN and our forbears have a long tradition of using different sources of propulsion, moving from Sail to Coal to Diesel over a period of about 50 years. Since legacy WW I ships were decommissioned all our ships have been powered by forms of diesel, with the current form being F-76, a high grade marine Diesel.

Peak Oil

The term "global oil-production peak" means that a turning point will come when the world produces the most oil it will ever produce in a given year and, after that, yearly production will inevitably decline. It is usually represented graphically in a bell curve. The peak is the top of the curve, the halfway point of the world's all-time total endowment, meaning half the world's oil will be left. While that is a lot of oil, there's a big catch: it's the half that is much more difficult to extract, far more costly to get, of much poorer quality and located mostly in places conflict may arise. A substantial amount of it will never be extracted. [1]

The best estimates of when peak production will actually happen have been somewhere between 2005 and 2010. In 2004, however, after demand from burgeoning China and India shot up, and revelations that Shell Oil wildly misstated its reserves, and Saudi Arabia proved incapable of ramping up its production despite promises to do so, the most knowledgeable experts revised their predictions and now concur that 2005/2006 is expected to be the period of all-time global peak production.[2]

The availability of Diesel, a product of crude oil, is in decline, while the cost will only increase. We are facing the end of the cheap-fossil-fuel era. This can not be over stated; reliable supplies of cheap oil and natural gas underlie everything we identify as the necessities of modern life -- not to mention all of its comforts and luxuries: central heating and air-conditioning, cars, airplanes, electric lights, inexpensive clothing, recorded music, movies, hip-replacement surgery, national defence -- you name it.[3]

Coaling ship the hard way by basket Philippines circa 1933 (Image ID: theb3257, courtesy NOAA Ship Collection and the family of Captain Robert A. Earle)

Implications for the RAN

RAN ships patrol Australia's waters, exercise locally and globally and deploy operationally across much of the world. Last financial year (FY05/06) the Navy burnt 87,391 CZs (87,391,000 litres) with the Frigates consuming half of the total. While price may become an issue it should not be the focus of this paper, as in a time of crisis cost will not be a problem. In the long term it will be availability of fuel that will determine whether or not our ships can put to sea.

Renewable fuel sources such as bio-diesel, ethanol and hydrogen are possible sources of fuel in the long term, however these are all highly resource demanding. Current production of canola or sugar requires cheap and available diesel to plough, sow, harvest and transport the crop.

Hydrogen may be extracted from water through the process of electrolysis, however this production requires a great deal of energy. Such energy could be produced in the medium term by burning finite fossil fuels such as coal, or by nuclear power. It should be noted that the RAN is not the only consumer of fossil fuels and any replacements will be highly sought after and very expensive when compared to today's energy prices. I will not discuss the environmental issue of burning coal to produce electricity, suffice to say that it is not the cleanest of energy sources. The environmentally friendly options such as using wind or solar generated power also have draw backs, not only the enormous problem of scale but the fact that the components require substantial amounts of energy to manufacture and the probability that they can't be manufactured at all without the underlying support platform of a fossil-fuel economy.

A long term solution may be to switch to nuclear powered ships, a path that the United States Navy tried in the 1960s, the result of which was the United States Ships *Longbeach*, *Truxton* and *Bainbridge*. The *Truxton* was an attempt by the USN to build a frigate sized escort powered by a nuclear reactor; the result was a cruiser that displaced in excess of 9,000 tonnes. The USA was the first country to develop the atomic bomb and have a well developed nuclear industry. All USN aircraft carriers are now nuclear powered. Australia does not currently have a domestic nuclear industry; the Australian Nuclear Science and Technology Organisation operates one reactor at Lucas Heights, NSW, for medical research. For the RAN to operate nuclear powered escorts in the long term would require immense research, development and training to start now, and would require significant investment.

USS Bainbridge, one of the first nuclear-powered surface ships (Courtesy *USS Bainbridge* Association)

Hydrogen may be extracted from water through the process of electrolysis, however this production requires a great deal of energy

Changing from F-76 to LPG or LNG could be an option in the mid term which would require moderate modification to gas-turbine powered plant, with larger modifications to the ships' fuel tanks and supply system.

Strategic Fuel Reserves - How much is enough?

The RAN will have to carefully consider and prioritise the way we will conduct our business in a fossil fuel scarce world. Operational tasks such as

The Russian nuclear-power ship *Kirov* (Courtesy Dr. J David Rogers)

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border protection, UN / Coalition and regional security responsibilities may be the only activities that ships will be allowed to sail for, however this may be at the cost of burning precious strategic fuel reserves that are unable to be replenished. In such an environment the RAN can not continue to burn 87,000 CZs each year. Smarter options such as simulation will have to be expanded, numerous bridge and operation room simulators will need to be linked together for our command teams to hone their skills. On the job training may be a thing of the past, as an operational environment does not make for a good classroom, therefore realistic trainers need to be developed for the maintainers to develop the required essential skills.

It should be noted that this is a global crisis and any conventional foe will be suffering the same fuel limitations as the RAN. Such limitations will have less an effect on unconventional warfare, such as that practiced by terrorists. The current technological advantage that we and our allies currently enjoy will be reduced by the demise of fossil fuels if we do not change our practices.

Should our current navy be required to fight a full scale conventional war at sea I would expect that the fuel consumed in a calender year would almost certainly be more than triple our current annual use, 300,000 CZ may be burnt per annum. Should crude be available the import may be hampered by opposing forces. How long can the RAN continue this effort? Any strategic war reserve should allow for our navy to be unconstrained for at least two years, as such, with our current fleet we require 600,000 CZ. In today's environment this is feasible, but what of the future? And what do we do when the strategic reserve is exhausted?

It may be that the navy which can still operate in these times is the navy that controls the sea. Nuclear powered vessels may be the only unconstrained vessels operating in the future. The United States and the United Kingdom operate submarine fleets that are entirely nuclear powered. As already mentioned the United States also operate nuclear powered aircraft carriers and Russia operates the *Kirov* nuclear powered cruiser. Russia and France operate a mix of diesel powered and nuclear powered submarines and in our region China is commissioning new JIN class SSBNs and *Shang* class SSNs, while India has been actively developing a nuclear powered submarine since the 1980s. The range, power and endurance afforded by nuclear power make this form of propulsion ideally suited to large powerful ships and submarines. This should be given due consideration when the *Collins* class submarines are replaced.

The smaller patrol craft and escort sized frigates and destroyers that the RAN has traditionally operated are not so suited to the complexities of nuclear power generation. Fuel efficient propulsion systems allow any strategic reserves to go further. By using combined diesel and gas-turbine propulsion *Anzac* class frigates are approximately 40% more fuel efficient than the gas-turbine powered Oliver Hazard Perry class. Future escorts should both be highly efficient and able to operate on fuels that will be widely available in the long term.

The planned destroyers, which are expected to be in commission until 2045 do not currently match this criteria. The Gibbs & Cox evolved destroyer is based on the USN Arleigh Burke Flight IIA, which displace 9,188 tonnes and are powered by 4 GE LM 2500-30 gas turbines producing 100,000 hp (74.6 MW) which propel the destroyer at greater than 31 knots with a maximum range of 4,400nm at 20 knots. The other alternative, the F-100 displaces 5,850 tonnes and is powered by Combined Diesel or Gas turbine 2 GE LM 2500 gas turbines; 47,328 hp(m) (34.8 MW) or 2 Bazán/Caterpillar diesels; 12,240 hp(m) (9 MW) which propel the destroyer at greater than 28 knots with a maximum range of 4,500nm at 18 knots. Neither of these vessels compare favorably with our Anzac class which have a range of 6,000nm at 18 knots.[4]

It is now in the initial planning, design and construction that efficiencies and alternative fuel options should be incorporated into the selected platform. Podded propulsors may be a viable alternative, where there is not the usual main engine, gear and shaft arrangements as in service with all RAN ships, but rather an electric generation plant, that may be located anywhere in the ship, possibly above the water line to reduce acoustic signature, and cables that go to podded electric dives. Such an arrangement is not new, and is proposed for both the LHD designs being considered. This could facilitate a more readily accessible power plant which could simplify the complex task of re-engineering to accept alternative fuels. Should such fuels be gaseous such as LNG, LPG or Hydrogen the task of re-engineering is much more complex and may see all vessels not so designed removed from service as modification may be more expensive than replacement.

The RAN's dependence on F-76 will have to change as the age of abundant, cheap fossil fuels comes to an end. Renewable liquid fuels such as bio-diesel will be incredibly expensive in the future and may only be available to the RAN for a full-blown war, anything less and its consumption may not be warranted. In such times the reserves of renewable fuels will be quickly expended. Gaseous fuels, such as Hydrogen, LPG or LNG may be available in the longer term to power our surface ships, but this would require modification which will be far cheaper if incorporated during initial build. Adaptable propulsion systems should be given a high priority, as should fuel economy.

Australia should embrace nuclear power in the medium term, this is no small feat, initially universities and technical colleges have to amend their syllabus, this will then need to be followed by the development of a domestic nuclear industry to ultimately achieve a military one. The RAN should replace our submarine fleet with nuclear powered vessels, thus providing a reliable power source in the longer term and all the endurance that commanders desire.

The RAN currently uses simulation to train its command teams and key personnel. This should be expanded to allow full scale operations to be simulated with interaction between the entire fleet and allied units.

To fight and win at sea, first a navy must be able to put to sea. In an ever changing environment one must adapt early

or perish. If appropriate consideration is given now the RAN will survive the impending crisis.

Mathew O'Loughlin joined the RAN in 1987 as an Electrical Technical Weapons sailor and attained the rank of Petty Officer. Commissioned in 2001 under the Sailor Entry to ADFA, he undertook a Batchelor of Science degree. In 2006 he was an Officer of the Watch and Force Protection Officer in HMAS Tobruk during Operation ASTUTE. He is currently the Staff Officer - Deployment Conditions Policy.

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Notes

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[1] Kunstler, J. H. 2005 ' The long emergency: what's going to happen as we start running out of cheap gas to guzzle?' *Rolling Stone.* Accessed 29 Aug 2006: http://www.commondreams.org/views05/0413-28.htm

[2] ibid.

[3] ibid.

[4] Janes Fighting Ships 2007, Accessed 30 August 2006: http://intranet.defence.gov.au/janes/janes/jfsfram.htm

Enemy at the Gates: Securing the Port Perimeters

NAZERY KHALID

On the fifth anniversary of the 9-11 incident, the author ponders on and cautions against the 'irrational exuberance' dominating the discourse on maritime security and attempts to provide a sense of perspective on the issue.

Maritime security post 9-11: Burgeoning threat or hype?

The aftermath of the attacks on American commercial and political interests on 11 September 2001, now famously known as the 9-11 incident, and the subsequent raising of the threat perception bar, have prompted maritime industry stakeholders to view security issues more seriously. Those event-altering attacks, and the subsequent bombings in Madrid and London, have raised the specter of terrorist assaults being inflicted on other transport modes, underlining the terrorists' dastardly resolve to maim the populace to get their message across.

Maritime transport, which carries an estimated 90% of global trade and involves many players and valuable resources along its supply chain, has not escaped the fear of terror currently gripping the world. Suddenly the phrase 'maritime terrorism' has become omnipresent, despite the very low occurrence of officially recorded incidents involving maritime interests that can be attributed to acts of terror.

The dire predictions of the imminent attacks on maritime interests and infrastructure, some bordering on the hyperbolic and almost Hollywood-ish in scope, have preoccupied the minds of maritime security planners. Blink and a security lapse leading to a spectacular, destructive 9-11 type of attack will occur, if some 'expert analyses' were to be taken as gospel. Despite the remarkable safety record of the maritime sector, the tendency of some over-the-top security analysts to warn of the inevitable big attack on ports and merchant ships has shown no sign of easing. Some analysts have even gone so far as to issue warnings that a maritime version of 9-11 is a matter of *when*, not *if*.[1]

In the shadow of this perceived looming threat, the maritime industry has undertaken various measures to beef up security in shipping, ports, cargo and maritime logistics. The implementation of these initiatives reflects the need to protect the safety of lives, systems and components in the maritime sector and to safeguard its strategic value to the global trade and economy.

While the measures have been credited with increasing awareness in the maritime sector, debate is still raging as to whether the initiatives have achieved anything more than creating a superficial sense of security, while compromising the sector's efficiency. Proponents of the measures maintain that the occurrence of only a few significant terrorist attacks on the maritime sector thus far provides testimony to the effectiveness of the security initiatives. But while the initiatives provide some measure of comfort, there is still an absence of a more quantifiable and agreed upon model to gauge their effectiveness. Questions have been posed whether the measures introduced are sustainable, cost-effective, or in the case of some, even necessary in the first place. Skeptics have wondered if the security initiatives are appropriately tailored to the level of threat faced by the maritime sector in the context of today's security realities.

Exaggerated or not, this much can be ascertained – without adequate security, mass transport systems are 'sitting duck' targets for terrorists bent on displaying their handiwork

to a large audience, if only for shock value. The very nature of these systems - catering to many, involving a cobweb of connections and components, and sometimes extending a global reach – make them highly vulnerable to attacks with potentially calamitous consequences.

Of the various transport modes, maritime transport's vulnerability and exposure to the threat of terror is all the more worrisome, given its importance and international reach. In the wake of the 9-11 attacks, the need to boost defenses along the maritime supply chain against the scourge of terror has become a critical matter of global interest. Although the security tools and systems for aviation and maritime transport differ greatly, the incident provides a sobering lesson of the consequences of being complacent. As seen from the 9-11 attacks, the risk assessment and threat perception framework in place proved glaringly ineffective in combating non-conventional threats. The existing 'line of defense' was breached with stunning ease by the perpetrators of the attacks, allegedly armed with nothing more than box-cutters.

However, a line must be drawn between containing real, unconventional threats and exaggerating them to unrealistic proportions. The temptation to conveniently lump maritime transport in the same risk group with other transport systems and assigning them with the same level of risk should be resisted. Similarly, assigning the same threat perception to a potential terror threat with the more mundane armed robbery at sea incidents should be avoided in order to tailor the appropriate and effective response.

Bolstering port security

The 9-11 incident and the increasing convergence of maritime transport and other transport modalities have put the question of port security in the spotlight. The interdependency of maritime transport with other transport modes and the globalized nature of maritime trade combine to put the maritime sector in a highly vulnerable position. Not at all surprising for a transport mode which carries much of the world's trade and the bulk of its cargo.

Post 9-11, security considerations have been added to the already challenging task of delivering goods in the fastest and most economically viable manner. It is no longer enough to deliver quickly and efficiently – today's security realities demand that they also be delivered securely and safely.

Such expectation has exerted enormous pressure on the maritime industry to balance security requirements and operational efficiency. The possibility of terrorist attacks on maritime interests has driven security planners and agencies to pursue various initiatives to mitigate the security risks. The introduction of measures such as the International Ship and Port Facility Security (ISPS) Code[2] and Container Security Initiative (CSI)[3] marks a milestone in the maritime sector and has had a significant impact on the way ships and ports operate. As testimony to the maritime industry's resolve to adapt to post 9-11 security realities, these measures have been successfully implemented despite the initial strong reaction to them. The teething problems, not unexpected in the course of introducing initiatives of such magnitude, have largely been overcome.

Today, ISPS and CSI stand as solid proof of the kind of collective commitment needed to face security threats head-on. Few would argue that ports and the shipping sector have been the worse for wear with the enhanced security measures, despite the occasional complaints on their cost and the inconvenience they bring. The initiatives have played a catalytic role in altering the archaic perception of port security from a reactive stance to a proactive one. They have, to a certain extent, united the maritime community to rally behind the need to collectively contain the threats of terror. The surprisingly fast pace of their implementation epitomized the awareness and resolve of the industry to adjust to post 9-11 security realities.

Sense and sensibility: Appraisal of post 9-11 maritime security measures

Post 9-11 security measures have had a profound impact on the players, operations and processes in the maritime sector. Considering the majority of the world's trade is dependent on an unhindered flow of maritime transport, the need to secure the maritime supply chain is unquestionable.

However, despite the largely painless implementation of the measures, quiet discontentment still resonates among maritime stakeholders who continue to wonder whether the initiatives introduced are effective and sustainable, or are at all addressing the real threat.[4] Some stakeholders, while grudgingly acknowledging the merits, argue that the initiatives put in place to prevent the maritime equivalent of 9-11 are too Draconian. Some have wondered out loud if they are not a case of 'sending in the cavalry to kill a cockroach.'

The most common grouse heard is that the new security programs have been hastily conceived by security planners without broad consultation with the stakeholders. The fast-track implementation of some of the measures has rendered them to be perceived as non-user friendly. The more damning critics condemn the measures as being overly intrusive, restrictive and counterproductive. Among merchant shippers, a frequently heard gripe about a scheme like the ISPS Code is that it 'adds to the paperwork,' a diplomatic description of the painful delays that their time-obsessed business could ill-afford.

Improvements in security measures have no doubt created a safer environment in ports, but the financial costs of compliance with such initiatives have been a bane to governments, terminal operators and other parties.[5] While stakeholders in ports and shipping generally appreciate the need to enhance maritime security, complying with some measures has created tension and conflict amongst them. For example, to compensate for their expenses on security - such as for personnel, training, systems and equipment - some port operators have charged security levy to shippers on the pretext of implementing new security measures, to the chagrin of the shipping community.[6]

Enemy at the Gates: Securing the Port Perimeters

The impact on efficiency is another intensely debated aspect of complying with post 9-11 maritime security measures. Demands exerted by the new measures have come at considerable financial and business costs to port operators. Some ports have been struggling with the challenge of balancing the ensuing implications of complying with schemes such as the ISPS Code and maintaining their long-standing relationship with their users. Already, several terminal operators have resorted to imposing a security levy or tax in the name of providing better security to ships calling at their ports, despite the opposition of shipowners and operators.[7]

Additional inspections of ships, cargo and crew have caused delays, leading to congestion at ports and the build-up of bottlenecks along the maritime supply chain. These have inevitably strained the relationships between ports and their users who, in some cases, have made their dissatisfaction known in no uncertain terms.[8]

None of this is good for a business in which speed is of the essence, time means money, loyalty is fickle and competition is vicious. Surcharges imposed in the name of security have added to the cost of port usage. More security checks mean more time is spent by ships at ports, longer turnaround time, slower delivery of goods and greater inefficiency along the maritime supply chain.

In the long run, these can become detrimental to speed and efficiency – pillars upon which maritime transport is built. Security was merely at the periphery of these tenets, until after 9-11. It is now being elevated to a main pillar status, despite the fact that its concerns and objectives are in discordance with the quest for speed and efficiency to deliver cargo.

No doubt the flurry of initiatives has greatly enhanced security in the maritime realm, but to view the matter objectively, one wonders if the complaints against the security euphoria do have some currency. The measures have been implemented on a piecemeal basis, with separate agencies pushing programs relevant to their purview, with scant regard to integrate them with other schemes. At times, one cannot help but wonder if, perhaps, overzealous agency officials have oversold the need for some of these measures by hyping the risks and threats that the measures are supposed to mitigate and neutralize.[9]

While the new security measures have indeed created a heightened sense of awareness among maritime players on security matters, it is hard to assess if they truly provide a useful deterrence against attacks on ships. Take the ISPS Code for example, which only focuses on cargo ships while leaving other types of boats, such as pleasure crafts, no less vulnerable to attacks today compared to pre 9-11 days. There continues to be a vacuum in providing security to other types of ships at sea – a situation that has contributed to the emergence of private security companies providing armed escorts to vessels in certain waters. Their operations have become a contentious issue amongst the littoral states in such areas who claim that their presence in territorial waters is a violation of their sovereignty. This is yet another illustration of how post 9-11 threat analysis and security measures have inadvertently created new headaches instead of curing existing, or even imagined, ones.

Breaking the Maritime Security Code: Towards a More User-Friendly Framework

Although many measures have been undertaken to boost security in the maritime sector, it remains to be seen if they are spot-on in anticipating the kinds of threats they are supposed to encounter. Any security system professing itself to be the 'safest' is bound to be tested at one point or another by curious evil minds. Build a bigger mousetrap and a bigger mouse will come along, as the adage goes.

The dilemma lies in the fact that while the threat of terror can be endlessly imagined up to Armageddon levels, the resources to neutralize them are limited. Hence, there is a need to exercise a sense of proportion in allocating resources to procuring equipment, building systems and training personnel to prepare for the kind of threat anticipated.

While the measures currently in place have done well to enhance security awareness in the maritime sector, it is important to systematically begin laying the foundation for a more realistic, economic, sustainable and effective security environment. It might be jarring to talk about the basics when all sorts of initiatives are already in place, but such allowance should be given in cognizance of the fact that security is a dynamic concern. The nature of threats change, hence the assessment of the risks

and the responses to them should be just as dynamic. A rigid, iron-clad security framework, more suitable to encountering predictable, static threats, is not very relevant in the face of unconventional threats from increasingly creative, brazen evildoers.

The first task is to assess the threats rationally to a satisfactorily realistic degree. Admittedly the task is an imprecise science at best, but solid intelligence and good information gathering and data analysis are the keys to separating the wheat from the chaff.

Technology should be put to full use to produce effective solutions to scan the huge number of containers traversing the maritime supply chain daily for illicit weapons, and to track the location and movement of suspicious cargo along the chain. A whole bunch of impressive and cutting-edge technology and systems are already available in the now-lucrative field of maritime security. It is a question of synthesizing them into a scheme that can be applicable to as many ports and maritime infrastructure set-ups as possible, and at a reasonable cost.

The international nature of maritime trade calls for common standards, technical or organizational, to enable security measures to be implemented in the international maritime supply chain to facilitate the scanning, inspection and tracking of cargo. A global tracking system to track cargo movement on a global basis is surely not light years away, but the challenge is to make it available and affordable to many and effective beyond doubt, towards creating maritime domain awareness so essential in fighting terror at sea. Also, developing nations lacking in resources and expertise will need help to pay for systems, or maritime security will end up becoming a pursuit of the privileged few.

Governments, agencies, the maritime community and other stakeholders must increase cooperation to make the best out of the tense situation created by today's security realities and the inconvenience caused by the frameworks designed to combat them. This could be in the form of technical cooperation, intelligence sharing, joint operations and training, assistance in cash and in kind, and many others. As terrorists wage their wars in a borderless theater, the means to anticipate and combat them should also be transnational in nature. All these must be achieved without posing a hindrance to commercial imperatives and the need to maintain the speed and efficiency so essential to moving millions of cargo containers across the world's oceans and across its continents daily.

Security planners have their work cut out to collate all the measures in place into a cohesive matrix that provides a reliable shield to the stakeholders. This needs to be balanced with the equally paramount task of keeping the flow in maritime trade smooth and efficient. These can best be achieved by taking a rationale approach to threat perception and risk assessment, and by way of consultation with a broad segment of the very people the measures are supposed to serve and protect – the maritime stakeholders.

Nazery Khalid is Research Fellow at the Maritime Institute of Malaysia's Center for Economics Studies & Ocean Industries, and a presenter at international forums and conferences on a wide range of maritime issues. He holds a Bachelor of Arts degree in Business Administration from Ottawa University and an MBA from the International Islamic University, Malaysia.

Notes

(Endnotes)

[1] For example, Rohan Gunaratna, a counterterrorism analyst who enjoyed his 15-minutes of fame after 9-11 with such bold pronouncements, predicted that the "hardening of land and aviation targets will shift the threat to sea targets particularly to commercial maritime targets". See his statement during the third public hearing of the National Commission on Terrorist Attacks Upon the United States on 9 July 2003 titled "The Rise and Decline of Al-Qaeda" at www.9-11commission.gov (accessed on 31 August 2006).

[2] ISPS Code, the main initiative of all post 9/11 security measures, is a set of international standards introduced by the International Maritime Organization (IMO) for improving security on board vessels and in ports, in the wake of 9/11. It entered into force on 1 July 2004.

[3] CSI is a strategic program aimed at securing what is believed to be the most vulnerable link in the global supply chain – the ocean-going container.[1] It entails inspection of high-risk containers by US Customs officials at foreign ports before they are shipped into US shores.

[4] See Maritime Security – Enhancements made, but implementation and sustainability remain key challenges, Statement of Margaret T Wrightson, Director of Homeland Security and Justice Issues, United States Government Accountability Office (GAO) testimony before the Committee of Commerce, Science, and Transportation, US Senate, 17 May 2005.

[5] A preliminary estimate by the United States Coast Guard put the cost of implementing the IMO measures and the security provisions of the Maritime Transportation Security Act 2002 at a whopping US$1.5 billion for the first year and US$7.3 billion for the next decade. While these were just approximations of the precise measure of costs, the substantial sums involved in enhancing port security indicated the kind of huge bill associated with implementing new maritime security measures.

[6] For example, the Port of New Orleans started to impose security fees in 2004 in an attempt to recover the new expenses incurred due to heightened security mandates. The port estimated that it incurred about US$1.9 mil. in additional operating costs associated with the Maritime Transportation Security Act introduced in the US in 2002.

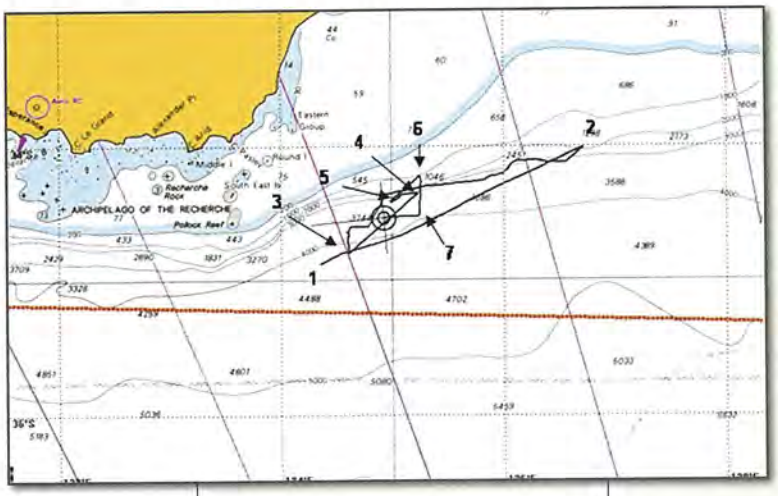
[7] Shippers in Hong Kong cried foul over new security charges introduced by terminal operators in Hong Kong and mainland Chinese ports such as Shekou, Chiwan and Yantian. Continental European ports impose such fees ranging from EUR2.00 to EUR9.00 per import and export container (excluding transshipment). See the Hapag-Lloyd Container Line website at www.hlcl.com for a fee listing of Terminal Security Fees it imposes in various ports around the world for an indication of the kind of security-related charges port users have had to bear.

[8] In Hong Kong, shipping lines cited a lack of transparency as among the factors affecting their reluctance of paying for extra security charges. They opined that if the charges were legitimate, the terminals should just include them in the container handling charges to be negotiated with them, and should be adjustable just like bunker surcharge. See Knowler, G., Kill Security Surcharge – Hong Kong Shippers, Cargonews Asia,. Vol. 29, No. 7, 25 April 2005. p.1.

[9] For example, see Murphy, M., "Maritime terrorism : The threat in context", Jane's Intelligence Review, 1 February 2006. In his article, he raises doubt whether terrorists have the logistical, tactical and operational nous to execute attacks involving large container ships, and underplays the impact that attacks on ports could inflict on a country's economy.

The Perfect Storm – *Handling Ships in Heavy Weather*

BY CAPTAIN MARTIN BROOKER, CSC, RAN



The handling of ships in all environmental conditions is just a part of our business as mariners. Our professional grounding comes not only from the training but the great knowledge contained in the Manuals of Navigation and Seamanship.

Back in May 2003 when *HMAS Manoora* was on a passage "south-about" to Western Australia in the Great Australian Bight, the guidance provided in the Manual of Seamanship on handling ships in heavy weather, came to the fore with gusto when the ship experienced conditions of Sea State 4-6 for three days somewhere south of Ceduna.

Manoora had departed Fleet Base East earlier in the week with Sea Training Group embarked, for a staff covered training in preparation for a Mission Readiness Evaluation, prior to deploying to the Middle East area of operations. The ship had enjoyed smooth conditions for four days, and with the majority of Sea Training Group (STG) activities completed the ship arrived off Adelaide's outer harbour to transfer the majority of the Training Group personnel ashore, and shape course for Western Australia, and slow time preparations for the 'final assessment' with Commodore Flotillas. As the ship departed the Adelaide area leaving Kangaroo Island to port, the majority of the ship's company took some time out in similarly smooth conditions to watch the sunset and to contemplate the work still required to pass the Mission Readiness Evaluation next week.

The low pressure system that was brewing 1000 miles south of Albany was not even a factor at this stage. However as the low moved north east it started to deepen and dominate the conditions in the Bight. By the following evening, with the ship south east of Esperance, the weather and seas deteriorated significantly with *Manoora* experiencing winds in excess of 35 knots and swells of 9-10 metres, occasionally to 12 metres.

The conditions were such that the ship was unable to maintain headway along the mean line of advance for long periods, as the ship's period of pitch started to increase significantly and the risk of significant damage forward also increased. The period between successive waves also started to increase. As per the Manual of Seamanship, when the period of wave crests approaches synchronisation with the period of pitch then the ship's motion will be violent. This was clearly evident in a LPA with the significantly flared bow structure under the forward flight deck.

Not surprisingly the Manual of Seamanship provides a couple of pages of advice on steaming head to sea, with the sea abeam and running before the sea. Steaming head to sea was proving problematic, and consideration of the pitching of the ship and resultant strains of hogging, sagging, and pounding were uppermost in my mind along with concern about the amount of water being taken on the forward flight deck.

For three days the ship was manoeuvred a number of times into and out of the weather and building seas to maintain position and avoid being forced into the upper latitudes of the Bight. As the ship ran down sea for extended periods the dangers of

The low pressure system that was brewing 1000 miles south of Albany was not even a factor at this stage.

Position	Time	Course	Speed	Sea State
1	17 1500H May 03	065	10	6
2	18 0548H May 03	250	12	5
3	19 0519H May 03	050	8	6
4	19 0945H May 03	250	2	6
5	19 1353H May 03	020	6	6
6	19 1535H May 03	190	5	5
7	19 1846H May 03	260	7	4

Despite the conditions the ship's company and routine remained focussed on the planned workup activities.

broaching-to or being pooped were ever-present. Consideration of the ship's speed against the speed of the waves was a key determinant and again the Manual provided sage advice on the considerations at this time -the key risk reduction was to keep the ship well below the wave speed backed up with constant supervision of the steering by the Officer of the Watch, and a reduction of the length of tricks at the wheel.

Turning in heavy seas provided the biggest some of the bigger risks and challenges. The Manual states that 'good judgement is required to select the most suitable moment to start the turn.' I would liken it to trying to do a 'U – Turn' across three lanes of heavy traffic where picking your moment is the difference between success and catastrophe. As we chose our wave, the technique outlined in the Manual again proved spot on - the navigator and I would pick the wave and then use short bursts of power and full rudder to get the ship going in the right direction. With the significant paddle wheel effect achieved in a LPA using the inboard engine it would not take long before we were turning, and could then apply power half way through to complete the turn and then settle down; either beating into the sea at slow speed or heading down sea at a speed far less than that of the prevailing seas.

The representation of *Manoora*'s navigation track 17 – 19 May 2003 and the record of conditions below highlights some of the conditions faced. It should be noted that the red line was the planned track!

Despite the conditions the ship's company and routine remained focussed on the planned workup activities. As you would expect the ship's company continued to work hard in spite of the arduous conditions to prepare for the forthcoming Mission Readiness Evaluation and

The Perfect Storm
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were rewarded for their efforts with COMFLOT assessing *Manoora* as 'Mission Ready'.

Looking back at that weekend in the Bight, there are couple of things that stand out from the experience. Firstly, no matter what the conditions faced in the maritime environment there are not really any new lessons. The training and the manuals of our profession provide a very, very solid foundation for dealing with the myriad of situations that we might face at sea. Back that up with the experience one develops as whether you are an officer of the watch under training, on through to command, then there is not too much that would not be within our capacity to deal with.

Secondly, while Command has the ultimate responsibility for the safety and ship handling it absolutely takes a team effort in dealing with the severe conditions sometime presented to us at sea. The team effort on the bridge, the navigator's deep specialist advice, the high level of machinery availability and the ability of the Ship's Company to get on with the job at hand in keeping it all going – despite the conditions – is something special and not to be taken lightly.

HMAS KANIMBLA makes her approach to HMAS SUCCESS, while HMAS SUCCESS conducts a fuel transfer with HMAS NEWCASTLE on 13 December 2006

A History of the Naval Intelligence Reserve

BY LIEUTENANT COMMANDER TIM COYLE

The Australian Naval Intelligence Organisation (NIO) began during World War 1 as part of the British Admiralty intelligence system responsible for reporting on maritime infrastructure and movements on the Australia Station. During the inter-war period (1919 – 1939) it forged its own characteristics to serve both the Royal Australian Navy (RAN) and the wider allied intelligence effort in the Pacific war. The role of naval reserve officers in NID began with the outbreak of World War II, which, until relatively recently, was the only period in which reserve personnel undertook active operational intelligence roles. A 40 year period elapsed between the demobilisation of an operational naval intelligence reserve and its re-invigoration in the 1990s.

This article reviews the early history of the NID, its development into a major staff organisation during World War II, through its long dormant period as an untapped resource, to the current environment of integration into operational intelligence organisations both ashore and at sea.

The Early Days of the RAN NID

Two seconded British Royal marine officers served as RAN Directors of Naval Intelligence (DNI) between 1911 and 1915. The main focus of DNI in 1915 was the provision of intelligence support to convoys carrying the First AIF to the Middle East. The DNI position was re-established in January 1922 with the appointment of Lieutenant Colonel F. H. Griffiths, Royal Marines, who, in turn, recruited a civilian navy office accounts clerk and former AIF officer, Walter Brooksbank, as his assistant. The new RAN Naval Intelligence Division (NID) was directed to advise the British

A 40 year period elapsed between the demobilisation of an operational naval intelligence reserve and its re-invigoration in the 1990s.

Admiralty, and regional RAN authorities and commands, of intelligence relating to Australia and territories in the South-West Pacific via Monthly Intelligence Bulletins. A chain of selected responsible citizens, designated as Special Reporting Officers, covering 60 coastal areas, was established in the early 1920s. These individuals were requested to provide maritime infrastructure information on their areas of interest to the RAN. Brooksbank oversaw the distillation of the information into a publication identifying coastal vulnerabilities in the event of an invasion. This system developed into a naval coastwatching organisation with the issuing of a 'Naval Coastwatching Guide', which instructed observers how to identify suspicious vessels and the procedure for passing information to naval authorities. To assist this communication, special telegraph priorities were arranged with the Postmaster General's Department.[1]

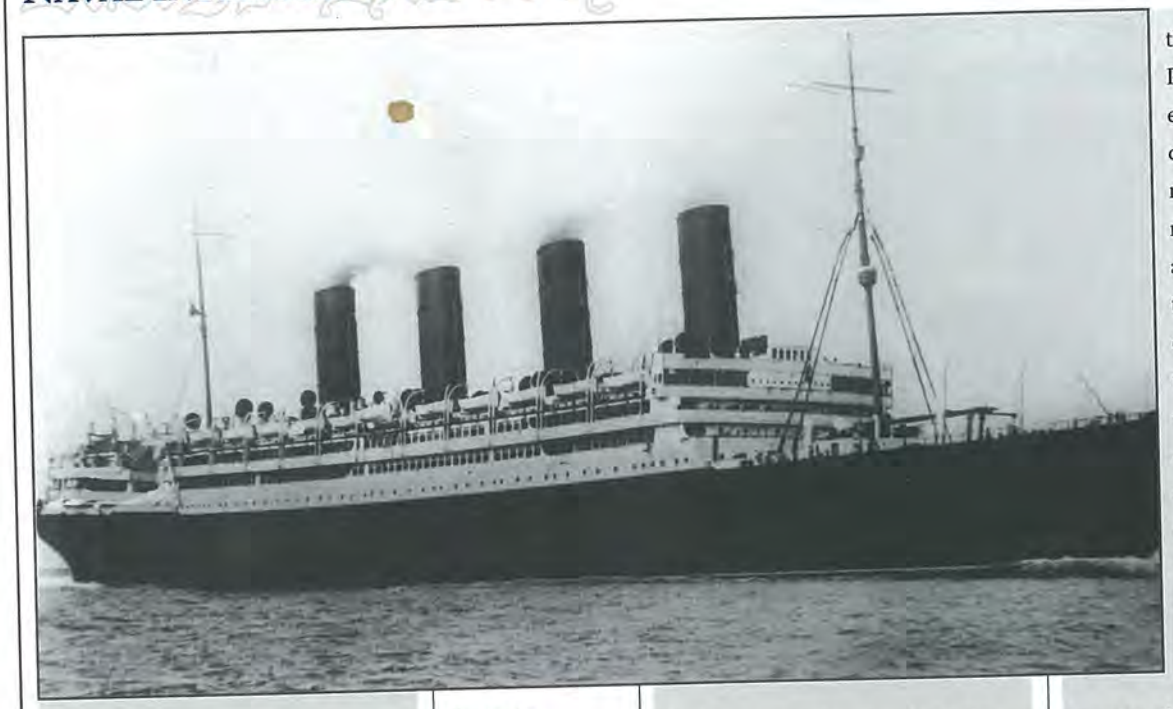
Ports intelligence collection was carried out by the Squadron Intelligence Officer who was embarked in the RAN flagship. This officer carried out sometimes exhaustive expeditions around a port and its environs during ship visits. A DNI 'contact list', which detailed shipping industry entities and personalities, and a 'Quarterly Plot', based on merchant ships' reported noon positions on selected dates were maintained. The latter was shared with other British intelligence centres, located at the various Royal Navy fleet headquarters throughout the Empire, and provided a form of traffic analysis of ships' routings and sailing frequencies. These formed the basis of planning for wartime exigencies for re-routing, convoy formations and measures to counter threats from surface raiders and submarines.

Griffiths realised that intelligence on British South-West Pacific territories was limited. Accordingly, he tasked Brooksbank to join the cruiser *HMAS Adelaide* in June 1923 for a five week cruise during which he and a RAAF officer, Flying Officer E. A. Mustard, photographed and recorded nine harbours and anchorages.[2] Over the ensuing several years, Brooksbank produced intelligence handbooks on Papua and New Guinea, the Solomon Islands, the New Hebridies and New Caledonia. These publications proved useful to the United States Navy at the outbreak of the Pacific war.[3]

On Griffith's return to the United Kingdom in March 1923, the Assistant Chief of Naval Staff (ACNS) assumed the DNI's responsibilities, which were to be shared with that officer's other duties of plans and operations. Intelligence therefore lost its separate status within Navy Office, and this situation continued until the DNI was re-established in its own right by the appointment of Lieutenant Commander R. B. M. Long in August 1939.[4]

During the long gestation of NID the number of staff did not exceed four persons at any one time. There was no 'surge' capability through reserve augmentation – this did not occur until the outbreak of the war in September 1939 when NID sought to increase its staff. Despite qualified shipping industry employees seeking to volunteer for intelligence-related service, Navy Office was reluctant

A History of the Naval Intelligence Reserve



Aquitania

to admit numbers of non-seagoing personnel.[5]

Until well into the latter half of the 20th century, the naval reserve was composed of three lists: the RAN Emergency Reserve (RANEM), RAN Reserve (Seagoing), and the RAN Volunteer Reserve (RANVR). The RANEM was composed of former permanent navy officers, the RANR (S) was comprised largely of merchant navy officers who could be mobilised for sea service, and the RANVR was made up of 'amateur' officers and ratings, who were normally recruited from individuals with 'an interest in the sea,' such as yachtsmen.

So that there was no risk of confusing a permanent officer from a member of either of the two reserves, the latter wore different patterns of distinguishing lace on their uniform jackets. RANR officers wore stripes fashioned as intertwined waved gold lace whereas the RANVR wore waved lace (referred to colloquially as the 'wavy navy'). Prior to World War II the RANVR was regarded disparagingly by permanent navy officers because of the reserves' lack of formal naval qualifications. However, officers and ratings joining the RAN during World War II were mainly entered into the RANVR (unless merchant marine qualified). The only exception was cadet midshipmen who were selected for naval college training to ensure the future RAN permanent office cadre.

So that there was no risk of confusing a permanent officer from a member of either of the two reserves, the latter wore different patterns of distinguishing lace on their uniform jackets.

In the interwar period the few naval officers engaged in intelligence duties in the Royal Navy (RN) were members of the Paymaster branch, who wore white 'distinguishing' cloth between the uniform gold lace. Only one RAN Paymaster, Lieutenant E. A. Nave, served in intelligence appointments before the war; however, when recruiting began in 1940, the Paymaster branch became a 'catch-all' for RANVR officers entered for wartime service in intelligence and other specialist miscellaneous duties.[6]

The RANVR Special Branch

The Naval Board agreed in principle to follow a 1941 British Admiralty move to create a Special Branch (Sp.) of the RNVR, into which officers selected for miscellaneous duties were to be listed; however, it was not until 1 January 1943 that the RANVR Sp. branch was promulgated. The delay was due to lengthy consideration of the types of officers to be transferred to the new branch. RANVR Paymaster branch officers engaged in intelligence, coding and cyphering, mercantile movements, railway and sea transport, and officers entered into the RANVR via a staff course were transferred to the Sp. branch, as were officers engaged in controlled mining, radio direction finding and degaussing operations. Sp. branch officers appointed for intelligence duties served on liaison staffs for combined defence and operational intelligence centres, special intelligence duties, and as assistants to Staff Officers (Intelligence). Sp. branch officers changed their white Paymaster distinguishing cloth for emerald green on their uniform jackets.[7]

RANVR officers entered for the duration of the war were generally referred to as 'temporary' officers' and a survey of the 1945 Navy List intelligence appointments revealed that Sp. officers did not enjoy promotion to higher ranks. Reference to Appendix 1 reveals the highest rank reached by Sp. officers appointed for intelligence duties, that of lieutenant commander, was achieved by only one officer, while a further three were acting in that rank.[8] Despite the DNI's standing offer of a commission, Walter Brooksbank, by far the most experienced naval intelligence officer, having served as such since 1922, preferred to remain a civilian – his position was 'civil assistant' to DNI. His reason for this was his belief that he could act more efficiently as a 'neutral presence' between the DNI and the newly appointed Sp. temporary officers, which Brooksbank observed were 'rank shy' and, because of their general lack of naval experience, probably

felt intimidated by their permanent navy colleagues at Navy Office. As Sp. officers gained experience in operational postings, their confidence and expertise grew to the point where they largely carried the NID wartime effort, particularly through the work of the coastwatchers in the Pacific Islands.

NID did not settle into a wartime rhythm until late 1943, according to Brooksbank.[9] This was because the initial applications from civilians to join NID were processed slowly and this tardiness resulted in a shortage of personnel when Japan entered the war. The turmoil of establishing new operational intelligence organisations in association with the other services and the United States forces, required considerable lead times to achieve operating efficiency and experience.

Awards to NID members for wartime service included three Orders of the British Empire, two Members of the British Empire and 11 Distinguished Service Crosses. The closeness with which NID worked with US forces was demonstrated by the awards of six Legions of Merit, three Silver Stars and four Distinguished Service Crosses.[10] A total of 592 officers were serving in the Sp. branch at the conclusion of World War II.[11]

Wartime Naval Intelligence Organisation

The Review of Naval War Effort and Activities was issued at six-monthly intervals throughout World War II, with one chapter devoted to the NIO. The October 1945 review summarised the composition of the NIO at the conclusion of the war. The review identified the NIO as a link in the Admiralty World-Wide Intelligence Scheme and was responsible for collection and distribution of naval intelligence for the Australia Station and island territories to Australia's north. Staff Officers (Intelligence)

LCDR Eric Feldt, RANEM

Contemporary Navy Lists indicated the growth of RAN intelligence functions during World War II and its aftermath.

were located in each of the seven state-based Intelligence Areas, a Brisbane-based Supervising Intelligence Officer was responsible for the islands to the north-east, and liaison officers were posted to seven island locations.[12]

The best-known aspect of the wartime RAN NIO was the coastwatching organisation, which consisted of approximately 800 persons, comprising local officials and selected civilians, who reported maritime and air movements by telegram (in the case of Australian-based observers with access to telegraph facilities), or by 'teleradio' (provided by the RAN to isolated coastwatchers). Coastwatchers based in enemy-occupied territories, and whose sole duties were directed to reporting air and maritime movements, were commissioned into the RANVR Sp. branch to offer some level of international legal protection.[13] The coastwatching organisation was reinvigorated by DNI Long soon after his appointment when, believing that Japan would soon enter the war, foresaw a need for a surveillance capability in New Guinea and the Solomon Islands. The limited capability which then existed was confined to selected government officials, plantation managers and other expatriate individuals. Long appointed LCDR E. A. Feldt RANEM, an official in the New Guinea administration, as Staff Officer (Intelligence) Port Moresby and directed him to facilitate the distribution of teleradios to coastwatchers positioned in strategic locations.[14]

The NIO supported the US Navy South-West Pacific Area (US Seventh Fleet), the British Pacific Fleet (from early 1945), and Australian and allied army and air force organisations. Tri-service allied organisations in which the NIO participated included the Combined Operational Intelligence Centre (COIC), Allied Geographical Bureau (AGB), the Allied Intelligence Bureau (AIB), and the Allied Translation and Interpreting Section (ATIS), which formed part of the General Headquarters, South-West Pacific Area (GHQ SWPA).[15]

Contemporary Navy Lists indicated the growth of RAN intelligence functions during World War II and its aftermath. The Navy List of October 1940 showed a total of 20 officers posted for intelligence duties at RAN shore establishments – there was no intelligence staff at Navy Office. By January 1942 there were 33 RANVR Paymaster officers appointed for coding and cyphering duties at Navy Office, and in the April list a naval intelligence staff under the DNI (Acting Commander R. B. M. Long RAN) was listed for the first time. Long's staff comprised two lieutenant commanders and 16 Paymaster lieutenants and sub-lieutenants. The NID reached its full wartime complement in the January 1945 List, which comprised approximately 110 Sp. branch intelligence officers. The GHQ SWPA, Brisbane, employed Sp. officers in the AGB, AIB, ATIS, and COIC organisations, and in radar intelligence and communications. Details of NID officers' appointments appear at Appendix 1.

The AGB, set up in June 1942 as a tri-service organisation, compiled geographical handbooks which contained information ranging from beach intelligence to tropical diseases, poisonous reptiles and plants – anything which might have been of interest to commanders in the field. The AGB was essentially the wartime outgrowth of the geographical intelligence handbooks which Brooksbank had produced in the interwar period. Information

A History of the Naval Intelligence Reserve

HMAS Adelaide

was gleaned from geographical, scientific and human intelligence sources.[16] The AIB, established July 1942, directed and coordinated intelligence collection in enemy territory and planned sabotage and other special operations.

The COIC was set up in November 1940 to pool the three Australian services' operational intelligence received through their respective intelligence organisations. Operational intelligence was defined as 'intelligence directly relating to the enemy or potential enemy which may influence specific operations in the Pacific and Indian Oceans as they affect the Australia Station.' The COIC was situated adjacent to the Central War Room, analysed operational intelligence received from collection units and reported its assessments to the war staff via daily and weekly reports. The first COIC 'Weekly Summary of Events and Action Taken' was issued on 1 February 1941 and intelligence reports under the title of 'Daily Appreciation of Japanese Southward Moves' began around the same time.[17] Postings of NID officers to outstations began in April 1941 when Lieutenant Commander E. A. Feldt was appointed as Supervisory Intelligence Officer at Townsville, and Lieutenant Commander J. M. Luke was also posted there for COIC duties, and then went to Port Moresby to form a COIC in September. In May Paymaster Lieutenant G. J. Brooksbank RANVR (Walter Brooksbanks' brother) was sent to Darwin to establish a COIC presence and Paymaster Lieutenant J. Ryan was posted to Fremantle.

The RAN only listed two officers as Japanese linguists – one of which was Commander Eric Nave, an Australian serving with the RN.

From early 1941 until July 1943 COIC carried out its business in a building in the Victoria Barracks complex, isolated from other departments behind a locked door. A hatchway enabled signals to be passed in and out and the DNI had discrete access to the COIC from his office.[18] In May 1942, the Supreme Commander, General Douglas McArthur, established GHQ SWPA, which absorbed the COIC. With the influx of US personnel the COIC ceased to be an entirely Australian organization, although remote COICs at Fremantle, Townsville and Darwin remained Australian. COIC moved to Brisbane in July 1943 as part of the GHQ relocation to that city. By December 1942, the COIC Port Moresby complement included five naval officers under Lieutenant Commander Luke.[19]

COIC Port Moresby was absorbed by GHQ SWPA in March 1943 as an 'advanced echelon' to act as an agency for the collection and distribution of operational intelligence in the New Guinea area. As the allies advanced northwards, COIC moved to Hollandia in Dutch New Guinea, thence to Tacloban and Tolosa in the Philippines, and finally to Manila in April 1945. On 23 August 1945 COIC was closed and the Australian personnel repatriated to Australia. By the time of its closure the COIC was a major combined operational intelligence centre and included only a handful of NID personnel. However NID could point out with some pride that their personnel had manned the COIC under its various guises, continuously since 1940.

The ATIS was formed in September 1942 by a GHQ directive. In its developed form it consisted of six sections: the translation section which translated Japanese documents, the examinations section, which was concerned with the collation and editing of enemy interrogation reports and the handling of prisoners of war, the Philippine Islands Research Section, and supporting information, production, training and records sections. The ATIS employed hundreds of personnel in its final form; however, the Australian component largely comprised support elements because of the lack of linguists in the Australian forces.[20] In its final year of operations, ATIS numbered nine Australian naval officers on staff six of whom were from the Sp. branch.

The RAN only listed two officers as Japanese linguists – one of which was Commander Eric Nave, an Australian serving with the RN. Nave applied for Japanese language training while a RAN Paymaster and, after qualifying as a linguist in 1923, was seconded to the staff of the RN Commander-in-Chief China Station to undertake translation and examination of intercepted Japanese naval communications for onward transmission to London. The