

A black and white photograph of a submarine on the water. The submarine is dark and has a white flag with a blue star and a Union Jack on its mast. Two crew members in white uniforms are standing on the deck. In the background, the Sydney city skyline is visible, including the Sydney Tower. The title 'headmark' is written in large, red, stylized letters across the top of the image.

ISSUE 135 headmark

MARCH 2010

*Australia's Need for
Nuclear Powered
Submarines*

*New Generation Navy -
Navy's Wind of Change*

*Seeking Sydney a major
life mission: Commodore
Bob Trotter & Dr Mike
McCarthy - Interviewed*

*Force 2030: Recruitment
is Not the Problem*

*Braving the battle, winning
the war : Fighting piracy in
the Gulf of Aden*

*"Will and Vision" - some
would see Australia as having
strategic vulnerability*

*The Lessons Learnt from
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Letter to the Editor

Dear Editor,

May I congratulate the Editorial Board on the last couple of Headmark editions. A few years ago I was thinking of giving up my ANI membership because the journal articles appeared largely to be essays for university degrees, with authors using hi falutin terms for concepts that have been around for years! However, recent articles are more to the point of what I believe the ANI is all about.

I am particularly pleased to see contributions from relatively junior people. Before the ANI was established, the only way an officer (or senior sailor) could air an idea was to send a letter (through his captain) to the Naval Board. On a couple of occasions my captain refrained from forwarding on my ideas, telling me to leave thinking to the admirals!

`Don't call me Sir' was particularly thought provoking. Thank heavens that some of the routines which were relevant to the days of sail have been dropped without losing the Navy's standards and traditions (which are different from `customs'). I ask the question of whether we still need to use the salute as an informal greeting or acknowledgement (while keeping it for parades and formal occasions).

I look forward to reading more ideas from serving personnel and learning from interesting articles.

Yours aye

Viv Littlewood

Commander RAN Retd

Letters submitted by email are preferable to those written in cursive pen.

The Editor can be reached at talewis@bigpond.com.au

Errata

Issue 133, Sep 2009:

P. 45 final sentence on p 44: "complimentary" should read "complementary".

The picture of the Dickin medal in the article on HMS Ametyst should in fact be labelled: "Naval General Service Medal, with bar Yangtze, awarded to the respective RN ships' companies and to the RAF Sunderland crew."

Front page:

HMAS Waller enters Sydney Harbour for Exercise RIMPAC preparations at Fleet Base East, prior to departing for Hawaii.

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Contents

<i>Australia's Need for Nuclear Powered Submarines</i>	4
<i>New Generation Navy - Navy's Wind of Change</i>	12
<i>The Relevance of Modern Naval Experience and Classical Maritime Strategic Thought in the 21st Century</i>	19
<i>Force 2030: Recruitment is Not the Problem</i>	22
<i>"Will and Vision" - some would see Australia as having strategic vulnerability</i>	25
<i>Cochrane's Dog, Individual Courage And Service Loyalty</i>	30
<i>Braving the battle, winning the war : Fighting piracy in the Gulf of Aden</i>	33
<i>HMAS Sydney & Ship's Company 1941</i>	38
<i>Northern Trident 09</i>	40
<i>The Lessons Learnt from Hydrogen Sulphide Incidents in the Royal Australian Navy</i>	45
<i>Seeking Sydney a major life mission: Commodore Bob Trotter and Dr Mike McCarthy - Interviewed</i>	48
<i>Around Australia in a Fairey Seaplane – the Adventures of Wing Commander Goble and Flight Lieutenant McIntyre on their Pioneering 1924 Flight</i>	59
<i>Book Reviews</i>	67
<i>Visions from the Vault</i>	71
<i>ANI On-line Guide</i>	72
<i>Style Notes for Headmark</i>	73
<i>ANI Membership Application Form</i>	75

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

Australia's Need for Nuclear Powered Submarines

BY GIRGIS

The May 2009 Defence White Paper announced that 12 future submarines would be acquired for the Australian Defence Force (ADF), in what is set to be the largest single defence project ever undertaken by Australia.¹ The Australian Government has placed great emphasis on our future submarine force and, although such emphasis is not out of place, the level of prescriptive detail on these submarines that is contained within the Defence White Paper contrasts markedly with the largely intangible and at times ethereal requirements for other capabilities.

It can be argued that this detailed public statement was done for political reasons which have more to do with the inputs of a few defence analysts and industry representatives, who have disproportional influence in the Prime Minister's office, than with the actual capability needs. Indeed, there seems to be a long-held misconception, held by politicians forming the current Government and a group of their senior advisors, that the Royal Australian Navy (RAN) has a historical dislike for its submariners and hence inherently fails to recognise the



strategic value of submarines.²

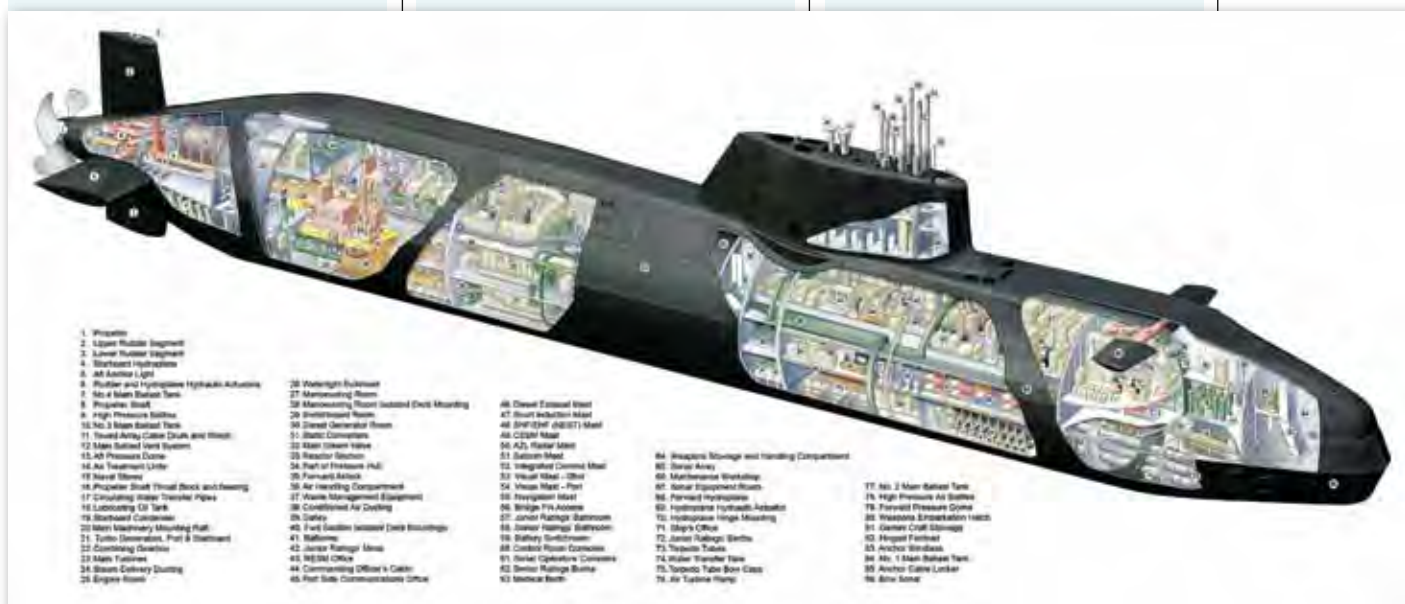
It follows that the assumed RAN bias can only be overcome by Government direction at the most senior levels. The whole process appears to have the cart before the horse, with Government setting the detailed requirements and effectively pre-empting 'First Pass' approval before the needs and requirement's phases has been completed within the Department of Defence.³

The strategic environment

Concurrently professional serving officers and civilian staff, employed by the Department of Defence, continue to assess our strategic needs and force structure requirements. That Australia needs to have strong underwater warfare capabilities, today and in the future, is beyond question. Submarine numbers in the Asia-Pacific region are increasing along with their technical sophistication.⁴

Astute-class (BAE Systems)

Cutaway of the new HMS Astute class - note several sonar arrays (Courtesy Thales)



The modernisation of the world's nuclear powered attack submarines (SSN) is of even more concern to Australia's defence planners. Today six nations deploy SSNs: the United States (US), Russia, France, the United Kingdom (UK), China and India, in addition, several other nations, including Pakistan and Brazil, have declared an interest in acquiring them. Nations which exclusively operate SSNs – the US, the UK and France – continue to demonstrate their advantages over conventional submarines - which are more correctly described as submersibles.

This sends a potent message to other nations that nuclear power is better, and that nations that acquire SSNs are members of a 'special club'.⁵

During the 1950s the US led the world on SSN development (*USS Thresher*), and they subsequently helped the UK develop their first SSN (*HMS Dreadnought*). Most people would agree that the US's new *Virginia* class SSNs coming off the production line are the most advanced large-size submarines in the world.⁶ The UK has since produced their own SSNs, with the latest *Astute* class SSN starting sea trials in November 2009.⁷

France, learning from the US and UK experiences and after delays due to priority being given to their ballistic missile submarines, eventually developed their own unique nuclear power plants for their SSNs. The future French SSN, the *Barracuda* is now under development and the first submarine should enter service around 2017.⁸

Not to be left behind in the Cold War arms race, the Soviet Union also opted for indigenous nuclear power plant development for its first SSN in 1959, NATO designation November class. Russian-designed SSNs kept pace with their US counterparts until the fall of the Soviet Union, but since



that time the Russians have not had the economic strength to maintain their technological edge. However, the Russians still have a submarine force to be reckoned with, the Akula II (Project 971) and Graney class (Project 885) SSNs are some of the best in the world, but Russian economic limitations have led to the drying-up of SSN research funding and the cancellation or delay of SSN production.⁹ Despite such setbacks, the Russians have provided valuable technical assistance to the Chinese and Indians navies which has helped those nations to develop their own indigenous nuclear power plants for their SSNs.

In the Asia-Pacific region the introduction of new advanced SSNs by China and India is changing the way we must plan for Australia's future defence. No longer can we rely upon US military primacy in the Pacific Ocean to guarantee sea control when we operate in the Indian and Pacific Oceans, as it has since the beginning of the Cold War when the US Navy effectively bottled-up the Russian Pacific Fleet in North Asian waters. The US Navy now has more than enough to do to

protect its own national interests in the Asia-Pacific and hence the possibility of Russian, Chinese or Indian SSN deployments in Australia's area of interest has increased from a rare and unlikely occurrence to a likely prospect.

As indigenous Indian and Chinese SSN production increases all ADF operations at a distance from Australia will have to take the possibility of other nation's SSNs into account. The Chinese have taken several decades to absorb and improve upon SSN technologies, but they have now turned the corner and are able to produce nuclear powered attack submarines that are at least comparable with those of other powers.

The latest Chinese SSN, the Type 093 Shang class, was officially revealed early in 2009.¹⁰ The Chinese People's Liberation Army-Navy (PLAN), with a fleet of such submarines would have the potential to deploy a SSN from bases around the South China Sea into the South-West Pacific and Indian Oceans for extended periods, and not necessarily for purely warfighting purposes – such a presence would be a valuable political tool that, if declared,

Astute class submarines being built at BAE Systems' Barrow-in-Furness shipyard. (BAE Systems)

Australia's Need for Nuclear Powered Submarines

could put extreme diplomatic pressure upon Australian political leaders and the leadership of less stable nations in our region.¹¹

In the meantime, India's long pursuit of nuclear powered attack submarine technology is finally coming to fruition. The Indian Navy is now leasing the Russian Akula II class submarine, to be commissioned as *INS Chakra*, for a period of ten years.¹² Such agreements are possible because nuclear submarine sales are permitted under the 1968 Non-Proliferation Treaty, which treats nuclear propulsion as an acceptable nuclear activity. The development of an Indian indigenous nuclear powered attack submarine is now also moving rapidly ahead following the launch of the Advanced Technology Vessel (ATV), *INS Arihant*.¹³

Australian submarine requirements

According to the Defence White Paper 2009, the 'future submarines will have greater range, longer endurance on patrol, and expanded capabilities compared with the current Collins class submarines'.¹⁴ In addition, a doubling of the existing submarine fleet from six to 12 is required 'in order to sustain a force at sea large enough in a crisis or conflict to be able to defend our approaches (including at a considerable distance from Australia, if necessary), protect and support other ADF assets, and undertake certain strategic missions where the stealth and other operating characteristics of highly-capable advanced submarines would be crucial'.¹⁵

For most international defence analysts, an unbiased assessment of the Australian submarine operational requirements, reflecting Australia's strategic geography and the great distances involved, would suggest that the future submarine should ideally

be a nuclear powered attack submarine, i.e. a SSN.¹⁶

The need for SSNs is even clearer if we consider the need for Australian submarines to have long endurance, great stealth and large payloads capable of projecting power and defending ADF assets at a considerable distance from Australia – in environments where enemy SSNs will be operating. It is thus somewhat surprising that the Defence White Paper 2009 states that the 'Government has ruled out nuclear propulsion for these submarines'. Unfortunately there has been very little public debate on this issue, and the statement seems to be more a declaration of belief by Government, than a rational well thought out policy.¹⁷

The advantages of nuclear powered submarines are clear – they are even taught to recruits in the US Navy.¹⁸ Nuclear boats are truly independent of the surface. They generate their own fresh water and oxygen and never need to surface to run diesels to recharge their batteries. SSNs have an indiscretion rate of zero, meaning they can stay submerged in an area of operations, essentially remaining invisible to an enemy, for periods measured in months rather than hours.¹⁹ The nuclear reactor is capable of generating great amounts of power compared with a conventional diesel-electric power plant, and hence SSNs can operate at high speeds for long periods of time – they can transit across the Pacific and Indian Oceans



The USS Skipjack was the first nuclear-powered submarine built with the Albacore hull design (USN photo)

faster than any conventionally powered ship or submarine. This means SSNs can operate with, or in advance of, maritime task forces which include aircraft carriers, amphibious ships and other surface vessels. Modern nuclear power plants have the ability to provide much more energy than can be used by any combination submarine domestic services (hotel load), combat systems, and propulsion systems; in addition they do not need to refuel for at least 20 years.

A SSN, in addition to its inherent stealth characteristics, has the added advantage of high speed and unlimited endurance. It is a hunter-killer of conventional submarines. A conventional submarine, even with the most advanced AIP system, does not have adequate speed and endurance to move from home port to distant operational areas quickly, and remains especially vulnerable during any long transit. The development of conventional submarines has reached a technological dead end.

The decreasing number of nations that continue to design and build large conventional submarines has been noted by the Submarine Institute of Australia (SIA), and Australia is now one of the few nations that are still seriously considering building large

conventional submarines.²⁰ But the facts should speak for themselves, large conventional submarines have been superseded by their nuclear powered colleagues, and in matters of defence being second best is just not good enough.

What must Australia's future submarines do?

Even though large conventional submarines can undertake some sea control and power projection tasks, only modern nuclear powered submarines are capable of conducting maritime operations in advance of a joint expeditionary force.²¹ With a speed of around 30 knots SSNs are able to deploy at short notice well in advance of a joint expeditionary force travelling at around 20 knots. The SSN can transit underwater over great distances, without being detected, and can then conduct a range of tasks in the operational area as part of an advance force. Their primary role is to detect, deter and where necessary destroy enemy submarines in the planned area of operations.

The modern SSN is a manoeuvrable, stealthy and quiet adversary that can hunt down and kill enemy conventional submarines, however, in most circumstances the enemy knowing that a SSN is in the area will avoid contact and likely destruction.²² Thus a SSN acts as a submarine deterrent that can help to attain underwater sea control in the area of operation for the duration of that operation. While the most important role of the submarine is to seek out and destroy other submarines, they also have a well-proven capability to detect and attack enemy surface forces. But a submarine cannot achieve a strategic effect by itself; other elements of the ADF must be present to achieve sea control over the rest of the battlespace: in the air, on

the water, on the land, in space and within the electro-magnetic spectrum.

In addition to helping to ensure sea control, submarines need to prepare the battlespace for the arrival of the joint expeditionary force. Submarines, while continuing to seek out and destroy other submarines and to detect and attack surface forces, contribute to amphibious operations by undertaking intelligence, surveillance, and reconnaissance (ISR) tasks and land strike tasks. This typically would involve landing and retrieving Special Forces and other advance parties; deploying sea mines and unmanned underwater vehicles (UUVs); and even land strike.

The ability to approach close to oppositions forces and monitor their operations and movements whilst remaining undetected is a classic capability of the submarine. Using modern video technology or digital photography a submarine, able to approach a coastline in shallow water, can make a significant contribution to the intelligence collection effort prior to any subsequent land or maritime action. Land attack cruise missiles, such as the Tomahawk, provide submarines with a land strike capability. Such a weapon allows the submarine to influence the land battle by posing a threat in the period prior



to hostilities and, after hostilities commence, the use of highly accurate and lethal warhead against important targets which may otherwise be relatively invulnerable.²³

If an enemy were to deploy one or two of their SSNs into our area of operations, our mission would be severely imperilled and the lives of many Australians endangered, unless we also had SSNs to counter them. To illustrate this point, you must have a Formula One racing car to compete in a Grand Prix race: a V8 Supercar just would not make the grade. We must have a Fifth Generation aircraft to fight for air control over other Fifth Generation aircraft: a Fourth Generation aircraft just will not do.

View of the main diving and control station onboard the Los Angeles class nuclear-powered fast attack submarine USS Hartford (USN photo)

Australia's Need for Nuclear Powered Submarines

Similarly only modern SSNs can hope to fight for sea control in the underwater domain against enemy SSNs: conventional submarines, whether large or small, are not capable of fighting and winning at sea against a technologically superior opponent. SSNs have superior speed, range, endurance, and sustainability.

Unfortunately this truism, although well understood by maritime nations across the globe, is not well understood in Australia.²⁴ The ADF's ability to attain sea control at a distance from Australia, when there is an enemy submarine threat, is predicated on the availability of SSNs. In the absence of Australian SSNs, the ADF would have to either rely upon the cooperation of SSNs belonging to an allied nation to help attain sea control, or lose the option of deploying to that area.

Modern maritime operations are predicated on the ability of a number of elements within a nation's armed forces working in a joint environment to achieve the military effects desired. The ADF, alone or in coalition, must work as a layered system of systems, or alternatively as a series of nodes within an integrated network. If an Australian submarine was to act in isolation within an area of operation it may itself be subjected to the anti-submarine warfare efforts of the enemy. In such circumstances the Australian submarine could be deterred from performing its tasks or even destroyed.

Sea control over the complete battlespace is essential for maritime power projection and sea control must be achieved before the ADF can influence events ashore.

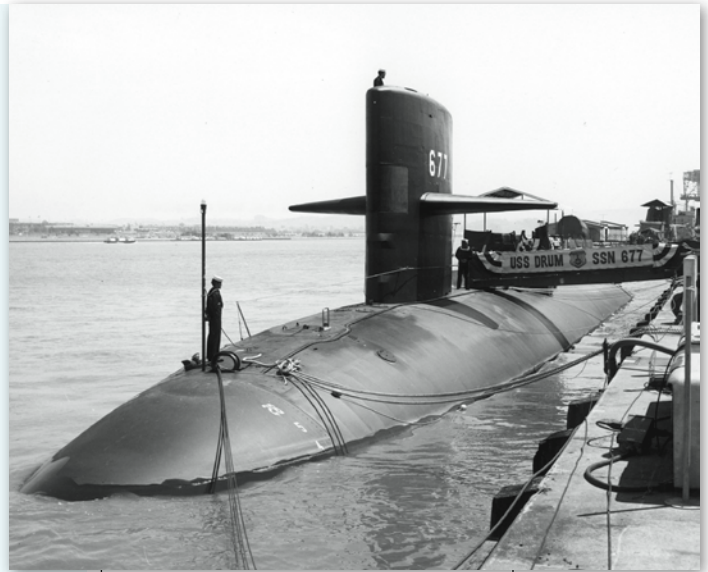
An Australian nuclear industry

If the RAN requires SSNs because large conventional submarines are second rate when compared to SSNs, why don't we want to purchase them? The SIA

claim that the introduction of SSNs into the ADF order of battle was 'not a practical proposition' has now become somewhat of a clarion call for those who reject SSNs.²⁵ These claims do not hold-up under close examination.

The proposed timescales for a future submarine project are predicated on an Australian design of a large conventional submarine based upon the Collins class that does not apply to a cooperative Australian build within an existing SSN construction program. For example, if Australia wanted two new Astute class SSNs we could readily achieve our desired timescales.²⁶ We could even start training Australian submariners, alongside our Royal Navy (RN) colleagues in the UK, next year. The point is that once the decision is made and the funding allocated, the long term investment into Australia's nuclear energy future would commence. Given the current status of the Australian submarine force and the current low threat environment, we could even make significant savings by reducing the number of Collins submarines in operational readiness and reallocate such monies to the nuclear submarine program.

The SIA statement that 'Australia lacks the critical regulatory regimes, industry capacity, nuclear-technology infrastructure and educational institutions to prepare and sustain appropriately qualified personnel' is correct, but it does not



USS Drum, a Sturgeon class nuclear boat of the USN (USN photo)



The USS Nautilus, pictured, represented a watershed for the U.S. Navy's submarine program. This was the world's first nuclear-powered submarine (USN photo)



The RN submarine Revenge commissions in 1969. Nuclear powered and armed, she was one of six deterrent boats built to threaten nuclear annihilation if the USSR attacked (RN photograph)

follow that a decision to employ SSNs can only follow Australia's decision to adopt nuclear power for electricity generation. Rather the requirement for Australian SSNs will help generate the necessary nuclear infrastructure. More importantly we cannot dismiss the nuclear option because of an assumption that we don't have a fully-fledged nuclear industry. Australia needs to develop its nuclear industry and help it to grow over time: in such an approach all we really need is a conception.

Practically, Australia will not be able to design and build a nuclear submarine for many years, but we can purchase an *Astute* SSN. We will need to operate and maintain the submarine, and to do so will require some training in nuclear reactors. Actually most of the maintenance activities on a modern nuclear submarine relate to non-nuclear systems and machinery. There is no difference between changing a valve on a cooling water system on a conventional or nuclear submarine: each situation is critical to safety. As modern SSNs like the *Astute* class do not need to be refuelled at all, and as SSNs are globally deployed and can transit long distances in a matter of days, it may even be possible to conduct most depot-level maintenance on the nuclear reactor in the country of origin.

The SIA is right in highlighting the significant political and public concerns that would need to be overcome before implementing such a project. This, in truth, is the only reason for why Australia does not have SSNs. Despite the SIA's support for nuclear submarines and a nuclear industry in 2005, which made many statements that are echoed in this article, the push for technologically superior submarines has faded into a fall-back decision to accept second best as good enough.²⁷ Why? An *Australian Financial Review* article suggests that

political interference was the cause of the SIA about face. The submariners were warned by Lieutenant-General David Hurley, at that time Chief of the Defence Capability Development Group, that 'pushing nuclear power could risk any replacement for Australia's conventional powered Collins-class submarines'.²⁸ So the real debate on Australia's future submarine requirement was stifled within Defence for reasons other than capability requirements or technology limitations.

It is apparent that many of the current Australian leaders see that developing a nuclear power industry is politically untenable. This may be nothing more than an intergenerational problem, as the children of the 1950's and 60's have tended to reject nuclear issues 'on principle' without worrying too much about the contradiction that results from Australia selling uranium to other nations or from Australians relying upon the United State's nuclear umbrella to help deter other nuclear powers from harming us.²⁹

Importantly younger Australians and future leaders may not be able to reject the nuclear power option 'on principle' if their very way of life is threatened by economic and social collapse and climate change. Of course Australia cannot ask its navy to operate SSNs if their use is objectionable to most of our citizens, but surely the Department of Defence and in particular the RAN are the most important organisations capable of informing the Australian public on such a critical issue. But alas the silence is deafening and the debate is lost because of Defence's reluctance to state the real issues in public.

Nuclear propulsion plants are not nuclear weapons - they are a relatively cheap, safe and environmentally friendly means of generating power. In future Australians will need to decide whether it is better to develop

a safe nuclear industry or to reduce their dependence upon generated power to pre-industrial revolution levels. It is not conceivable that any modern society could actually return to such an agricultural utopia without suffering a massive social upheaval and a significant reduction in population. Australian society cannot reduce the effects of climate change while relying upon a dwindling supply of fossil fuels to supply our energy needs, and our future energy needs can only be met by a nuclear power industry. A future Australia must depend upon nuclear power generation combined with other environmentally friendly carbon-free forms of power generation.

If we consider the six nations that operate and maintain nuclear submarines, China, France, India, Russia, the UK, and the US, for each the defence requirement for nuclear energy has helped develop the infrastructure for a national nuclear industry. Without the defence assistance it is unlikely that the infrastructure for an Australian nuclear industry would be economically feasible in the short term. It needs to be given a kick start in order to develop: without such a kick-start we may never be able to develop a nuclear industry capable of meeting Australia's long-term energy needs.³⁰ If the RAN operated SSNs it would help build the infrastructure for an Australian nuclear industry.

Is it possible to introduce SSNs into the RAN before 2022? Yes, if we start soon. It took almost twenty years to build up the Australian submarine force with the introduction of the Oberon class submarines and it would take about the same time to introduce SSNs. Let us say we wanted to purchase two SSNs for the RAN under the existing British *Astute* build program. As with the Oberons, Australian submariners could become familiar with *Astutes* through training and operational exchange programs. The design and build of the *Astutes* has already been done in the UK. The RN plans to use the *Astute* class SSNs for global operations and missions that are similar to the Australian one, and we could operate the Australian *Astutes* using the RN's logistic support arrangements.³¹

Many of the current Australian submarine facilities could be used or modified to help support the SSNs in country. Such close liaison with an allied nation is common for other high value defence assets owned and operated by the ADF, such as the Joint Strike Fighter.

Australia's future submarines need to be SSNs

Estimates vary on how much it will cost to replace the existing six Collins class submarines with 12 ASC designed modern large conventional submarines but, by my calculations, they would cost about A\$25 billion

Australia's Need for Nuclear Powered Submarines

(2009 prices) to acquire and A\$80 billion (2009 prices) to operate and support over 20 years.³² Such figures demonstrate that large conventional submarines that are designed for long-range operations are expensive beasts. This magnitude of capital outlay obviously requires careful consideration if we were purchasing a world class submarine force, but it would be a dangerous waste of taxpayer's monies if we purchase submarines that would effectively be obsolete death-traps by 2020.

What are the alternatives if we do not purchase large conventional submarines to replace the Collins class? The requirement for sea control and power projection involves submarines operating in advance of, and in support of, an ADF joint expeditionary force. Such submarines need great endurance and reach; they need to move at 30 knots or more for days as they transit from one ocean to another underwater. They need to be stealthy, with a zero indiscretion rate, as they must be able to fight and destroy enemy nuclear submarines on at least equal terms. Only nuclear submarines, SSNs, can meet this requirement.

In the Australian context, a nuclear submarine is required to work with an ADF joint expeditionary force, as part of the ADF anti-submarine network, whenever such a force is deployed in a medium to high intensity environment. Two SSNs will be required to guarantee the availability of at least one SSN during any joint expeditionary force deployment.³³ Although the second SSN may require mandatory maintenance, recent naval experience in high intensity operations confirms that it is often possible to deploy all SSNs rapidly in crisis situations, through the use of flexible support arrangements. In most crisis situations, the future Australian submarine force would be capable of deploying both of

its SSNs in support of a high-intensity ADF operation.

But what will this cost us? In the past, nuclear powered submarines have been written-off from the choice of capabilities because of their inherent cost. Unfortunately such estimates have been biased and have represented the political will – not to have nuclear submarines – rather than accept the reality that a purpose built Australian class of 12 large conventional submarines would be much more expensive than procuring between two and four SSNs as part of an ally's existing submarine program.

Assuming we decide to purchase two SSNs from one of our allies, say from the British, and then we decide to use their depot level maintenance facilities for the pressurised nuclear reactor, the nuclear option is affordable. My estimate is that two SSNs will cost around A\$6 billion (2009) to acquire and a further A\$14 billion (2009) to support over 20 years.³⁴ The through life support costs would also be significantly less. Such figures, even if the exact costs may be argued and refined, reveal that Australia really can afford what it needs as far as a future submarine force is concerned.

Even though we know that the major powers in the Asia-Pacific region are already using or building nuclear powered submarines, are we really prepared to avoid any likely confrontation because we don't like nuclear power? Australia and Canada together have the largest amount of unprocessed uranium supplies in the world. Can we expect other resource-starved nations to sit back and watch us rest upon this resource mountain without a stick to ward off those who desperately need to access our uranium reserves? 🚫

Girgis is a pseudonym.

(Endnotes)

1. Department of Defence, *Defending Australia in the Asia Pacific Century: Force 2030*, Defence Publishing Service (DPS), Canberra, 2009, pp. 70-1; and Australian Labour Party: Future submarine project study - Media Statement 6 August 2009 <www.alp.org.au/media/0809/msdefdipp060.php> (18 December 2009).
2. Such a line underpins the speech by Greg Combet, (Minister of Defence Personnel, Materiel and Science), 'From Collins to Force 2030: The Challenge of the Future Submarine', Speech to the Sydney Institute, 4 November 2009 (readers are advised to be careful about inaccuracies in this speech - at times political myth over-rules historical fact); and Derek Woolner, *Getting in Early: Lessons of the Collins Submarine Program for Improved Oversight of Defence Procurement*, Research Paper 3 2001-02, Foreign Affairs, Defence and Trade Group, Parliamentary Library, 18 September 2001.
3. For background on the Defence capability process, as it is meant to apply, see Department of Defence, *Strategy Planning Framework Handbook*, DPS, Canberra, 2006, and Department of Defence, *Defence Capability Development Manual*, DPS, Canberra, 2006.
4. The build-up of submarines in the region is raised every year by *Jane's Fighting Ships* but also see Kelvin Fong, 'Asian Submarine Forces on the Rise', *Asian Defence Journal*, May 2009, pp. 23-7; and Matthew Franklin, 'PM flags major naval build-up', *The Australian*, 10 September 2008.
5. See Norman Polmar, 'Joining a Special Club', *Proceedings*, October 2009, pp. 88-9.
6. The first of class USS *Virginia* was commissioned in 2004 and a further 29 SSNs are planned, see *Virginia* class submarine <www.naval-technology.com/projects/nssn/> (18 December 2009).
7. *Astute* class submarine <www.royalnavy.mod.uk/operations-and-support/submarine-service/future-submarines/> (18 December 2009).
8. SSN *Barracuda* <www.naval-technology.com/projects/barracuda/> (18 December 2009).
9. Akula II class attack submarine <www.naval-technology.com/projects/akula/> and Graney class <www.globalsecurity.org/military/world/russia/885.htm> (18 December 2009).
10. Type 093 Shang class nuclear attack submarine <www.sinodefence.com/navy/sub/type093shang.asp> (18 December 2009).
11. For more information on China's recent submarine developments see AS Erickson, LJ Goldstein, WS Murray and AR Wilson, *China's Future Nuclear Submarine Force*, Naval Institute Press, Annapolis, 2007.
12. India's Nerpa submarine set for trials, <www.naval-technology.com/news/news69396.html> (18 December 2009).
13. Advanced Technology Vessel <www.globalsecurity.org/military/world/india/atv-specs.htm> (18 December 2009) and INS *Arihant* <timesofindia.indiatimes.com/india/INS-Arihant-to-take-long-time-to-become-operational-Experts/articleshow/4822610.cms> (18 December 2009).

14. Department of Defence, *Defending Australia in the Asia Pacific Century*, p. 70.

15. Department of Defence, *Defending Australia in the Asia Pacific Century*, p. 64.

16. For example Julian Kerr, 'Australia tests the water for its largest-ever defence procurement challenge', *Jane's Navy International* (Online Edition), (16 December 2009).

17. Every now and then an article breaks through the barrier of silence, see Geoffrey Barker, 'In defence of nuclear subs', *Australian Financial Review*, 17 August 2009, and Andrew Robertson, 'Nuclear powered submarines for Australia', *The Navy*, vol. 71, no. 3, pp. 23-6.

18. For basic advantages and disadvantages of nuclear powered submarines see <www.hps.org/publicinformation/ate/q5383.html> (18 December 2009).

19. Indiscretion rate an indication of the potential of a conventional submarine to be detected while on or near the sea surface, being the ratio of time recharging batteries to that discharging the batteries.

20. Peter Briggs, 'Achieving our strategic sting: Bringing on the next-generation submarines', *Defender*, vol. 24, no. 4, summer 2007/08, p. 12, 'If we now accept that no Western country now builds the long range conventionally powered submarines we need ...'

21. For definitions and background on sea control and power projection see Royal Australian Navy, *Australian Maritime Doctrine, RAN Doctrine 1*, DPS, Canberra, 2000.

22. During silent running, a conventional submarine is quieter than a nuclear one, however while it is kept in such a silent state the conventional submarine cannot perform its desired mission.

23. Royal Navy, Fleet Submarines (SSN), <www.royal-navy.mod.uk/server/show/nav.2441> (26 August 2009).

24. The non-nuclear lobby in Australia has not only stifled debate but has led to a certain nuclear-blindness in the community. I do not underestimate the difficulty in convincing the Australian people to acquire and operate nuclear submarines, however the point that I wish to make is that we should not expect that we can still do the same tasks effectively with conventional submarines.

25. Peter Briggs, 'Achieving our strategic sting: Bringing on the next-generation submarines', *Defender*, vol. 24, no. 4, summer 2007/08, p. 12.

26. It is assumed that provided they understand our requirement for nuclear SSNs, one of our close allies (especially the US, Britain or France) will assist with the introduction of nuclear powered submarines into the Australian Navy. In essence, following the *Dreadnought* class SSN example as a model. I have used the *Astute* class SSN in this article for clarification, although alternative SSN designs could also be selected.

27. SIA, 'Submission report on the development of the non-fossil fuel energy industry in Australia', 05/PROP/2040 of 26 July 2005.

28. F Brenchley, 'Warning on going down nuclear path', *Australian Financial Review*, 2

September 2005.

29. The *Year Book Australia 2008* confirms that 'Most of the energy produced in Australia in 2005-06 was exported (12,637 PJ), the bulk of which was black coal (6582 PJ) and uranium (4819 PJ)'. Apparently we accept the need for nuclear power provided it is offshore.

30. Energy conservation and renewable energy sources should be encouraged and used to the greatest possible extent, however such measures will never be able to replace our current reliance on carbon-based energy source. Only nuclear power can meet the future heavy industry energy requirements. There are numerous sites debating the need for nuclear power, for example see nuclearinfo.net <nuclearinfo.net>

Nuclearpower/AlternativeToNuclearPower> (26 August 2009).

31. Royal Navy, Future Submarines, <www.royal-navy.mod.uk/server/show/nav.2550> (26 August 2009).

32. All the figures supplied in this article are my own estimates, based on various sources and estimating techniques. Actual figures will vary depending upon each company's position in the market and the industrial climate. They are indicative measures subject to +/- 30 per cent variation. Also see estimates in S Costello & A Davies, *How to buy a submarine: Defining and building Australia's future fleet*, ASPI Strategic Insights no. 48, November 2009.

33. Due to the limited speed in transit and the need to snort, it takes three large conventional submarines to maintain the same presence in an area of operations as one SSN. For a simple cost comparison, we should be comparing 12 large conventional submarines with four SSNs.

34. These figures are but based upon the available figures for the British *Astute* and the French *Barracuda* class SSNs.

Precious Cargo: A helicopter delivers stores and mail to HMAS STUART on Christmas Day, while it is at sea, conducting Counter Piracy Operations in the Gulf of Aden.



New Generation Navy - Navy's Wind of Change

BY LIEUTENANT COMMANDER DESMOND WOODS

A WIND OF CHANGE IS BLOWING THROUGH THE NAVY AND ITS NAME IS NEW GENERATION NAVY.

NGN is a timely and vital response to a concatenation of problems Navy has been facing for more than a decade and which must be addressed successfully if we are to deliver the future capabilities that the nation requires. NGN is in many ways a re-statement and codification of many important cultural changes and sensible initiatives which Navy has been introducing over the last five years.

PEOPLE, PERFORMANCE AND PROFESSIONALISM

NGN is a three pronged naval trident addressing people, performance and professionalism. Firstly, it is about ensuring we have enough people with the right training. We need to recruit and retain the trained workforce we need to meet our foreseeable operational commitments and those of an uncertain future. We must be able to man the new surface platforms, aircraft and submarines which the White Paper is promising us and which are being built this decade.

Secondly, it is about streamlining our structure so that it is aligned to provide clearer accountability and responsibility for key activities. There is very little, if any, fat in the system after many years of reviews and budgetary restraint but we can always get better organised so that the administrative and logistic machinery runs with less friction and is more robust. We need to be as lean as is compatible with retaining stamina and endurance.

The third principle leads on

logically from the second. We have to manage costs and operate in a resource conscious environment giving the government the value for money that it rightly demands of us. The Defence Strategic Reform Programme which requires \$20 billion of savings, makes it imperative that Navy's culture and practices are aligned so that they can sustain the rapid transformation that this major review requires of the whole ADE.

RECRUITMENT AND RETENTION

This article addresses only the first NGN principle – the people issue. Australian governments, of both parties, have been driving Navy hard for a long time now and people, like ships, need respite or they begin to lose resilience. If we wear people out we lose them to other parts of an economy once again keen to take them. Navy's present separation rate is down to approximately 9% for sailors and 6% for officers. This is very good news. But recently it was up at nearly 12 %. That loss rate was unsustainable. The rapid improvement in 2009 may be partly attributable to the financial downturn and fears of unemployment, but it is also early fruit of the re-invigoration of the Navy's leadership culture under NGN. Navy's challenge is to sustain that improvement in retention as the economy recovers and the usual suspects start targeting our highly trained sailors once again.

Army and Air Force in financial year 2007/08 recruited 86% and 84 % of their workforce targets and Navy only 75%. (But the last intake at the naval sailor training institution *Cerberus* was 90% full and many of the "hard to get" categories are filling after years of difficulty.) Navy's persistent manning problems have been compounded by early separation of recruits. In recent years up to a quarter of Navy's new entrants, both officers and sailors, left within their first three years of service. This can mean that in some categories we needed to recruit more than ten sailors to eventually produce one Petty Officer. That task was unsustainable. In 2008 we had technical junior sailor categories where the attrition rate made them beyond critical they were termed 'perilous.' NGN has been addressing this problem as a priority.



Part of the difficulty has been that it has taken too long to get recruits out of the training pipeline and to sea. Strong motivation and high recruit morale is the product of a realistic anticipation of being a trained member of a working team at sea soon. We need to nurture the enthusiasm of our new entrants and get them job ready fast if we want to keep them.

DEFENCE FORCE RECRUITMENT – CAN DO BETTER!

Our recruits, both officers and sailors, belong to that relatively small demographic slice of young Australians prepared to consider a sea going career. They are therefore a scarce commodity and need to be treated as such. We also need to stop losing good potential recruits in the overly protracted and sometimes dysfunctional recruitment pipeline. We could fill every empty bunk at *Creswell* and *Cerberus* with potentially good new entrants who asked to be considered for entry, got bewildered in the maze that they found the recruiting system to be, lost interest and went elsewhere for a career.

This longstanding difficulty is being addressed as a priority under NGN

I spent six years at the RANC, from 2002 to 2008, getting to know generations X and Y, 'up close and personal'. Many of them had a very dim view of the length of time the whole recruitment process took and the number of times they had to find out what was happening to their application. NGN is getting smarter at getting a uniformed member in front of potential recruits and speeding up the recruitment process.

DIVERSITY OF RECRUITS

The recruits selected to join are excellent young men and women - every bit as keen on a successful naval

career as those from the past. They are bright, motivated and inquisitive and often more broadly educated and technically capable than you were at their age. Most are in their early twenties but they range in age from 17 to 50. They come from diverse backgrounds. One young graduate some years ago liked the RANC so much that the next year he sent his mother! She was recruited as a nursing officer. When the Chief Gunnery Instructor asked with awe how our first female chaplain had attained a perfect score with the Steyr on her first shoot on the range, she revealed that before she was ordained she had spent a decade in the VIP close protection squad of the AFP! We recruit from a very broad demographic these days and we need to go further in that direction, particularly into the indigenous and minority communities if Navy is to become representative of the whole community. NGN has a working group addressing the reasons why women separate early and addressing them swiftly. The whole ADF is looking hard at how it can become a much more women friendly work place.

THE GAP YEAR SCHEME

A conspicuous recent success for the ADF and Navy has been the Gap Year Scheme, whereby school leavers who are keen to 'try before they buy' go to *Cerberus* for some basic training. They then get a few days at sea, find out what navy can offer them, and make a start on what they can turn into a full naval career if they chose to do so. Many do decide to join the permanent navy and they make fine new recruits that we could not necessarily have attracted through the conventional recruiting process. There is now a waiting list for the places available on this successful scheme and it is being reinforced and expanded. This innovative programme which pre-dates NGN is now being incorporated into it.

GENERATION X AND Y - EXPECTATIONS

Most of the young people I helped to train at *Creswell* are not school leavers. Before they join they have made a start in a good career already and are typically in their early twenties. Consequently though they are keen



New Generation Navy - Navy's Wind of Change

to learn they want to know why they are doing so. They are subtly different from their Cadet Midshipmen forebears in two other important ways. Firstly they have come from a 'rights based' culture which means that they see any form of belittlement or personal denigration as being both surprising and completely unacceptable and therefore a cause for redress. Secondly, they are not too good at deferring gratification or putting up with tedium. Baby boomers were indulgent parents and were materially generous to them and most things they wanted came when they asked for them. Previous naval officers may recall a fair bit of belittlement and tedium in schooling and their early naval careers. They expected it and though they may not have liked it they accepted it. Most were probably ordered off a bridge as a Midshipman for a reason that was not immediately obvious to you and given some 'free character analysis' as they left. All spent tediously long periods at sea deferring every conceivable kind of gratification including comfort. It was part of the deal. *'You shouldn't have joined if you can't take a joke'* was an often heard remark. Long careers in the same industry were normal in the working population as they were in the three services so Navy, though a tough life, was not too different from other workplaces. There were compensations. These included the fact that frequent sea time was relieved by some very good runs ashore up top in South East Asia.

OPERATIONAL TEMPO

The operational tempo we have been operating at for the last decade makes those 'showing the flag' trips much less likely for most sailors. These round the world voyages do occur still every couple of years, but most of our major combatant ships spend much of

their time off hot, sandy, puritanical, expensive, Gulf State cities, which are less than exciting for Jack or Jill on a rare run ashore. Our minor war vessels work very hard in our own northern approaches. Insofar as it is feasible we have to find new ways of combating tedium at sea and ashore and providing motivation from within the job itself. To do that requires officers and senior sailors to drive decision making down to the level at which work can be done safely. Enriching the job experience by offering responsibility at a more junior level is what motivation feels like to our sailors and junior officers. That is a cultural change and NGN signature behaviour designed to meet the needs of the new generation.

IQ AND EQ

The best commanding officers, departmental heads and divisional officers have always known that they needed to be coaches and mentors, as well as 'the boss'. They ran taut, but usually happy ships and departments

and we remember our years serving in them with affection and pride. These officers and the 'old and bold' senior sailors who moulded us were the people we modelled our own leadership style on and tried to emulate. But in the past the navy's culture also accepted, by ignoring it, that there were also other, less engaged, ways of running ships and there have sometimes been a few individuals, at all rank levels, who used intimidation instead of encouragement. Sometimes high in IQ but always low in Emotional Quotient (EQ) these characters were as unpredictable as a typhoon. Many can probably recall officers and some very senior sailors who were like this. They hid behind their rank, prided themselves on being tough, but were often in fact bullies. Too often they were tolerated and promoted because they got the job done. That their subordinates were less than happy with them was not a major consideration at a time when recruitment and retention was good.



ELIMINATING INTIMIDATION

Eliminating this tolerance for intimidation is where the modern Navy culture has changed and is still evolving. CN has stated that NGN is 'about changing the undesirable elements of Navy's culture.' It has taken a while for everyone in navy to realise that messing about with young people's heads was always counterproductive and is no substitute for good leadership. Gen X and Y won't accept it and neither will all the new generations to come after them. It is no part of their experience, or their life plan and they have career alternatives, so if they encounter attempts at intimidation they often vote with their feet and resign.

ACCOUNTABILITY FOR PEOPLE

Let me give you a hypothetical example to make this issue of accountability real to you. If a navigating officer loses a pair of binoculars over the side worth \$200 he is quite rightly held responsible and will have to put his reasons in writing for his mistake. If the same officer causes, through his belittlement or harassment of a subordinate the resignation of a junior officer training as an officer of the watch, who has cost the tax payer \$200,000 to get to the point where he can be useful, then no particular accountability is attributable to him. That is illogical. In the past, as you may remember, too many senior PWOs devoured their juniors in the operations room. That has greatly improved because it became very obvious recently that we were running out of PWOs and even officers prepared to train to be PWOs were getting hard to find. Some stress is inevitable in an ops room, or on a bridge, or in an engine room, or a flight deck. But it can only be motivational if it results in new

learning, and acknowledged success, not reprimand, fear and discouragement.

REINVIGORATING THE DIVISIONAL SYSTEM

NGN's people strategy is about ensuring that the best leadership practices of the past and present are universalized and the new culture revolves around coaching, mentoring and valuing the 'greatest single factor', our important, expensively trained motivated, people. Under NGN the divisional system is being re-invigorated and made to work everywhere, in accordance with the 'maker's instructions.' There is an online divisional toolbox available from which busy DOs can take material for day to day guidance and divisional meetings. It is now nearly four hundred years since the Divisional System was first implemented in the RN and it is, as it always was, just as useful and effective as senior officers choose to make it in their command. It requires dedication, empathy and imagination and the recognition that being a good divisional officer, or divisional senior sailor, is not peripheral but central to any naval career. It is the foundation on which a fine career can be built and is the best possible preparation for command of sailors both at sea and ashore.

The first three of NGN's signature behaviours are about embedding this renewed command and divisional culture in every ship and shore establishment. They are:

Respect the contribution of every individual
Promote the wellbeing and



*development of all Navy people,
 Communicate well and regularly.*

These signature behaviours have to find expression in the daily lives of our sailors at sea and ashore. NGN must make a difference down on the mess decks as well as in the wardroom. This requires imagination and being prepared to let go a few longstanding ways of doing things which are no longer useful. The next four signature behaviours show how we are being encouraged to do this. They are:

Challenge and innovate
Be cost conscious
Fix problems take action
Drive decision making down

TRAINING THE FUTURE FORCE

Plan Train is an example of Navy innovation at work. In April 2009,

New Generation Navy - Navy's Wind of Change

Navy's trained workforce stood at 9,500 with another 500 reservists on Continuous Full Time Service. We had another 3,200 members in the training force. We need to reduce the proportion of sailors who are waiting to complete their training and simultaneously grow the trained force by a further 500. To address this challenge an important innovative initiative, commenced before NGN, to address this imbalance and it is working very well. It is entitled 'Plan Train'. Under this initiative two major fleet units which are temporarily withdrawn from operational availability are made available to ensure that technical trade trainees who need to get to sea to complete their competency logs and qualifications can do so as soon as they are ready. This initiative is producing swift results and will be extended while there is a requirement for it.

None of our major fleet units will ever be purely training ships, but in rotation most will have a period when training the next generation is their primary responsibility. Plan Train will mean that junior officers under training, and junior technical sailors, will be job ready much faster than in the past and there will be no cause for a sag in morale as they wait ashore to start a career at sea.

RECRUIT THE SAILOR BUT RETAIN THE FAMILY

Let me give you another example of a sensible initiative which NGN is endorsing and mandating. We need to use our people for what they are trained for. Duty watches alongside in home ports in mostly empty ships always were morale busting and as our young sailors live ashore on rental allowance and the older ones are in married quarters or their own homes, the reasons for using ship's

company members as uniformed night watchmen on empty ships have largely disappeared. But it took a while for us to realise that we could, and should, stand our uniformed people down and let them get home to their families and be available, if needed, on the end of a phone. That is a change welcomed particularly by modern working partners who put up with separation only when it is clearly unavoidable. Providing supportive employment practices and increasing family connection required under NGN are often just the application of simple common sense. Whenever Navy pays into the "*Bank of Mutual Obligation*" we always get an excellent return on that investment from our people. Looking after that all important work life balance pays handsome dividends in loyalty and retention.

BRINGING BACK OUR OWN TRAINED PEOPLE

We have plenty of highly trained sailors and officers in Australia. They are just not in the Navy any more! With the age limit for service having been lifted effectively to 60 many former sailors on rejoining are now able to offer another

ten years or more of service and when the terms of the contract are right, and they are actively recruited, many will return to the permanent Navy or the active Reserve. We have made a good start in re-recruiting former members but in 2008 only 7% of all RAN enlistments were from personnel returning to Navy. That is not because everyone who has left Navy is delighted with their new careers. Far from it; many have found that the grass is not greener outside at all. In the past we have just not been very good at keeping up with our highly trained leavers, our alumni, who may be prepared to consider a return to Navy provided they do not take a reduction in rank or seniority. Navy can be smart enough to make it easy for our former colleagues to be welcomed as they return over the brow. Until recently returning to the service was more like being slung aboard from a bosun's chair – an daunting and uncomfortable experience.

We also need to look at what people have been doing outside and see whether it is relevant and can be recognised and remunerated. We need to allow people to spend time away from Navy without having to



permanently discharge. We need to offer an opportunity to many more people to do a mid-career full time tertiary qualification in exchange for a return of service obligation. A period of time in the RANR can be a component of a full naval career not the termination of one. The alternative to flexible career management is brittle management and that is counterproductive and breaks people and careers prematurely and unnecessarily.

OVERSEAS RECRUITMENT OF TRAINED SENIOR SAILORS AND OFFICERS

Outside of Australia there is still a pool of readily available naval talent to be tapped into. Large numbers of expensively trained and very experienced officers and senior sailors are coming to the end of their careers in the RN in their forties. The RN is not extending them because they are shrinking their workforce through natural attrition, restricting promotion, and their recruiting is generally good. Under NGN we are making the lateral entry of specialist shortage categories from the RN and other navies much easier than in the past.

Helicopter pilots are an obvious example of highly cost effective transferees but there are many others. For example if we are going to be operating two Landing Helicopter Dock aircraft carriers effectively by 2015 we need to stand up a new category of large deck aircraft handlers, a skill we have not needed since *Melbourne* was decommissioned a generation ago. Some of the first people in that new category could bring their experience from the RN's *Invincible* class and *HMS Ocean* to train the RAN successors. We are only one posting cycle away from selecting the commissioning crews for the new



HMAS Canberra and therefore time is short for getting this sorted out.

SMART RECRUITING OF KEY CATEGORIES OVERSEAS

RN sailors and officers considering immigration need to be encouraged to transfer navies by being allowed to keep their hard won rank and, wherever possible, have their existing qualifications recognised. That has not been happening as well as it could have been in the past and we have lost valuable potential transferees because we asked them to drop a rank and in the case of senior sailors sometimes two ranks. That was rarely necessary. Despite claims to the contrary that they would become 'roster blockers' this is not the case. Individual contracts can be offered to transferees to ensure that this is not going to occur when rank is retained between services. In a small navy like the RAN a few key people, expensively trained overseas, with the right experience are disproportionately important to retaining specialist capabilities. They are also an excellent investment for Australia.

Overseas families arriving at airports need to see a uniformed

presence waiting for them, preferably from the receiving unit. Families should be swiftly woven into the fabric of their local naval community. They should not arrive without welcome and be left wondering why they are feeling homesick and unconvinced about the wisdom of their partner's decision to join the RAN. That basic consideration has not always been extended to the partner of the transferee. We recruit the member but we retain the family is a good guide. This wise approach just requires imagination, not expenditure, and should be a normal part of any transferee's family's first experience of Australia and our naval culture.

DHA

While we are on the subject of families, Defence Housing Australia would be wise to remind its junior staff that their top responsibility is looking after our defence members and their families, not depressing and worrying partners of serving members through undue attention to minor details on arrivals and departures. DHA's first priority should not be the fabric of the housing stock they own, or locks and keys, but instead needs to be the welfare of the

New Generation Navy - Navy's Wind of Change

serving members and their families who live in the houses that DHA manages for the ADF. When sailors explain in their exit survey why they are leaving the service prematurely DHA's rigid approach to minor matters features all too prominently. This cultural change is 'low hanging fruit' that can be addressed by enacting cultural change in that organisation and re-focussing its efforts on what really matters.

ENDURING NAVAL VALUES

With all this generational change forecast I want to make clear that we will not be changing our Navy values. Honour, Integrity, Courage, Honesty and Loyalty remain front and centre in the NGN renewal strategy. NGN will strengthen those values and embed them further in our daily lives. NGN will find new ways for the organisation and its people to demonstrate these values to each other. The five Navy values align with the key signature behaviours which are at the core of the NGN culture.

The final three of these signature behaviours are:

Strengthen relationships across and beyond Navy

Be the best I can

Make Navy proud, make Australia proud.

CULTURAL EVOLUTION AND RENAISSANCE

This navy cultural renaissance is well underway. It will be swift, but not instantaneous. It will be five years before the whole NGN programme has been fully implemented. It ties into and reinforces the major expenditure review which will be happening over the same period. NGN can, must and will succeed. Getting Navy culture right

by reinforcing existing best practices and reaching out for new levels of excellence will allow us to hold onto our great people and successfully recruit the next generation, our successors. Failure is not an option. We cannot afford to become an amnesiac, anorexic organization which has lost its memory for how it did its core business and would lack the strength to do it even if it remembered how. That is unacceptable and unnecessary. We still have a few perilous sailor categories, and a particular difficulty, which is being addressed, with manning our submarine force, but the navy as a whole is not in peril and with this NGN renewal programme in place and working it never will be.

The RAN is a 'can do' organisation full of character, team work and dedication. This well designed and targeted new generation cultural renewal programme will ensure that Navy will remain able to raise, train and sustain the force we need to man the new fleet now building. NGN will enable the Navy to meet the expectations of the nation, and all future Australian governments, for the rest of our lives, and far into the unknowable future. It is that important an initiative and will be looked back on as a major milestone in the history of the service.

NGN is Chief of Navy's top priority, as it will be for his successors. We who are still serving are all being encouraged to spread the word on NGN and enlist community engagement with it. 🚢



Lieutenant Commander Desmond Woods has served in the New Zealand Navy, the Royal Navy, and the British Army. He is currently a Training Officer with the RAN, posted to the Staff College in Canberra.

THE RELEVANCE OF MODERN NAVAL EXPERIENCE AND CLASSICAL MARITIME STRATEGIC THOUGHT IN THE 21ST CENTURY

BY LIEUTENANT SAM FAIRALL-LEE

Some would have us believe that the strategic environment of the twenty first century will be so different to that of the past, so changed by the global power relationship and the development of 'new' and asymmetric threats, that all previous strategic thought and operational development will be of little relevance. Some say that sea control will no longer need to be fought for, or even that navies will be no more than coast guards, ferry services for troops or even well-armed water police.

While there is no doubt that the world has changed since the end of the Cold War, this is just the nature of international relations. As John Mearsheimer so eloquently explained, to predict the future by simply extrapolating forward from the present does not make for sound analysis¹.

What is more effective is to understand general theories of power, strategy and cause and effect. As Corbett told us, strategic study is a means by which we can assess 'the normal' and evaluate the ways in which one may seize and exploit opportunities; it should not be a dogma with an expiry date or a detailed instruction manual for success.

For this reason, many maritime strategic ideas and naval historical experience will always be relevant to us, as they provide us with a means to evaluate the potential consequences of our actions, and to identify threats and opportunities. Maritime operational concepts are also likely to remain relevant to some degree, so long as ships retain their unique capabilities. This paper will demonstrate the

enduring relevance of naval experience, strategic thought and operational concepts by considering a few principles of maritime strategy and the operational art.

Almost a hundred years ago, Mahan wrote about the inherent links between control of the sea, trade, economic and social development, and international power. Corbett expanded on and finessed these points, and the principles are enduring. Whilst some might say that the 'globalisation' of trade has made control of the sea guaranteed (as states are dependent upon one another), there is little strategic justification for this. States cooperate because it is to their advantage to do so, just as always, and in a unipolar international setting there is no need to upset the balance. When it is to one's advantage to take control for one's self and one's allies however, or to deny control to an adversary, then Corbett's guidance is as relevant now as it was in 1914 or 1940.

Indeed, noting the growing importance of the 'trading system' as it has become, and the increasing scarcity of resources, international trade *itself* is now a legitimate target for those who oppose the current state of international affairs². This growing

² For example, the French tanker *Limburg* was attacked by terrorists on 6 October 2002, see: British Broadcasting Corporation, 'Yemen ship attack "was terrorism"', *BBC News World Edition*, 13 October 2002. <http://news.bbc.co.uk/2/hi/world/middle_east/2324431.stm>

¹ John Mearsheimer, *The Tragedy of Great Power Politics*, Norton (New York: 2001), p.xii.



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

resource scarcity, combined with increasing challenges to the unipolar strategic environment, is seeing a trend towards states readying themselves for maritime competition. Great power economic competition spilling over to the high seas is a worrying potentiality, yet as long as Mahan's original thesis regarding the links between the sea, trade and economic development holds true, it is a legitimate concern. Likewise, those states (like Australia) which believe that United States hegemony allows them free and guaranteed access to the sea should carefully consider their reasoning. The deep and inherent links between the sea, economies and society is an enduring principle, but it has both advantages and disadvantages.

The long-term, enabling abilities of sea power and its connections

THE RELEVANCE OF MODERN NAVAL EXPERIENCE AND CLASSICAL MARITIME STRATEGIC THOUGHT IN THE 21ST CENTURY

with alliance structures is another strategic naval principle that spans centuries. The ability of Britain to use its naval strength to secure its home base during the Second World War; to build, manage and fund coalitions; to limit Hitler's expansion and to enable projection back into the Continent was an ability also successfully practised against Napoleon a century and a half before. Following that war, the United States leveraged off its maritime superiority to build and maintain the NATO Alliance and to apply such significant pressure on the Soviets that their system eventually collapsed. In the 1990s, US naval strength was again used to encourage a coalition against Saddam Hussein and to enable power projection into Iraq. China is now attempting to build a pseudo-maritime coalition based on its naval expansion, increasing economic power and need to secure its resource requirements. So long as warships remain the only forces capable of freedom of movement, sustained presence and mobility in mass³, this latent strategic enabling capacity will remain unique to navies. No other forces possess the *long-term* strategic, pseudo-diplomatic potential of the sovereign warship, able to travel the globe independently without requiring local and continual support. Able to linger without penalty, apply pressure without provoking.

It is likely that these maritime operational concepts, including also access, flexibility, adaptability, reach and resilience *will* remain the domain of warships. Whilst aircraft are becoming longer range, capable of carrying increased payloads with less requirement for human interface, none of these things provides them with anything like the access, presence or flexibility of warships. When speed

of action is required against a declared hostile enemy, aircraft – if in range – will provide that action faster and with more force than ever before, but the world

has seldom been so black and white. Aircraft attack things and then fly home, and attacking things is war. Warships reassure, impress or deter as the case requires. In short, warships remain capable of graduated force; the only graduated force inherent in aircraft is their purchase and perhaps their forward deployment – their use is the end of the graduation, and warships, if used wisely, will remain the best bet in preventing the need for that action. Until aircraft becoming self-sustaining – something not on the horizon – the modern Douhets and Mitchells will have to keep waiting.

So long as these operational capabilities remain the domain of warships, and so long as states (and some non-state actors) continue to exist as independent entities who fear the potential of one another (which realist theories tell us they must)⁴, other maritime strategic concepts such as Sea Denial, the Force in Being, and maritime Power Projection are also likely to remain relevant in one way or another. Maritime power projection is currently in fashion in the United



States due to that state's capacity for almost-global sea control, and other states – notably China – now seek to emulate this striking potential as a natural extension of their economic and diplomatic power. With increasing importance being placed on the ability of maritime forces to more directly influence events ashore, we are likely to see continued development of concepts such as the US Marine Corps' Operational Manoeuvre from the Sea and Ship to Objective Manoeuvre, as well as continued developments of technologies such as assault craft, organic aircraft, cruise missiles and long-range munitions. It remains to be

Modern navies provide persistence: Rear Admiral Nora Tyson (left), commander, Logistics Group Western Pacific, and Republic of Singapore Navy Rear Admiral Ng Chee Peng, fleet commander, listen to Commander Michael McCartney of guided-missile destroyer USS Chung-Hoon during a Hellfire missile exercise in CARAT, a series of bilateral exercises held annually in SE Asia.



A member of the Chinese PLA holds a national flag outside the Great Hall of the People in Beijing

⁴ See, for example: Hans Morgenthau, *Politics Among Nations: The Struggle for Power and Peace*, Kenneth Waltz, *Theory of International Politics* and John J. Mearsheimer, *The Tragedy of Great Power Politics*.

³ See: Royal Australian Navy Sea Power Centre, *Australian Maritime Doctrine: RAN Doctrine 1*, Defence Publishing Service (Canberra: 2000), pp.48-51.

seen to what degree states will realise that sea control remains the vital enabling factor for power projection, Beijing certainly seems to have taken this onboard and as such are pursuing a balanced maritime force for the first time since the Long March.

Sea Denial, traditionally the strategy of the weaker power, will also remain as a method for the inferior to challenge the powerful, as Iraq attempted (with some success) in both 1991 and 2003. Indeed, the coming decade will likely see terrorist organisations become further involved in the Sea Denial sphere as a way of attacking not just individual states, but the 'Western' trading system itself. We have seen this already both against warships and merchant vessels, and it is not inconceivable that such organisations may even strive for some degree of littoral sea control, especially in regions featuring weak governments. Australia's region, especially near Borneo and the Philippines, may see terrorist, criminal and politically motivated groups striving for local and temporary control in order to expand their networks and manage their logistics. Columbian criminal groups have taken to utilising submarines⁵ and Hezbollah has successfully employed anti-ship missiles⁶, is reducing the number of the Royal Australia Navy's major surface combatants a smart move in these circumstances?

In conclusion, the strategic environment in the twenty first century is far from predictable or assured. Those who have attempted to predict

⁵ See: Australian Broadcasting Corporation, 'US thwarts 'cocaine submarine' off Colombia', *ABC News*, 17 May 2009. <<http://www.abc.net.au/news/stories/2009/05/17/2572865.htm>>

⁶ On 14 July 2006, the Israeli *Saar* class corvette *HANIT* was attacked by the Lebanese terrorist organisation Hezbollah using an advanced Chinese developed C-802 Anti-Ship Missile. See: Themistocles 'More Destroyers!', *The Navy: The Magazine of the Navy League of Australia*, 68(4), Oct-Dec 2006, pp.2-3.

specific strategic developments in the past have generally failed. Who, in 1800, in the midst of the French Revolutionary and Napoleonic Wars, would have predicted that century would be one of the most peaceful in European history? Likewise who, in 1900 when there was no great power war in Europe, would have predicted that century would feature two world wars and the advent of nuclear weapons?⁷ In Australia, not a single Defence White Paper – most designed with twenty year timeframes in mind – has lasted more than seven years. This century has already seen two! When looking ahead strategists should not attempt to gamble on an outcome, but seek to identify strategic trends, risks and opportunities. The strategic trends which Mahan first identified a hundred years ago remain largely relevant, if not his operational methods. Corbett's ideas regarding the nature of sea control and his application of Clausewitzian principles to the maritime environment also remain relevant. Operationally, despite the great developments in air power over the past century, warships still retain unique capabilities which allow governments to pursue options other than all out war. It is this flexibility of response which only navies can provide, flexibility that has continued unchallenged since the days of sail, that is the best insurance against the unknown. The twenty first century may indeed turn out to be 'the Asia Pacific century' – or it may not. But whatever this century holds, the same principles of sea power applied by Drake, Nelson and Nimitz remain as relevant today as they were in 1588, 1805 or 1942. 🚢

⁷ Mearsheimer, *The Tragedy...* p.xii



Lieutenant Sam Fairall-Lee joined the RAN in January 2000, graduating from ADFA in 2003 with a BA majoring in history and politics. In 2005 he received his Bridge Warfare Certificate in HMAS Newcastle, and

following a brief period at the Defence Signals Directorate, recently commenced Principle Warfare Officer training. Lieutenant Fairall-Lee has interests in naval history and maritime strategy, especially concerning RAN capability procurement decisions of the 1980s.

(The editor's intention was to publish the winner of the Commodore Alan "Rocker" Robertson essay competition's essay in this issue, but as chance would have it the winner – Sam Fairall-Lee – had already submitted his essay on Mahan and Corbett for publication in the December 2009 issue. So we are printing this essay, which he had also submitted to the competition. Congratulations!)

BIBLIOGRAPHY

Australian Broadcasting Corporation, 'US thwarts 'cocaine submarine' off Colombia', *ABC News*, 17 May 2009. <<http://www.abc.net.au/news/stories/2009/05/17/2572865.htm>>

British Broadcasting Corporation, 'Yemen ship attack "was terrorism"', *BBC News World Edition*, 13 October 2002. <http://news.bbc.co.uk/2/hi/world/middle_east/2324431.stm>

Corbett, Julian S., *Some Principles of Maritime Strategy*, Longmans, Green and Co. (London:1911).

Crowl, Philip A., 'Alfred Thayer Mahan: The Naval Historian', in Paret, Peter (ed.), *Makers of Modern Strategy: From Machiavelli to the Nuclear Age*, Princeton University Press (Princeton: 1986), pp.444-477.

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

Mahan, Alfred Thayer, *The Influence of Sea Power Upon History 1660-1783*, Dover Publications (New York: 1987).

Mearsheimer, John J., *The Tragedy of Great Power Politics*, Norton (New York: 2001).

Themistocles 'More Destroyers!' *The Navy: The Magazine of the Navy League of Australia*, 68(4), Oct-Dec 2006, pp.2-3.

Reeve, John, 'Mahan, Corbett and Modern Maritime Strategy', in Smith, Hugh (ed.), *The Strategists*, Australian Defence Studies Centre (Canberra: 2001), pp.41-53.

Royal Australian Navy Sea Power Centre, *Australian Maritime Doctrine: RAN Doctrine 1*, Defence Publishing Service (Canberra: 2000).

Force 2030: Recruitment is Not the Problem

BY MIDSHIPMAN SARA MCDONAGH

Runner up essay in the Commodore Harry Adams Essay Competition

Don't get the wrong impression; recruitment is a problem for the RAN. It has been an issue since the time of Royal Navy press gangs and will continue to be, despite initiatives such as the *Sea Patrol* television series and the New Generation Navy Strategy. However, in terms of the 2009 White Paper *Defending Australia in the Asia Pacific Century: Force 2030*, recruitment is not *the* problem; our future capabilities are.

If the future naval capabilities outlined *Force 2030* are delivered, the RAN will become the custodian of the naval equivalent of an S-Class Mercedes Benz: 'a more potent and heavier maritime force'¹ complete with 'the most advanced weapons'² and 'capabilities...to take maximum advantage of technology'.³ Yet while personnel make up the engine required to move this 'S-Class Navy', *Force 2030* seems determined to purchase the car and then hope the engine will turn up on time. By questioning this long-held assumption that recruitment can always be increased to 'support and sustain the current and...new capabilities',⁴ I argue that the recruitment problem can never be adequately resolved and should instead be considered a limiting factor on the development of a future maritime force.

Although the global economic crisis and resulting rise in unemployment has increased interest in the Navy as a job option,⁵ the long term ability of the RAN to increase recruitment numbers is questionable. The number of permanent personnel in the RAN has declined from 16,059 in 1985 to 13,230 in 2008.⁶ A loss of almost

3,000 personnel in a period when the overall level of naval capability remained relatively static⁷ is certainly not ideal. And although a small portion of this decline may be attributed to the civilianisation of several areas of the Navy during this time, these numbers do appear to

be indicative of a long-term negative trend. Moreover, there is evidence that this long-term trend will continue as a result of the increasing impact of several obstacles to any future recruitment initiative.

The first area of concern is the natural decline in the portion of Australia's population who are eligible for recruitment. The ageing of Australia's population has been well documented in the media and, according to the Australian Bureau of Statistics; the median age of the population will have increased by almost four years by 2026.⁸ While the increasing age of Australia's workforce is an issue which will affect all areas of industry, the RAN must also contend with natural limitations on its recruitment.

Firstly, personnel must be fit enough to cope with the physical requirements of Navy life. Secondly, although overseas migration will continue to supplement Australia's population,⁹ migrant workers are a limited, if not untenable, resource for the RAN. Serving in the RAN requires a commitment to both the Navy values and the Australian people which places strict limitations on the use of foreign nationals.

In addition to the ageing population,



Australia's birth-rate currently sits at 1.6 babies per woman. This rate is well below the 2.1 babies per woman which the United Nations believes is required to maintain a population.¹⁰ As a result, over the next 50 years, Australia's population will first plateau at around 30 million people and then begin decreasing as the number of deaths outweighs the combined influence of births and migration. Interestingly, this indicates that the recent ADF initiatives designed to increase recruitment of Australian women may in fact backfire. If more women become entrenched in time-consuming occupations in the RAN, the birth-rate may fall further and negate the benefit of the recruitment increase. And even without the influence of increasing recruitment of women, the persistence of an inadequate birthrate will compound the problem of an ageing population. This means that the number of people who fulfil the requirements for Navy recruitment will continue to decline.

It is not within the power of the RAN, or the wider ADF, to eliminate the limitations of Australia's demographic. Therefore, these obstacles to future recruitment increases must be taken into consideration when developing naval capability. The RAN is generally

The LHDs will be the biggest ships ever operated by the RAN (defenseindustrydaily)

considered to be a medium power navy, which means that our navy should have 'enough means of power to initiate and sustain coercive actions whose outcome will be the preservation of its vital interest'.¹¹ However, it is important to note that countries such as France, India, Japan and Britain also fall within this definition of a medium power.¹² Each of these nations hold a population at least three times the size of Australia¹³ and therefore possess a much larger capability to provide the required workforce for a medium power navy. However, the contrast in size between Australia and other key medium power nations does not necessarily indicate that we cannot be considered on the same level. Australia's ability to protect vital interests as well as a desire to achieve a higher level of autonomy are key indications of its position as a medium power navy.¹⁴ The concern is, with a small population in decline, the RAN must clarify the level of autonomy it can provide without overstressing its workforce.

The second issue for capability development is the importance placed on image during the selection of capabilities. The aircraft carrier debate was apparently resolved following the rejection of the Navy's application to purchase *HMS Invincible*.¹⁵ However, the selection of the LHD design with a ski jump may indicate that the RAN still holds dreams of being, or at least appearing

to be, a carrier capable navy. It may be a nominal capability rather than a realistic one but it certainly has serious implications for the image of the RAN as a middle power. Similarly, the development of a multi-purpose corvette type vessel to replace the Armadale Class Patrol Boats, the Huon Class Mine Hunters and hydrographic vessels¹⁶ will dictate a substantial image alteration for the RAN. The larger and more capable the vessels which conduct border security and resource protection roles, the more formidable the Navy will appear.

Unfortunately, the creation of a naval force with a significantly more formidable appearance may simply reinforce the current 'structural hollowness'¹⁷ of the RAN. If recruitment targets are not achieved, the current naval personnel will be put under considerable strain to fulfil expanding roles. Placing more responsibility on an already overloaded capability will also have drastic impact on the ability of the RAN to retain people. By developing a force structure without an adequate workforce to man these new capabilities, the Navy will fail to capitalise on its force expansion. The benefits of *Force 2030's* vision of a more

formidable navy will be outweighed by the reality of an overstretched navy.

The final consideration for the development of a more suitable force structure for Australia's limited population is the United State of America's domination of the world's oceans. Since World War II, the US has not only maintained 'the world's largest navy',¹⁸ it has used its unique geographical position and economic power to develop an overwhelming control of sea lanes. Essentially, no conflict can occur today, without the influence and acceptance of the US. The Falklands War in 1982 was only possible because the US decided not to obstruct it and, in another example, the French, British and Israeli invasion of Egypt was abandoned because the US did not approve. For Australia and the RAN, this means that despite the development of advanced capabilities, any higher level of autonomy remains fundamentally unattainable.

By focussing on the capability advancements and expansion for the RAN, *Force 2030* may provide a sophisticated and superior vehicle for the application of sea power. However, by assuming that the importance of personnel lies in the support

People are of utmost importance - flight deck personnel ready a San Diego Coast Guard HH-60 for launch on the flight deck of the aircraft carrier USS Abraham Lincoln - photo US Navy



Force 2030: Recruitment is Not the Problem

and sustainment of capabilities, the 2000 White Paper dictates the construction of a naval force structure which Australia may be incapable of sustaining. The emphasis on personnel should be at its peak during the development of naval force structure, not once the nature of the force has been decided. Simply put, without an engine to match the S-Class design, Australia's Force 2030 Navy is going nowhere fast. 🚢

Bibliography

Agnew, R., Ball, D., Langtry, J., McNamara, E., Ward, R., *Australia's Defence Resources: a Compendium of Data*, Pergamon Press Australia, Sydney, 1986.

Cheeseman, G., 'The Howard Government's Defence White Paper: Policy, Process and Politics', *The Drawing Board: An Australian Review of Public Affairs*, Vol. 2, No. 1, July 2001.

Cumpston, I., *Australia's Defence Policy 1901-2000*, Union Offset Co. Pty Ltd, Canberra, 2001.

Department of Defence, *Defending Australia in the Asia Pacific Century: Force 2030*, presented to Parliament by J Fitzgibbon, Minister for Defence, Canberra, May 2009.

Department of Defence, *Key Questions for Defence in the 21st Century: a Defence Policy Discussion Paper*, paper presented by J Fitzgibbon, Minister for Defence, Canberra, April 2008.

Department of Defence, *Review of Australia's Defence Capabilities*, report prepared by P Dibb, Department of Defence, Canberra, March 1986.

Friedman, G., *The Next 100 Years*, Doubleday Publishing Group, New York, 2009.

Hill, J. R., *Maritime Strategy for Medium Powers*, Croom Helm Ltd., Kent, 1986.

(Endnotes)

1 Department of Defence, *Defending Australia in the Asia Pacific Century: Force 2030*, presented to Parliament by J Fitzgibbon, Minister for Defence, Canberra, May 2009, p. 13.

2 Ibid., p. 71.

3 Ibid., p. 54.

4 Ibid., p. 113.

5 News article 'New Recruits Flock to ADF', *ABC News*, 6 January 2009, viewed 1 July 2009, <http://www.abc.net.au/news/stories/2009/01/06/2459824.htm>.

6 Agnew, R., Ball, D., Langtry, J., McNamara, E., Ward, R., *Australia's Defence*

Resources: a Compendium of Data, Pergamon Press Australia, Sydney, 1986, p. 108 and Department of Defence, *Key Questions for Defence in the 21st Century: a Defence Policy Discussion Paper*, paper presented by J Fitzgibbon, Minister for Defence, Canberra, April 2008, p. 42.

7 Based on data from Agnew, et al., *Australia's Defence Resources: a Compendium of Data*, p. 116 and Department of Defence, *Key Questions for Defence in the 21st Century: a Defence Policy Discussion Paper*, p.42.

8 Australian Bureau of Statistics' Population Projections, Australia, 2006 to 2101; Australian Bureau of Statistic, 4 September 2008, viewed 01 July 2009, <http://www.abs.gov.au/Ausstats/abs@.nsf/mf/3222.0>.

9 Ibid.

10 Friedman, G., *The Next 100 Years*, Doubleday Publishing Group, New York, 2009, p. 54.

11 Hill, J. R., *Maritime Strategy for Medium Powers*, Croom Helm Ltd., Kent, 1986, p. 21.

12 Hill, *Maritime Strategy for Medium Powers*, pp. 22-24.

13 CIA World Factbook, 'Country Comparison: Population', *CIA World Factbook*, July 2009, viewed 1 July 2009, <https://www.cia.gov/library/publications/the-world-factbook/rankorder/2119rank.html>

14 Hill, *Maritime Strategy for Medium Powers*, pp. 20-21.

15 Cumpston, I., *Australia's Defence Policy 1901-2000*, Union Offset Co. Pty Ltd, Canberra, 2001, p. 230.

16 Department of Defence, *Defending Australia in the Asia Pacific Century: Force 2030*, pp.72-73.

17 Ibid., 114.

18 Friedman, *The Next 100 Years*, p. 44.



The Australian White Ensign of HMAS SUCCESS against the Sunset in Qingdao, China

“Will and Vision” - some would see Australia as having strategic vulnerability

BY LUDWIG VON GRESS

Already in 1911 Admiral Sir Reginald Henderson said - “being girth by sea and having no inland frontiers to protect, Australia is compelled to regard the sea itself as her first and last line of defence”.

Even today anybody interested in the defence of Australia ought to look at least at the map, but preferably at the globe with a pair of dividers. Adjusting the same, at the extremely conservative speed of 20 knots per hour; ie: about 800 nautical miles per day and guessing the original points of departure of our potential enemies, one gets somewhat depressed. It is perhaps unnecessary to remind readers that fleet oilers and other supply ships can be prepositioned without anybody taking much notice. I would not recommend doing the divider exercise for the Sukhoi Su-30 fighter-bombers recently acquired by Indonesia, because that is particularly depressing. Not just depressing, but

horrifying. Some would call it strategic vulnerability.

ALONE

If we assume that the hitherto successful Australian defence policy “she’ll be right, mate” will save us again in a future conflict, there is no need to do anything more than what Australia is doing now. A gaggle of planes, a clutch of tanks and a pod of ships, just enough to send a handful of military personnel here or there as our current allies may from time to time for propaganda purposes ask. An occasional humanitarian mission reminds the media that we have some non-civilian structure and we have young people (hopefully not all) joining the Navy believing the greatest danger they would be facing would be delivering cornflakes to flood victims. No worries, America will provide.

She may not. After decades of abuse

in our media, Fortress America may prove to be as useful for the defence of Australia as Fortress Singapore of unblessed memory. Firstly, US and Australian interests do not coincide. What does Australia have that USA couldn’t be without or get somewhere else? Pine Gap? Tindal Air base? Secondly, in the case of larger conflict the United States would have other worries, primarily their own defence, then Middle East oil, then Europe, then ... who knows. Australia might come to be considered in the context of denial of our resources to the enemy, but the time-honoured tactic of burnt land may not be exactly our preferred option. Even this assumes a friendly, long term vision, democracy defending US administration. Should it turn isolationist, appeasement or otherwise morally bankrupt, we would be truly alone.

In that context it could be useful to remember that following an ordinary,

Will the Alliance be enough? USS Nimitz’s Maritza Chavez explains operations to ABET Sam Whitfield from HMAS Toowoomba during an exchange programme. (USN photo)



“Will and Vision” - some would see Australia as having strategic vulnerability

democratic election Australia within two weeks of the Whitlam / Barnard duocracy approved annexation of the Baltic republics by the USSR, recognised the murderous regimes of communist China and of aggressive, expansionist North Vietnam.

A self-absorbed, politically correct United States would be obviously bad, but not necessarily the worst scenario, and I would like to say emphatically that it is my fervent wish it will remain only hypothetical.

However, with the US out of the equation, its satellites also would be out of the equation. As it is, we rely on the goodwill of America to pass on to us whatever information they may think we could need. We also depend on the goodwill of China and Russia in not shooting the satellites down. Otherwise, as far as I am aware, a couple of 40 year old F-111 patrols either over 8,148,250 km² of our Exclusive Economic Zone or, more likely just the Gulf of Carpentaria in order to save fuel for afterburner fly passes on Australia Day. I realise that the RAAF is doing the best it can with the resources available in a situation when no serious military danger exists at least in a foreseeable year or so.

It may well be that our naval and other intelligence monitors every junk between Hobart and Vladivostok and nothing flying, submerged or floating can surprise us. Somehow I do not think so, and if there is anything to learn from history, it is that politicians do not wish to believe bad news. Even the best intelligence would be ignored, further reducing our response time.

ENEMY

Enemies? What enemies? Great Southern Quarry Inc, formerly known as Australia would not have any enemies and the brave Australian lamb will lie happily ever after next to the docile Chinese lion. That might be true

after the Second Coming, but let's look at more realistic scenarios.

Dictatorships can rearm and militarise much faster than democracies. Regimes change, sometimes overnight and can become expansive and aggressive very quickly. Just a few examples - Napoleon's France in 1793, Lenin's Russia in 1920, Hitler's Germany in 1938 and Sukarno's Indonesia in 1963. Friends can become enemies. Japanese sailors were happily protecting our troop ships on the way to the Middle East and Europe during WWI yet a few years later equally happily were sinking them, including those marked with a red cross.

During the Cold War we often heard from appeasementists that the peaceful people of the Soviet Union, who lost so many during WWII, do not wish war. That was not of much help to Hungarians or Afghans. Germany, with its total military WWI casualties (including POW) approaching seven million, ought to have remained peaceful forever. True, in June 1945 hardly any German believed that attacking Poland was such a good idea. Simply, peace loving Indonesians or Chinese would have very little say should their rulers decide that Australia is a feasible target.

Great hypocrite Mao, who murdered 80 million of his brethren, still has his overblown picture reverently hanging at Tiananmen Square and, in the way reminiscent of the democracies dismissing a clear war blueprint in *Mein Kampf*, unmistakable and openly stated belligerent intentions of the Chinese politburo are ignored. In whichever way left-wing commentators may turn it, China is a potential enemy of Australia. Not the Chinese people, but the faceless, spineless apparatchiks of the current governing clique. Of course, as long as we sell uranium ore, iron ore, bauxite, coal and natural gas at the prices China considers benign,

and allow Chinese Army geologists to prospect for anything else useful we may have overlooked underground, why would China bother? Well, perhaps for ideological reasons.

Indonesia is, to put it mildly, not very stable politically and is busily rearming and modernising its armed forces. To be fair, an Indonesian watching our foreign politicking could be forgiven for not trusting us. There does not necessarily need to be a great divergence in ideology or religion, though the fact that Indonesia is a very large Muslim state and Australia not yet lingers in the mind.

The future Soviet Re-Union will be busily expanding its “near and not so near abroad” for some time yet. Still, the opportunity to pre-empt Chinese expansion into an America-less vacuum may prove to her too tempting to dismiss her as a potential enemy.

SOLUTION

I do not believe that a proper reaction to the forthcoming unpleasant geopolitical situation is to learn Mandarin and sew (sorry, buy Chinese-made) white flags. I believe that Australia, even with its faults, is worth preserving and thus fighting for.

Australia's hitherto successful “she'll be right” defence policy just will not do. At the present time, Australia has neither an option of the Swiss defence policy – “leave us alone or you will never see your money again”, nor of Israel defence policy – “leave us alone or you will never see anything ever again”. Australia has no banks of consequence and no nuclear weapons.

Credible defence obviously requires close integration and cooperation of all three parts of well equipped and trained armed forces. The army ought to be capable of a rapid and decisive response, i.e. be able to get to any part of Australia before the enemy does and in numbers likely to make a difference,

for whatever our enemies might lack, it is unlikely they would lack manpower. The Royal Australian Air Force ought to have dispersed and defensible airbases, enough pilots and planes outclassing those of the enemy and the Royal Australian Navy ought to... Let's stop dreaming. For various and complex reasons, mostly relating to the size and mentality of our population, Australia's ability to create and maintain a serious defence capability is limited.

I believe a new approach is needed. That a fight on somebody else's territory is much preferable is known at least from the Carthaginian Wars and at least from that time it is known how essential sea power is. Napoleon, Hitler and the USSR never learned. Even better is not to have to fight at all. That state of affairs is achieved not by weakness, but by strength, sufficient to make the opponent think thrice. Wars start when one side is convinced it would win. Optimism, feelings of invulnerability, of assured victory, not the arms race, leads to aggression.

We can not compete militarily with China, and not even with Indonesia. Australia has to acquire a credible deterrent force, such as is represented by nothing else but nuclear-powered and nuclear-armed submarines. There is no need for ballistic missiles - cruise missiles such as Tomahawk Block IV would do. I believe it is unnecessary to discuss the disadvantages of land based or aircraft-carried nuclear weapons; the superiority of submarines in that regard is obvious. Admittedly, the lease of two or three second hand nuclear submarines by the USA to us would be a rather tough test of the friendship and stretching of the trust somewhat, but the United Kingdom, as far as I am aware, has none to spare. After all, if the United States could be assured they would not be used against them and that the blueprints would not be sold to



our main trading partner, it would be to their benefit.

For some people anything nuclear, or for that matter anything above 4th grade science, is frightening. They would not allow H₂O past their lips, they trust only organic, free range water. However, even ex-PM Keating, never noted for any sensible thinking, said in his brighter moment recently (24 August 08) that there is no reason for non-nuclear states not to acquire nuclear capability, as long as those already possessing it show no inclination to disarm themselves.

If the biggest bullies on the block, armed to the teeth, were to get together and say nobody else ought to have means of self-defence, because it could be dangerous, any sensible person would laugh. Yet when such a pact is called The Treaty on the Non-proliferation of Nuclear Weapons, some believe it has got something to do with peace. China, with a 1,330,044,605 people (Oct 2009), multi-million men standing army, lifestyle only a Bangladeshi would envy and, at least according to their propaganda, with an overabundant supply of everything under the sun, is so scared of attack

it builds atomic weapons at an unprecedented rate. Yet Australia is expected to cross its fingers.

I realise that submarines require high technology communications, which Australia is unlikely to possess and in the "alone" scenario, unlikely to have access to. Nevertheless, the lack of proper communication might make our nuclear response more unpredictable, thus greater deterrent. A little bit of irrationality works wonders with bullies.

Annoying a nuclear tipped echidna would not be worth the hassle.

PEOPLE

If the news that some of our six conventional Collins class submarines, needing about 40 submariners each, have to be partially manned by US Navy personnel are true, then there is something seriously and drastically wrong with our approach to defence. (A nuclear submarine would need approximately triple that number.) The defence of Australia is too important to leave to the experts and politicians who believe the greatest danger to Australia would be their non-election.

The Royal Australian Navy seems

Sailors aboard the Ohio-class guided missile submarine USS Florida "bring her to life" during a return to service ceremony. Florida is the second US sub to undergo conversion to the new SSGN designation. The nuclear powered submarine has the capability to launch up to 154 Tomahawk cruise missiles, conduct sustained Special Forces operations and carry other payloads, such as unmanned underwater vehicles (UUVs), unmanned aerial vehicles (UAVs) and Special Forces equipment. (US Navy photo by Photographer's Mate 3rd class Clark Desire)

“Will and Vision” - some would see Australia as having strategic vulnerability

to suffer the most. Though TV series certainly help and the occasional media excitement as e.g. when *HMAS Sydney* (II) was found, does no harm, the public generally is hardly aware of the Navy's existence and the average young man can't see beyond the tip of his surfboard. In order to create an Australian maritime mentality it would help if the Government stopped treating sailing and boating generally as a luxurious pastime to be taxed. It would help, if the government actively and generously supported Navy cadets. It would help, if the government actively and generously supported an Australian merchant navy, now practically nonexistent, by, for example, tax relief for Australian companies owning Australian-manned commercial ships. It ought to ignore the so called level playing field myth, to which everybody but Australia pays just a lip service. After all, I think it had been proven quite conclusively some time ago that the earth is not level, but round.

Of course, it would also help if the government diametrically changed its treatment of veterans. The current practice simply is to wait until all but a handful dies, and the survivors then provide photo opportunities for politicians on Anzac Day. However, in the meantime the might of the Defence Department is employed to drag the veterans through every conceivable administrative obstacle, perhaps in order to save money for feel good recruiting advertisements. In fact, I would be surprised if anybody would want to join the Navy after reading of the Veterans' Struggle for Recognition in chapter 7 of Mr. Pfennigwerth's book. Our treatment of defence personnel is shameful.

The only alternative to the manpower scarcity is obviously conscription. It is difficult to comprehend why anybody, enjoying

the undoubted benefits of living in Australia, could object to young men and women devoting one year of their lives (slightly over 1%) to preparation of the defence of the lifestyle, so far secured for them by their fathers and grandfathers. Naturally, those who would like to improve our lifestyle to reach the level of communist China or democratic Zimbabwe, would object. The Defence department bureaucrats may be frightened of additional work and so may a few defence forces officers, who definitely would have to work harder. Media would be against, unless convinced that this is in order to defend ourselves against USA. But the Australian people would be in favour.

COST

Would China finance Australia's rearmament? Hardly. We would have to pay ourselves. The costs would be painful, but the costs of fighting the chimera of global warming would be far greater, not to mention that it would enfeeble Australia, perhaps irretrievably.

Despite the annual “no foreseeable danger” defence budget dance, when it, i.e. that not foreseen danger hits the fan, money are either found or printed. In the past, Australians were dying for lack of training and proper equipment and I am afraid it would be the same today.

In the very short term sea transport would not be absolutely essential (we could tighten our belts for a few months) but whilst we could import i-pods and similar necessities by air, we could hardly continue exporting our iron ore, wheat or coal. Almost 100% of our exports (by volume) goes by sea and only a minuscule proportion of that under the Australian flag. A shameful situation indeed, of which our various Transport Ministers seem to be totally oblivious. The length of any conflict is always a great unknown,

but they usually last much longer than anticipated. The Royal Australian Navy, even if it were to get all the promised surface vessels on schedule, would not be able to protect our sea lanes without being backed by an underwater threat of disproportionate retaliation. The costs of leasing, manning and maintaining a nuclear deterrent would represent a fraction of lost trade.

XXI century Australia, with its vast mineral resources, seems to be emulating XVII century Spain with its South American gold – wealth in, wealth out, not much to show for it. For the opposite, positive example we can look at Singapore. India, with US\$2,700 Gross Domestic Product per capita is currently building its own nuclear submarine. Our GDP per capita is US\$36,300 (2007 CIA estimates). India's GDP of course dwarfs ours, \$2,989 trillion opposed to \$761 billion, but still – we would not need other defence equipment in such large quantities. We have much to lose.

WILL

USN Rear Admiral J.C. Wyllie once said, “The ultimate objective of all military operations is the destruction of the enemy's armed forces and his will to fight”. Cynics could say that our politicians are doing the first and our media the second.

Long term considerations, such as the strategy of our defence undoubtedly is, are mostly beyond the attention span of our elected representatives. Pleasing the media and pleasing, or at least bamboozling, the electorate is of paramount importance. Allocating money for defence produces few votes. Even those with an interest in defence matters realise that the election probably will come before any military conflict and their self interest takes precedence. For every Churchill is there is a full legislative chamber of Chamberlains.

With the exception of our sporting achievements, our media take malicious delight in denigrating anything they don't understand. With a few honourable exceptions, our journalists, whose IQ is insufficient to comprehend the difference between carbon and carbon dioxide, can't be expected to know the difference between a submarine and a submachine gun. Unfortunately, there is tremendous gap between the will of the people and the wishful thinking of elites or rather a group of semi educated simpletons, calling themselves elites, simply because they are able to manipulate the media. Nevertheless, I believe that in a democratic society sooner or later the will of the people will prevail. It would need significant effort on the part of all, who remember history and are able to see consequences of the current sorry state of the Australian Defence Forces. I do not think there is much time left.

I am painfully aware that in stating the sequence: no will – no maritime defence – no defence – no survival, I am saying nothing new. All that had been said and written before. It is obvious to all from pram tacticians (even a baby knows that a loud scream produces milk) to wheelchair strategists, including, I venture to say, even to the defence bureaucrats in front of their computers. If only it was obvious to our politicians. 🇦🇺



Ludwig von Gress was born in communist Europe, became an industrial chemist, and later, in Australia, a lawyer. He is interested in defence matters on a macro scale, with a cavalry "devil may care spirit" inherited from his grandfather and cautious cost effectiveness approach from his guerilla father. He sometimes despairs that he may be the only one taking the defence of Australia seriously.

References

- Geoffrey Blainey – *The Causes of War*, Sun Books Pty Ltd 1977
- David Stevens – *Maritime Power in the 20th Century The Australian Experience*, Allen & Unwin 1998
- Peng Guangqian – *China's National Defence*, China Intercontinental Press 2004
- Ian Pfennigwerth – *Tiger Territory – The Untold Story of RAN in SE Asia*, Rosenberg Publishing Pty Ltd 2008
- CDRE Lee Corder AM – „Australia A Maritime Nation?“, The Navy, July-September 2008
- Greg Sheridan – „Anzac spirit but not battle ready“, The Australian, 14.08.08



HMAS Toowoomba's boarding party climbs into the Rigid-Hulled Inflatable Boat (RHIB) during workups

Cochrane's Dog, Individual Courage And Service Loyalty

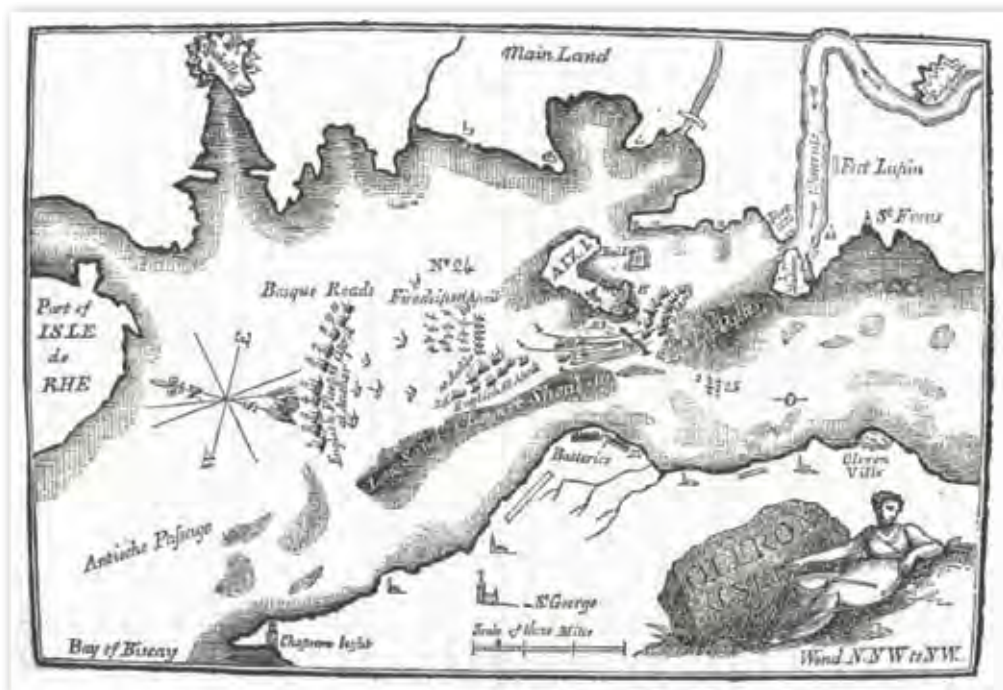
BY GREGORY P GILBERT

The French admiral was an imbecile, but yours was just as bad. I assure you that, if Cochrane had been supported, he would have taken every one of the ships. Napoleon Bonaparte¹

The Battle of Basque Roads was a major naval engagement that took place 11-12 April 1809 when a British fleet under the commander in chief, Admiral Lord Gambier, launched a fire-ship attack against the French squadron in its fortified anchorage near the Isle d'Aix just south of the French naval base at La Rochelle.

The attack was led by a young Royal Navy (RN) captain – Thomas, Lord Cochrane (later the 10th Earl of Dundonald) - who, although lacking seniority, had influence at the Admiralty.² Lord Cochrane was an impetuous officer who characteristically exuded reckless courage, professional mastery, and the capacity to think outside the box. Not only did he prepare detailed plans for the attack, he developed a new form of explosive vessel (a fire-ship packed with about 1500 barrels of gunpowder) to destroy French ships.

Many, including Lord Gambier, believed that Cochrane's mission was 'a horrible form of warfare, and the attempt very hazardous, if not desperate.'³ Indeed, during the Napoleonic War, the fire-ship crews had to be all volunteers for 'no one was compelled to go, as the enemy by the laws of war can put anyone to death who is taken belonging to a fire-ship.'⁴ Gambier also advised the Admiralty that in his opinion his heavier ships could not be effectively employed against the enemy and he doubted that Cochrane's new 'explosion vessels' would have any practical effect.



At the time there were two factions within the British fleet, one conservative and the other radical, and support for Gambier's or Cochrane's opinions tended to split along factional lines. This ultimately led to one of the nastiest disagreements within the RN and ultimately contributed to the end of Cochrane's illustrious career in British service.

Lord Cochrane was a politician as well as a naval officer.⁵ He entered the House of Commons in 1806 with a reform agenda and the desire to expose the naval abuses which were then rife. In 1807 he received orders to join the fleet as captain of the 38 gun frigate *Imperiouse*; some politicians thought it was wiser to give him work abroad than to suffer his interference at home. He was an active commander who was subsequently reproached for spending more on sails, stores, gunpowder, and shot than any other captain in the service. But it was the Battle of Basque Roads that was to turn Lord Cochrane into a national hero. He was responsible for preparing and executing the action that was to

become one of the most brilliant deeds in the naval history of England.

On the night of 11 April 1809 Cochrane, accompanied by a handful of volunteers, led the first of three explosion vessels against the French. Becoming unexpectedly stuck on the French boom protecting the Aix Roads anchorage, he decided to light the fuse anyway and the crew escaped in a small boat. According to London Newspapers as they pulled away he heard a dog barking on the explosion vessel; their ship's mascot had been left behind. Cochrane promptly ordered their boat to return and he rescued the dog in the nick of time. Ironically this act of animal kindness inadvertently saved Cochrane's life. If he hadn't gone back for the lucky mascot, their boat would have been directly under the path of the explosion vessel's debris most of which blew over the crew's heads and plummeted into the sea ahead of them.

The French reports stated that the explosion vessels did little harm but they were followed by a squadron of fire-ships led by Commander

Wooldridge, RN. Although many men were killed and many more suffered from burns, five or six fire-ships penetrated the roadstead and disrupted the French defences. Indeed Lord Gambier's despatch describing the battle credited Wooldridge's vessel the *Mediator* with breaking the boom. Unable to see clearly in the smoke, the panicked and inexperienced French gunners fired into their own ships. Some ships cut their anchor cables to escape the fire-ships, and without sails, the ships piled up on the nearby shoals.

Early on the morning of the 12 April 1809, Cochrane believed that the time for decisive action by Gambier's main British fleet was at hand. Throughout the morning he hoisted a series of signals to the Admiral recommending immediate action but Gambier 'deemed it unwise to run any unnecessary risk, seeing that, in his view, the object sought had already been practically attained.'⁶ Cochrane himself describes the subsequent events.

I did not venture to make sail lest the movement might be seen from the flag-ship, and a signal of recall should defeat my purpose of making an attack with the *Impérieuse*; my object being to compel the Commander in Chief to send vessels to our assistance.' ... 'It was then a question with me whether I should disappoint the expectations of my country, be set down as a charlatan by the Admiralty, whose hopes had been raised by my plan, and have my future prospects destroyed, or force on an action which some had induced an easy Commander in Chief to believe impracticable.'⁷

The Battle of Basque Road, off La Rochelle (Naval Chronicle No. 21, 1809)

At 1:45 pm the *Impérieuse*, being hotly engaged with three grounded French ships of the line, signalled 'The ship is

in distress, and requires to be assisted immediately'. Assistance in the form of two British ships of the line and five frigates did not arrive until around 3:40 pm that afternoon, but these ships soon opened a heavy fire on the French. Much damage was done to the French fleet although it was not destroyed. Cochrane tried to continue the action on the morning of the 13 April but was repeatedly recalled by Lord Gambier who wished to end the attack. Cochrane's son provides a somewhat biased version of events.

Lord Cochrane had already overstepped the strict duty of a subordinate, though acting only as became an English sailor. The fire-ships with which he had been ordered to ruin the enemy's fleet had partly failed through the error of others. He did force on some fighting, which was altogether disastrous to the enemy, and rich in tokens of his unflinching heroism; but it was in violation of repeated orders, dubiously worded, from Lord Gambier, and, when at last an order was issued in terms too distinct to allow of any further evasion, he had no alternative but to abandon the enterprise. He was at once sent back to England, to be rewarded with much popular favour, and with a knighthood of the Order of the Bath, conferred by George III., but to become the victim of an official persecution, which, embittering his whole life, lasted almost to its close.'⁸

Upon returning to London, Cochrane proposed to express his displeasure with the Admiralty as well as in Parliament. He was certainly upset by the Admiralty's decision to attribute all the merit of their success during the Battle of Basque Roads to Gambier, who Cochrane believed had not only not participated in the battle directly but rather had gone out of his way

to prevent the fleet from destroying the French when they had the chance. In his own words, 'The only victory gained by Lord Gambier in Basque Roads was that of bringing his ships to anchor there, whilst the enemy's ships were quietly heaving off from the banks on which they had been driven nine miles distant from the fleet.'

When it was decided to honour Lord Gambier with a Parliamentary vote of thanks, Lord Cochrane, as member for Westminster, decided to oppose the motion. It was certainly normal practice that the commander in chief of the British fleet be credited with a naval victory gained under his command, while his subordinate officers and sailors understood that the commander in chief's acknowledgement was also intended to recognise their individual efforts and increase the honour of the service as a whole.

Normally the complaints of a subordinate RN captain would have been handled within the service,

The heroic figure of Captain Lord Thomas Cochrane, RN from a portrait of 1809 (RAN)



Cochrane's Dog, Individual Courage And Service Loyalty

but Lord Cochrane, as a member of parliament, had an alternative avenue for raising his grievances. Two versions of the Battle of Basque Roads were used for political purposes to support the conservative and radical factions in Parliament, and Lord Gambier's honour was being questioned. He demanded a court-martial to clear his name and to have Cochrane's insinuations thrown out of court.

According to Cochrane's supporters, 'The history of this court-martial, its antecedents and its consequences, furnishes an episode almost unique in the annals of official injustice.' Several members of the court showed strong partiality in favour of the accused and it was not a great surprise when Gambier was most honourably acquitted. Lord Gambier eventually received the thanks of both houses of Parliament, although it was not unanimous.

The unofficial opposition of many powerful people prevented Lord Cochrane being appointed to command another ship, and he became embittered. After being unfairly targeted in a stock exchange fraud, Cochrane decided to leave Britain and make his career elsewhere. His later exploits during the War of Greek Independence and the liberation of South America are now the stuff of legend. He finally returned to Britain in 1832 and became an admiral in the Royal Navy.

Cochrane's actions would be totally unacceptable in a modern navy, but we can examine the decisions of others in action, such as this example of Cochrane and Gambier, to help us better understand how we would or should act if we were in similar circumstances. The Battle of Basque Roads is the archetypal example of a young, impetuous, hot-headed commander - someone who can get things done despite the

consequences – working with a senior, more experienced, commander whose responsibilities stretch far beyond those imposed by any immediate battle –including perhaps limitations in personnel, training, intelligence, logistics and capability. Such historical examples help us to better understand our navy values such as courage and loyalty. Such abstract terms are never black and white in reality rather they are too often various shades of grey. 🐶



Dr Gregory P. Gilbert previously worked within the Department of Defence (Navy) from 1985 to 1996, as a naval designer, and subsequently as a Defence contractor. He has broad research interests including; the archaeology and anthropology of warfare; Egyptology; international relations - the Middle East; maritime strategy and naval history. His excavations include Helwan, Hierakonpolis, Koptos and Sais in Egypt. He is currently furthering his naval historical interests as a Senior Research Officer in the RAN Sea Power Centre – Australia.

(Endnotes)

1. Napoleon's comments on the Battle of Basque Roads are from B.E. O'Meara, *Napoleon in Exile*, Vol. II, Simpkin & Marshall, London, 1822, p. 292.
2. For a short biography see the Royal Navy web page on Admiral Lord Thomas Cochrane, 10th Earl of Dundonald 1775-1860, <www.royalnavy.mod.uk/server/show/nav.3881> (8 February 2009).
3. In R. Harvey, *Cochrane: The Life and Exploits of a Fighting Captain*, Carroll & Graf, New York, 2000, pp. 107-8.
4. Taken from the account by William Richardson in J.E. Lewis, ed., *Life Before the Mast*, Castle Books, Edison, NJ, 2002.
5. See Thomas, Tenth Earl of Dundonald, *The Autobiography of a Seaman*, Volume 1, Richard Bently, London, 1860, pp. 338-402.
6. Quoted in W.L. Clowes, *The Royal Navy: A History from the Earliest Times to the Present*, Sampson Low, London, 1900, p. 264.
7. Dundonald, pp. 386 & 390.
8. Thomas, Eleventh Earl of Dundonald, & H.R. Fox Bourne, *The Life of Thomas, Lord Cochrane, Tenth Earl of Dundonald*, Richard Bently, London, 1869, Chapter 1.

BRAVING THE BATTLE, WINNING THE WAR : *FIGHTING PIRACY IN THE GULF OF ADEN*



Nazery Khalid, Senior Fellow at Maritime Institute of Malaysia warns that until problems on land are addressed, the threat of piracy in the Gulf of Aden would not subside

"Well then, there is not a moment to lose!"

(Captain Jack Aubrey in 'Master and Commander')

SCOURGE AT SEA: PIRATE ATTACKS IN THE GULF OF ADEN

The spate of piracy attacks on merchant ships plying the Gulf of Aden (GOA), a crucial trade waterway and a vital sea line of communication, has been commanding international attention of late. Located near the world's most prolific oil region, the GOA facilitates much of the world's seaborne oil transport and also enables the transportation of a significant volume of seaborne trade between East and West.

Given its strategic importance to world trade, it is imperative that this waterway is protected from security threats that may impede the smooth flow of shipping traffic passing through it. Any disruption of the transportation of goods in this busy shipping lane can hamper the movement of goods across the global supply

For this reason, the world is rightfully anxious of the unrelenting pirate attacks on ships traversing the GOA. The kidnapping of crew members may endanger their lives. Attacks on ships carrying crude oil in this critical maritime route may cause mayhem to the global economy. The cost to shipowners who have to pay ransom to release their crew and ships, fork out higher insurance premium



to cover ships passing through the treacherous waters and bear the delay in shipment of goods and disruption in shipping schedules is significant. The cost is magnified amid the tough economic conditions in these times of slumping demand for shipping services and global economic woes.

It is a matter of growing global concern that the attacks on merchant ships by pirates operating in the GOA have not shown any signs of relenting, although efforts have been taken by the international community to neutralize their threat. Despite the passing of a UN resolution to allow a coalition force of international navies to conduct patrol and thwart piracy in the GOA, the buccaneers in the area appear to be unperturbed and have carried their business as usual. Even after the daring rescue mission to free the captain of *Maersk Alabama* by the US Navy that killed three pirates and the storming of a yacht by French Commandos, the activities of pirates in the GOA have not showed any signs of slowing down.

While piracy in the GOA is not a new phenomenon, the frequency

and intensity of attacks in this vast area have increased dramatically in recent years. A combination of factors contribute to this - the main one being the dysfunctional state of Somalia, a littoral state of the GOA from which most of the pirates roaming the sealane hail. The breakdown in law and order and in enforcement in the beleaguered nation makes it difficult to monitor and secure the vast waterway from criminal activities. The perpetual state of conflict and the lack of education and economic opportunities in Somalia have driven youths - who are low on hope and high on angst - to take to the seas to earn money. The disenchanted among the population are easily recruited by powerful warlords who control certain areas in Somalia to join groups of sea bandits to hijack ships for ransom.

Beside the sorry state of affairs in Somalia, there are also several other factors which contribute to creating a conducive situation for piracy to foment in the GOA. Some of the pirates operating in the area consider themselves as a sort of modern-day

HMAS Toowoomba Boarding Party conducts a thorough and effective search of a pirate skiff, revealing a cache of weapons including a Rocket Propelled Grenade Launcher, six AK47 Assault Rifles, a G3 Assault Rifle and a large quantity of ammunition (Courtesy RAN)

BRAVING THE BATTLE, WINNING THE WAR : FIGHTING PIRACY IN THE GULF OF ADEN



Robin Hood in justifying their heinous act of extorting shipowners for money to release the kidnapped crew. These bandits are known to disburse their ill-gotten gains to their kin and people from their villages to buy food and supplies in a country where the economy and trade infrastructures are in shambles. Some pirates also see themselves as vigilantes whose attack on merchant ships plying the GOA are seen as a legitimate show of anger towards the irresponsible acts of foreign ships which dump toxic wastes and carry out illegal fishing in the waters. There are even bandits who legitimize their dastardly acts of taking ransom from shipowners as a form of charging 'toll' on ships sailing from the Mediterranean which pay fees to pass through Suez Canal but sail through the GOA without paying anything to the littoral states, hence bringing no economic benefits to the littoral states.

Not surprisingly, these pirates are hailed as heroes by fellow citizens who benefit from their ill-gotten gains and who have become jaded with the conflict that have wrought their country and the continued trespassing of foreign ships in the GOA. To the pirates, they act as the rightful guardian of the waters in the absence of a legitimate Government in Somalia, and to the people, the pirates are brave

defenders of the homeland who dare to stand up to foreign vessels violating the waters. The legitimacy given to the pirates by locals, who do not quite view them as the bad guys, adds another layer of complication to the discourse on the subject.

THE MODUS OPERANDI OF GOA PIRATES

Operating with impunity, pirates in GOA have proven to be a daring and highly organized lot. The way they conduct their operations and the tactical *nous* demonstrated suggest that they are not just swashbuckling opportunists who carry out sporadic attacks.

Media images of Kalashnikov-bearing pirates in skiffs, looking ragged and undernourished, belie their capabilities to take on large ships. These are among features commonly observed in piratical attacks in the GOA and their perpetrators which underline their structured approach and brazen nature :

- Backing by powerful warlords who supply them with funding and weapons to launch attacks. Some analysts have even suggested that these pirates receive financial and institutional support

from backers with vested interest who are based in other countries. A worrying possibility is that the pirates are doing the bidding for terror groups who 'commission' the pirates to carry out attacks and raise money from ransom payment to support terror activities.

- Mounting attacks from mother vessels acting as 'floating headquarters'. Having such bases makes their operations in the high seas and the ambitious scale of their sorties possible. Often, these vessels are fishing trawlers, although in a few cases, other types of vessels and of bigger size, believed to be painted over and retrofitted for decoy, have been used.
- Use of sophisticated weapons such as rocket propelled grenades and heavy assault weapons. The pirates are also known to be adept at handling radio equipment and sophisticated navigation systems such as GPS, which explains their knack of knowing where to attack, evading naval patrol vessels and making a quick escape thereafter.

Merchant Ship Dubai Princess applying anti-piracy measures (Courtesy ADF)

- Ability to mount vessels of considerable height and size, and seize them. This suggests that they have been given some form of highly specialized training. Some quarters have even raised the chilling possibility of the pirates receiving special forces type training to carry out daring raids on large vessels such as the *Maersk Alabama* container vessel and the *Sirius Star* supertanker carrying crude oil. This begs the question whether there exists collaboration between security personnel and the very bad guys they are suppose to thwart.
- Retreating to their bases onshore once they have hijacked vessels. Once the pirates have taken the hijacked ships to bases known to be piratical bases such as Eyl and Hobyo on Somalia's Indian Ocean coastline, they then blend in with and disappear into the community, making them and the hostages hard to trace. This gives the pirates an advantage in negotiating for ransom, knowing that it would be difficult for security forces to attempt a rescue operation of the hostages whose whereabouts are unclear.

RIPPING OUT THE ROOTS OF PIRACY IN GOA

While the efforts of international navies to provide a presence in the GOA to deter pirates are lauded, they alone are insufficient to eliminate the threat of piracy. Piracy is not just a crime but a manifestation of a complex problem encompassing many aspects. The root causes of piracy can be traced to socio-economic, political, ideological and geo-strategic dimensions, among

others.

Although recent actions by international navies to free hostages kidnapped by pirates have been lauded, a lot more needs to be done to eradicate this modern-day menace. Confronting the pirates at sea is only one part of the equation to neutralize the threat of piracy. The attacks at sea are only the symptom of a deeper malaise found onshore. A comprehensive approach is needed to identify the causes on land that give birth to this scourge and to prescribe the remedy to prevent piracy from taking roots.

To be sure, it is a huge challenge to keep the peace in the vast maritime area like the GOA which borders a country like Somalia, effectively a failed state. Somalia does not have a legitimate government with the necessary resources, socio-economic planning, legal and institutional infrastructure, technical capabilities and state apparatus which are essential tools to fight a trans-boundary, offshore crime like piracy. Therein lies the biggest, most important task to nip piracy in the bud : to provide a semblance of stability and a modicum of order in Somalia to enable its government and people to focus on nation building. Until a semblance of law, order and governance is restored and socio-economic development is generated in Somalia, there is little hope of neutralizing the threat of piracy effectively. Nations must work together and provide financial and technical assistance to Somalia to help the country get back on its feet.

The importance of collaboration among the navies present in the GOA is underscored by the subsequent attack on a US flagged vessel after the release of the *Maersk Alabama* captain and the shootout that killed three pirates. In reaction to the death of the comrades, pirates sought revenge on

American crew members by mounting an attack on the American freighter *Liberty Sun* without the intention of seizing the ship or holding its crew hostage. The escalation of what is essentially a robbery crime at sea – as evidenced by the *Liberty Sun* incident – has added another dimension to piracy in the GOA. Pirate attacks motivated by revenge pose serious threat to the safety of seafarers. This is a problem which the US cannot handle or solve on its own without getting assistance from other navies patrolling the area. It would not be possible for even the world's most powerful navy to conduct patrol on its own and establish a 24/7 presence to protect all of its ships passing through the sprawling gulf. To depend on one naval force alone to look for pirates in a vast area like the GOA is akin to looking for a needle in a haystack.

A notable aspect of the work of the international navies patrolling the GOA is their tendency to protect ships registered under the flag of the respective countries and to secure the release of crew who are their citizens only. A worrying mentality of 'to each nation its own' seems to prevail in the GOA. This is not helpful in securing a vast area which hosts ships from various flags manned by crews from many nationalities. Piracy, a trans-boundary crime, affect all countries with stake in maritime trade, hence the problem cannot be solved by way of nations adapting a posture of 'rescuing one's own citizens' alone.

The situation in the GOA has reached a critical enough level that demands naval forces to work hand in hand and set aside the 'going it alone' mentality to prevent pirates from picking and choosing victims based on their nationalities. Navies present in the dangerous waterway must act in concert to repel pirate attacks on all ships regardless of their flags and crews

BRAVING THE BATTLE, WINNING THE WAR : FIGHTING PIRACY IN THE GULF OF ADEN

and not just protect their own ships and nationals.

It is also not enough to just raid pirates' boats and ships to thwart their attacks. It would be futile for navies to just confiscate their weapons and equipment only to throw them into the sea and to let the criminals off scot free, as always is the case. What is needed is the political will among nations to take detained pirates onshore and try them in a court of law and prosecute and punish them. France has made efforts to bring arrested pirates in GOA to Paris to be tried in French courts. The US has followed suit by taking the arrested teenage pirate who held the captain of *Maersk Alabama* into American custody to be prosecuted. It is hoped that such resolute follow-up actions can be sustained as they can act as a powerful deterrent for other pirates from carrying out their dirty deeds in the GOA.

BRAVING THE BATTLE, WINNING THE WAR

Measures such as sending navies to patrol the GOA, killing pirates and prosecuting them are not without controversy and may lead to potential political, legal and geo-strategic entanglement. However, in the face of bold and increasing attacks by pirates on merchant ships traversing this crucial sealane, the world cannot afford to just sit by and not act. The situation has reached such a pandemic level that not taking action is no longer a viable option. In fact, the initial lack of reaction on the part of the international community during the beginning of the outbreak of piratical attacks in the GOA had emboldened the pirates into launching more attacks and becoming more violent and daring in their acts.

It would be up to the legal experts to determine whether there is legal justification to use lethal force against pirates and to avoid any

legal complications and violations in the process. In the meantime, the navies, shipping industry and other stakeholders need to increase their vigilance to ensure that the crews, ships and cargos sailing through the GOA are protected.

While no doubt that an unusual, critical circumstances like the piracy in the GOA presents a set of unusual, urgent response to blunt the threat posed by the pirates, we must not lose sight of the equally important need to address the issues which contribute to the proliferation of piracy in the area. On one hand, strong, resolute actions are needed to win the battle against pirates at sea and to send a strong message to the marauders that their acts will be meted out with stern punishment. On the other hand, a more nuanced approach is required to understand the complexity of the piracy problem, to identify its root causes and to provide the remedy to stamp out the causes of this dastardly crime. This would require a holistic approach in addressing the multiple problems on land and the disenchantment of the people that lead to them committing this heinous crime at sea. Only then can the war against piracy be truly and comprehensively won. 🌊



Nazery Khalid is Senior Fellow at the Maritime Institute of Malaysia <www.mima.gov.my> The opinions expressed are his own. He can be contacted at <nazery@mima.gov.my>



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HMAS Sydney & Ship's Company 1941

THESE PHOTOGRAPHS WERE RECENTLY FORWARDED BY MICHAEL WATERHOUSE. THEY SHOW SOME PREVIOUSLY UNSEEN VIEWS OF *HMAS SYDNEY* AND SOME OF HER SHIP'S COMPANY IN 1941, THE YEAR OF HER LOSS TO THE RAIDER *KORMORAN*.

MICHAEL'S UNCLE KEITH WATERHOUSE HELD THE RANK OF PAYMASTER-LIEUTENANT IN *SYDNEY*. HE IS THE THIRD FROM THE RIGHT IN THE CLOSE UP OF THE *SYDNEY* OFFICERS. HE WAS SERVING IN *SYDNEY* DURING THE ENGAGEMENT WITH THE *BARTOLOMEO COLLEONI* AND GAVE UP HIS BUNK FOR AN INJURED ITALIAN SAILOR WHO LATER DIED. KEITH WAS POSTED OFF THE *SYDNEY* THE NIGHT BEFORE IT SAILED FROM FREMANTLE TO TAKE UP A POST ASSISTING CAPTAIN COLLINS, THE FORMER COMMANDER OF THE LIGHT CRUISER.

THE OFFICIAL IN THE CENTRE OF ONE OF THE SEMI-FORMAL PHOTO IS BRIGADIER GENERAL ALEXANDER HORE-RUTHVEN, FIRST EARL OF GOWRIE, VC, GCMG, CB, DSO & BAR, TENTH AND LONGEST SERVING GOVERNOR-GENERAL OF AUSTRALIA. 🇺🇸





Northern Trident 09

BY CAPTAIN PETER LEAVY

SHIPHANDLING CORNER

Between April and October 2009 HMA Ships *Sydney* and *Ballarat* completed Northern Trident, a circumnavigation of the globe. The deployment saw the ships operate in a number of unusual circumstances including ice, canal, lock and river navigation. This article outlines some NT 09 ship handling experiences from the FFG perspective. But first some ship specifics.

RAN FFGs have one right-handed controllable pitch propeller (CPP), and a single rudder. With only one propeller the Paddlewheel Effect is quite pronounced and will tend to take the stern to starboard, particularly with astern power ordered. They also have two Auxiliary Propulsion Units (APUs) forward which provide good control of the bow, although they are either “on” or “off”; they have no speed control. For close manoeuvring and ship handling the process of “Balancing Up” is often used, where the APUs drive the ship astern, the main engine drives the ship ahead (3-4 knots on the engine will counter two APUs running directly astern) and movements of the rudder and APUs can then move the ship laterally sideways. In the “Balanced Up” state movement ahead or astern are achieved by small increments ordered on the main engine.

LONDON

In London, *Sydney* berthed at the West India Dock in the Docklands precinct just short of Greenwich. The Thames River is tidal but the berth itself was accessed through a lock, which was quite tight. The transit up the Thames was a standard river pilotage, passing through the “Thames Barrier” which is designed to protect London from large tidal surges (see photo).

As *Sydney* approached the West India Dock the tide was flooding at just under one knot (timings into

and out of the locks are worked around the tide). Ship's speed was reduced and both APUs were lowered in good time. Two tugs were used – both powerful tractor tugs with one secured through the Bull Ring forward and one through the centre fairlead aft. The ship commenced a 90° turn to starboard to line up with the lock (perpendicular to the line of the river) early to compensate for the flooding tide. The APUs and rudder were both used for the turn, but most of the turning moment was provided by the two tugs, which also held the ship up against the tidal flow, gradually letting the tide carry her down adjacent the lock. Once lined up with the lock, ahead power increased to move the ship forward (the APUs were kept running throughout). Once the bow entered the dock, the tidal stream forward reduced which tended to ‘screw’ the ship. The APUs and forward tug were used to maintain the ship's bow along the centre of the lock with the aft tug and rudder used to control the stern. The aft tug was critical; the rudder in the balanced up state was not enough to counteract the tidal stream.

Unfortunately, the lock was not big enough to cater for *Sydney* plus two tugs, so the aft tug had to be cast off before the outer lock gate could shut. By this time the ship was far enough out of the tidal stream that rudder movements alone controlled the stern. Once in the lock the forward tug had no room forward and had to lie back on *Sydney's* shoulder. Hence, although she remained in the lock, she was not in any position to control the ship's bow so the ship



HMAS Sydney Thames Barrier (top photo and two photos below)



London, West India Lock visible (below)



was held in position by balancing up with the ship's main engine and APUs. This was one of the few times when I have split the APUs and controlled them independently. One was kept right astern, while the other was used between Red 170 and Green 170 to make very fine movements of the ship's bow left or right. In essence. Only very fine adjustments were needed as it was very easy to over-correct: one APU ten degrees displaced (when required) worked very well. I remained at the centerline pelorus throughout and used a headmark and ship's heading to hold the ship in position, although it would be equally valid (perhaps better) to proceed to the Bridge Wing to gain a feel for how much room there was on either side.

The lock itself was about 12m wider than the ship so it was quite tight, particularly as the bow entered and moved out of the tidal effects that still impacted the rest of the ship (which caused the ship to "screw"). However, once inside the lock the tidal stream was not an issue and the wind was fortunately very light, so it was relatively easy (although constant work) to maintain position and then temporarily berth port side to alongside the lock wall while the Dock Master secured the lock and adjusted water levels. There were no fenders along the lock wall, so we passed lines but allowed the wind, which was blowing the ship off the berth, to keep the ship's side about one metre off the concrete. Once lines were across we powered down while the Dock Master did his work.

The lock had a "three quarter lock" – essentially a gate three quarters of the way along (see photo) allowing two different water levels within the lock. Once *Sydney* and the forward tug were at the same level as the West India Dock basin, the forward gate was opened and we moved ahead about 25

metres and partially into the basin itself. We used the APUs to achieve this: the lines were progressively moved to bollards further along the wharf by the berthing party. The APUs worked well as the wind was keeping the ship off the side of the lock. By moving forward partially into the basin the 'three quarter gate' behind us could close and that last quarter of the lock was then lowered back to the Thames level to allow the after tug in. The three quarter lock was then raised back to the level of the rest of the lock, the three quarter gate opened and the tug re-connected to the ship.

Once the two tugs were re-connected and the ship balanced up, we moved ahead into West India Dock basin. We had to go ahead about two ship's lengths and then laterally to port about 50 metres to our berth – which (as luck would have it) was directly adjacent the headquarters of a major London newspaper, all of whose journalists seemed to take a coffee break and watch proceedings! Given the distance we had to move laterally, the two tugs assisted the sideways move with the APUs and rudder used for the final alongside.

Upon departing West India Dock there was insufficient room for *Sydney* to swing adjacent the berth, and so the ship was required to sternboard back through the lock. Given that the Paddlewheel Effect is more pronounced when making sternway, we moved back into the lock cold. That is, the main engines were not running and consequently the propeller was not rotating to produce any paddlewheel effect. This obviously required tugs and they were again positioned in



Baltimore - Looking astern from berth

exactly the same manner as for the arrival. One APU was trained right ahead and one right astern (another of the few times that I've split them). This allowed some degree of control over the ship's forward/aft movement, particularly as the aft tug (now the first to enter the lock) would lose some control as he approached the lock wall. I could use one APU to move astern and one to move ahead – although it is important to remember that there are no speed options on the APU's and there must be around 5-6 seconds between starting and stopping each of them so the electrical distribution within the ship is not overloaded. The key point here is that APUs are not ideal tools for inducing movement in tight situations, particularly without the main engine to compensate.

The tugs pulled the ship off the berth parallel and then the APU running aft was used to provide some sternway, although most of the movement was induced by the tugs. The ship entered the lock and secured alongside while the water levels were adjusted. Again the wind was blowing us off the berth, which protected the ship's side. The reverse procedure to get the aft tug back into the Thames was used with the ship stopping short of the three-quarter lock, the after tug being cast off and moving into that final quarter. The tug was then lowered back to the Thames level, the

gate closed and the three-quarter lock re-flooded so the ship could move 25 metres back to the outer gate. While in the lock the main engines were started, so when the gates to the Thames were opened the propeller was rotating. The movement out of the lock and into the Thames was mainly achieved by the tugs who were also the prime tools in rotating the ship through 90 degrees to face back down the river once clear. The APUs were not running and the engine was kept at stop (propeller rotating at zero pitch) until we were well into the Thames, so the whole evolution relied on the tugs. Once the ship had turned the tugs were cast off and a river pilotage commenced, passing through the Thames Barrier again.

Our berth in Baltimore was very similar to London where we had to do a 90 degree turn (to port this time) and enter what appeared to have been an old dry dock. It was similar to entering the West India Lock, except once we passed into the basin we berthed. Two complicating factors in Baltimore was the sides of the basin were not parallel, which can be deceptive, and we only had one tug. The tug was placed on the centreline aft and the ship remained balanced up throughout to provide control over the bow. This was particularly important during the sternboard departure. By having the ship balanced up, subtle moves of the bow can be made by training the APUs slightly. If they are not running and you need to move the bow (which you will have to do at some stage during a sternboard), you must contend with an immediate two knots of thrust when one is started which will inevitably lead to over correction.

PANAMA CANAL

Sydney and *Ballarat* sailed through the Panama Canal on the 11 August 2009, the first time the RAN has done so

since, coincidentally, *Sydney* did, some 18 years prior. Unlike the Suez Canal, which is essentially a single, long trench at sea level, transiting the Panama Canal requires passage through three distinct locks, one of which raises the ship 26 metres above sea level to a freshwater lake, and two that lower it again at the other end.

The entire movement of water through the lock system is gravity fed, so each time a lock is opened water from Lake Gatun (nearly 200 million litres each cycle) is released into the ocean, and not recycled. The width of the locks obviously limits the beam of ships that can use the Panama Canal, with a current maximum allowable beam of 33.5 metres being termed a "Panamax" ship. There is significant work underway to build more locks which are both wider and which will have pumps to reuse most of the water.

In preparation for the transit we came to anchor in Cristobal, on the Atlantic side of the canal. Once the formalities were completed the ship weighed anchor and proceeded to the first lock. Before approaching each lock 16 line handlers joined by boat, with half going to the Forecastle and half to the Flight Deck. As the bow enters the lock two small rowing boats approach either bow with messengers, which are hoisted up by the line handlers on the forecastle. They quickly heave in the messengers which are connected to steel wire ropes that are in turn connected to large electric locomotives (called "Mules" - see picture) that run on railway tracks along the dock wall. As the ship continues to enter the lock the process is repeated down aft, so that by the time the transom crosses the dock



Panama Transit

wall the ship is held in position in the centre of the dock by four locomotives, all controlled by the pilot on board the ship. Each locomotive can control the tension on the wire and can also drive forward to pull the ship through the lock, hold position, or run aft to check headway if required. Whilst they do not look like much, they proved to be extremely powerful. The entire system is designed to allow very unmanoeuvrable ships to proceed through the locks controlled entirely by the locomotives.

The first lock, Gatun, was only four miles from the commencement of the canal and consisted of three stages that ultimately raised the ship from sea level on the Atlantic side to 26m above sea level in Lake Gatun. Once through this lock the ship conducted a relatively straightforward river pilotage for approximately five hours before entering the second lock (Pedro Miguel), which was in two stages,

Panama Canal - View of Gatun Locks





Gatun Lock Control Station



Panama Canal - HMAS Sydney in Gatun Lock



Panama Canal Mule



Gatun Lock - Panama Canal

lowering the ship approximately half way back down to sea level. The third and final lock (Mira Flores) was less than a mile further along the canal and again was a two-stage lock that lowered the ship back to sea level on the Pacific side. Given the Pedro Miguel and Mira Flores locks are close together, the same linehandlers remained onboard for both moves. The process for connecting up to the locomotives in each case was identical, and the pilot, line handlers and locomotive drivers all proved to be very capable and professional.

Sydney's pilot was very happy for the ship to use APUs and main propulsion even once the locomotives were connected. However, it quickly became clear that the best way to transit the locks was to start the APUs on approach so that directional control was possible prior to the locomotives being connected, but once the lines were connected it was simpler (and normal procedure) to allow them to do the bulk of the work.

In many ways, the approach to the Panama locks was much simpler than that to West Indian Dock in London as the stream was either negligible or running either with or against the ship. That is, the locks were lined *along* the river, rather than *perpendicular* to it. There were, however, unique currents that exist around each lock as they empty and fill. The exact nature of each current depends on the state of the locks and the pilot's advice on these currents was excellent. One element that caught most of us by surprise was

the rate at which the locks either filled

or emptied once the gates were closed. It was an eight minute evolution and you could actually see the ship move up or down.

Northern Trident provided some challenging ship handling situations in circumstances not often seen on the Australian station. While each situation can be handled in a variety of ways, this article records how *Sydney* handled the ports of London, Baltimore and the Panama Canal transit and will hopefully generate some discussion on alternate methods of handling the FFG Class. 🚢

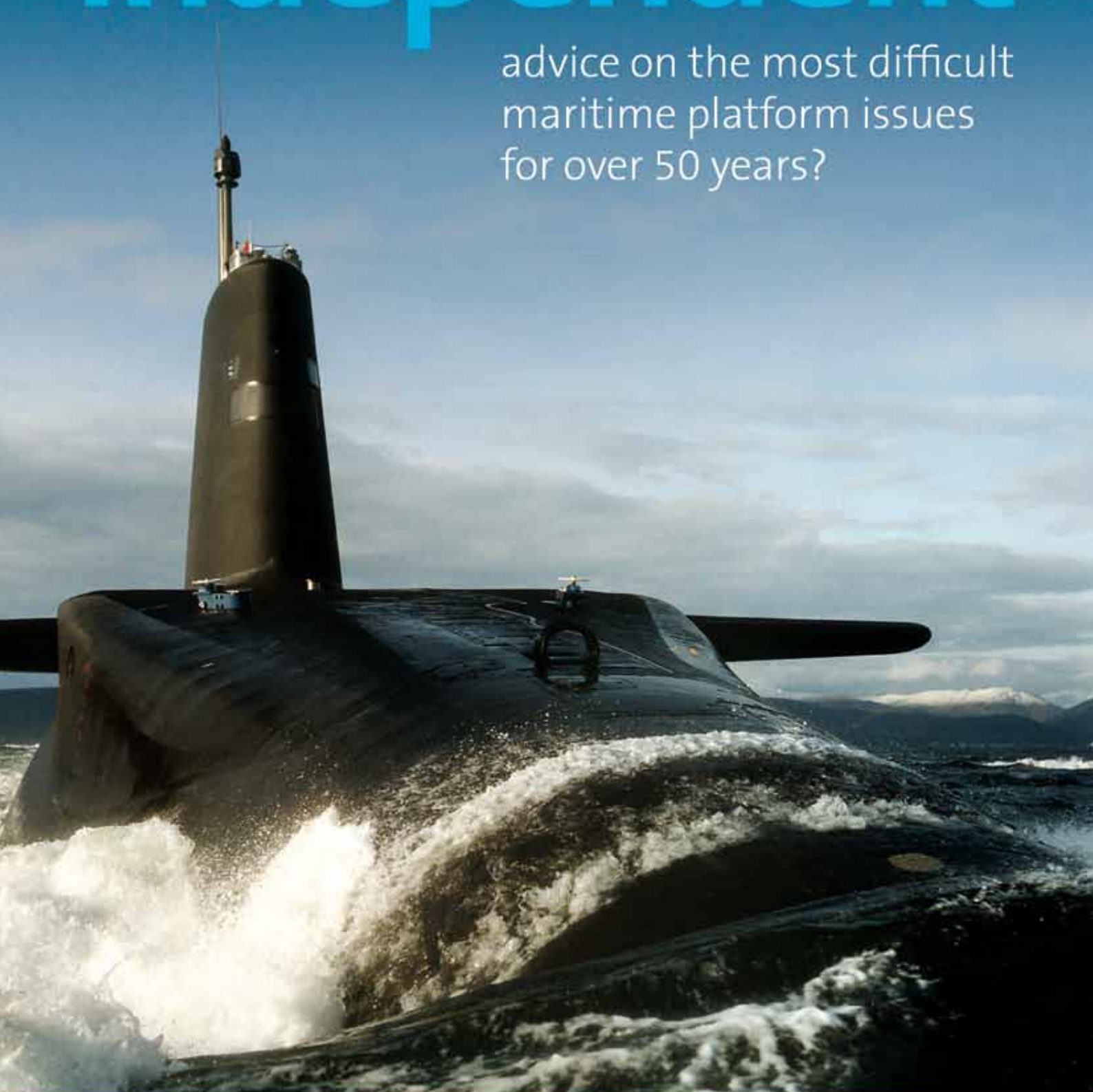


Captain Peter Leavy is currently the Commanding Officer HMAS Sydney. He joined the RAN in 1984 and completed the RAN Principle Warfare Officer's course in 1993. He has served in a wide number of ship classes, and has deployed as Chief of Staff to Commander Task Group 633.1 operating in the North Arabian Gulf during early 2003 and again as Commander Task Force 158.1 in the North Arabian Gulf in 2008. Ashore he has served in Electronic Warfare and Strategic Policy postings.

Who has provided

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for over 50 years?



The Lessons Learnt from Hydrogen Sulphide Incidents in the Royal Australian Navy

BY SUB-LIEUTENANT DAVID MIDSON

Toxic hazards are some of the greatest threats to those aboard a naval ship in peace time.¹ They can cause serious injury or death and unfortunately they are not uncommon.² The RAN has recorded many thousands of toxic hazard incidents of varying degrees over its history.³ Whilst a variety of chemicals can cause a hazard, the most commonly fatal of these is Hydrogen Sulphide (H₂S).⁴

CAUSES

Hydrogen Sulphide is a simple chemical, consisting of one atom of Sulphur and two of Hydrogen, but its simplicity belies its lethality.⁵ This small chemical can have a devastating effect on human physiology, beginning with respiratory irritation and ending in asphyxiation.⁶ It is a silent killer, as at relatively low concentrations it shuts down the olfactory sense, meaning its presence cannot be detected.⁷ There are electronic and chemical detection devices that can provide an early warning, but these will only provide protection when they are in effective working condition.⁸

This toxic gas is potentially within many areas of the ship, but the most important sources are stored sewerage and oily-waste compartments.⁹ In both cases bacteria utilise the microbial food available in sewerage or oily-waste to generate H₂S, which then accumulates to potentially lethal quantities in closed compartments.¹⁰

Hydrogen Sulphide toxic hazards are a relatively recent problem, largely occurring since the 1980s. Ironically, a primary cause for the rise in the prevalence of H₂S hazards has been international environmental regulation.

¹¹ In 1972 and 1973 respectively, the *Convention on the Prevention of*

Marine Pollution by the Dumping of Wastes and other Matter and the *Convention for the Prevention of Pollution from Ships* (MARPOL Convention) were created.¹² These conventions, together with subsequent protocols have provided an international regulatory framework on how waste is disposed of at sea.¹³ Importantly both conventions place limits on the disposal of oily wastes and sewerage, meaning that such wastes have to be stored on board since those conventions came into force.¹⁴

It was this change in regulation that in a sense created a H₂S problem which had long been avoided by dumping such waste overboard.¹⁵ It was as these regulations were being adopted by the RAN that incidents aboard HMA ships *Stalwart* and *Tobruk* occurred.¹⁶

HMAS STALWART

Stalwart was a destroyer tender designed to provide afloat support for the RAN destroyers.¹⁷ In 1985 almost 20 years after she was commissioned *Stalwart* suffered one of Australia's worst toxic hazard incidents.¹⁸ On 22 October, 1985, as the sewerage tanks were being pumped, H₂S gas leaked into the ship, causing three fatalities and 60 injuries.¹⁹ Following the incident, action was taken immediately



and gas detection devices were fitted.²⁰

The *Stalwart* incident led to an inquiry resulting in changes to the procedures used by the RAN in responding to toxic hazards.²¹ The inquiry found many of the injuries were caused by people moving into the contaminated spaces to rescue shipmates.²² Whilst the intention of the rescuers was noble it led to more casualties. The procedure was changed so that a rescue could not be attempted until proper breathing apparatus was being worn.²³ These changes have helped prevent a reoccurrence of the injuries that occurred on *Stalwart*.²⁴

AB Cook Ryan Kuipers carries out his secondary role as part of the Ship's Medical Emergency Team in an exercise on board *Tobruk* (RAN photo)

The Lessons Learnt from Hydrogen Sulphide Incidents in the Royal Australian Navy

HMAS TOBRUK

Tobruk has a distinguished record of service in Australia and overseas, however she has suffered from technical problems.²⁵ In her early period of service she suffered many problems with sewerage plant, and these problems led to a most tragic incident.²⁶ On 14 December, 1981, a naval cadet, Kenneth Dax, was gassed whilst he vomited into the heads.²⁷ The parliamentary inquiry that followed was not impressed by the RAN response to the incident.²⁸ The inquiry found that the sewerage system was of inadequate design and that many known risks of H₂S developing onboard had been overlooked or ignored.²⁹

The ADF has been accused in other incidents of putting platforms before people and the inquiry suggests this was the case of *Tobruk*.³⁰ Fortunately it appears that this lesson was learnt: in relation to H₂S the RAN now has strict procedures in place for managing

sewerage systems.³¹ Whilst systems are improving there is always room to improve safety. A timely reminder was the non-lethal toxic hazard incident aboard *HMAS Maitland* in 2007 where several personnel were injured due to faulty operations in a sewerage plant.³² In more general terms, the lesson of putting people before platforms has most recently been reinforced by the New Generation Navy initiative.³³

H₂S toxic hazards present a clear danger to the RAN, they can and do occur through both war and peace, and the nature of the hazard makes them both hard to detect and lethal. Since international obligations have, as a side effect, created H₂S problems for the RAN there has been much work to minimise the risk. Each time there is a toxic hazard incident it is devastating, especially for those personnel directly affected, but it is also a chance for the RAN to improve its practice and minimise the dangers.

The *Tobruk* incident provided new impetus to better managing the design and construction of HMA ships, and the care needed in designing sewerage systems. The tragedy aboard *Stalwart* caused the RAN to fit H₂S detection devices and change the procedures for how H₂S victims are rescued, procedures that no doubt save lives today. It is important for the RAN to continue to improve the capability to deal with toxic incidents. This can be done through research, but it is also achieved through continual learning. It continues in the RAN today as lessons are learnt from incidents such as the *Maitland* incident. Whilst the danger of H₂S cannot be escaped, vigilance and willingness to accept and learn from past tragedies stands the RAN in good stead to minimise the risks. 🚢

*HMAS Tobruk-photo
by Chris Sattler*





Sub-Lieutenant David Midson recently completed NEOC 41 and is now working as a Legal Officer in the RAN. He comes from Tasmania where in 2008 he graduated from the University of Tasmania with a Bachelor of Science and Bachelor of Laws.

(Endnotes)

1 Notes

Department of Defence 2007, Defence Instructions (Navy), Control and monitoring of Hydrogen Sulphide in Ships and Support Craft, LOG 34-5, Navy Headquarters, Canberra, pp 1-4. See also for toxic threats in other navies, Shulman, S. 1992, *The Threat at Home – Confronting the Toxic Legacy of the U.S. Military*, Beacon Press, Boston.

2 Department of Defence 2007, Defence Instructions (Navy), Control and monitoring of Hydrogen Sulphide in Ships and Support Craft, LOG 34-5, Navy Headquarters, Canberra, pp 1-4.

3 Royal Australian Navy, OHSIR Reporting System, Defence Web, navy.defence.gov.au/ohs/index.asp, accessed on 2 September 2009.

4 Royal Australian Navy, 2003, 'Ship's Safety Hazards', Navy Video Unit, Garden Island.

5 Hodgeman, D.K. 1994, *Hydrogen Sulfide Generation in Shipboard Oily-Water Waste: A Safety Hazard in Ships*, Defence Science and Technology Organisation, Melbourne, pp 4-6.

6 *ibid*, pp 6-7.

7 *ibid*, p 6.

8 Pimmel, A. and Craypool, G. 2001, 'Introduction to shipboard organic geochemistry on the JOIDES Resolution', *ODP Tech. Note*, 30, p 5.

9 Hodgeman, *op cit*, pp 1-9.

10 Hodgeman, D.K., Fletcher, L. and Upsher, F. 1995, *Hydrogen Sulfide Generation in Shipboard Oily-Water Waste: A Safety Hazard in Ships: Part 3. Ship Factors*, Defence Science and Technology Organisation, Melbourne, pp.1-5.

11 *ibid*, p 2.

12 *Convention on the Prevention of Marine Pollution by the Dumping of Wastes and other Matter*, 1972, London; *The International Convention for the Prevention of Pollution of Ships*, as modified by the 1978 protocol, 1973, London.

13 Hodgeman, Fletcher and Upsher, *op cit*, p. 2.

14 *The International Convention for the Prevention of Pollution of Ships*, as modified by the 1978 protocol, 1973, London.

15 Hodgeman, *op cit*, pp 5-6.

16 Hodgeman, *op cit*, pp 5-6.

17 Royal Australian Navy, 2009, HMAS *Stalwart* (II), [http://www.navy.gov.au/HMAS_Stalwart_\(II\)](http://www.navy.gov.au/HMAS_Stalwart_(II)), accessed 3 September, 2009.

18 Royal Australian Navy, 1986, 'Naval Board of Inquiry into HMAS *Stalwart*, HMAS *Stalwart* Toxic Gas Accident 22nd October 1985', Australian Government Printing Service, Canberra, Summary of Board of Inquiry Report.

19 *ibid*.

20 Royal Australian Navy, 2009, *op cit*.

21 Royal Australian Navy, 1986, *op cit*, Summary of Board of Inquiry Report. See also *Lewis v Commonwealth of Australia* [1999] FCA 1292 para 7-15.

22 Royal Australian Navy, 1986, *op cit*, Summary of Board of Inquiry Report.

23 Royal Australian Navy, 1986, *op cit*, Summary of Board of Inquiry Report. See also *Lewis v Commonwealth of Australia* [1999] FCA 1292 para 7-15.

24 Department of Defence, *op cit*, pp. 1-9, Annex D.

25 Doolan, K. 2007, *HMAS Tobruk: Warship for Every Crisis*, Grinkle Press, Queanbeyan, p.56.

26 *ibid*, p.56.

27 Joint Committee of Public Accounts, 1984, *HMAS Tobruk*, Report 223, Australian Government Publishing Service, Canberra, p. 110.

28 *ibid*, p.111.

29 *ibid*, p.112. See also Brown, G. 2002, *Decades of Disasters: Major Project Management in Defence*, Submission to the Senate Committee on Foreign Affairs and Trade, Annex 1.

30 Examples include, Joint Standing Committee on Foreign Affairs, Defence and Trade, 2009, 'Sealing a Just Outcome: Report from the Inquiry into RAAF F-111 Deseal/Reseal Workers and Their Families', Australian Government Publishing Service, Canberra, pp.86-89.

31 Department of Defence, *op cit*, pp.1-9. See also for Department of Defence knowledge on how to minimise the danger of toxic hazards, Hodgeman, D.K., Fletcher, L. and Upsher, F. 1995, *Hydrogen Sulfide Generation in Shipboard Oily-Water Waste: A Safety Hazard in Ships: Part 4. Minimising the Risk*, Defence Science and Technology Organisation, Melbourne.

32 Director General Navy Communications and Coordination, 2007, 'Navy Stands by Armadale Boats, Crew', *Navy News*, Royal Australian Navy, 15 November 2007.

33 Crane, Vice Admiral, R., RAN, 2008, *Submarines in Australia's Future Maritime Defence - Chief of Navy Perspective*, Speech to the SIA Conference, Shine Dome, Australian National University, 6th November 2008.

Bibliography

The Convention on the Prevention of

Marine Pollution by the Dumping of Wastes and other Matter, 1972, London.

The International Convention for the Prevention of Pollution of Ships, as modified by the 1978 protocol, 1973, London.

Lewis v Commonwealth of Australia [1999] FCA 1292.

Brown, G. 2002, *Decades of Disasters: Major Project Management in Defence*, Submission to the Senate Committee on Foreign Affairs and Trade.

Crane, Vice Admiral, R., RAN, 2008, *Submarines in Australia's Future Maritime Defence - Chief of Navy Perspective*, Speech to the SIA Conference, Shine Dome, Australian National University, 6th November 2008.

Department of Defence 2007, Defence Instructions (Navy), Control and monitoring of Hydrogen Sulphide in Ships and Support Craft, LOG 34-5, Navy Headquarters, Canberra.

Director General Navy Communications and Coordination, 2007, 'Navy Stands by Armadale Boats, Crew', *Navy News*, Royal Australian Navy, 15 November 2007.

Doolan, K. 2007, *HMAS Tobruk: Warship for Every Crisis*, Grinkle Press, Queanbeyan.

Hodgeman, D.K. 1994, *Hydrogen Sulfide Generation in Shipboard Oily-Water Waste: A Safety Hazard in Ships*, Defence Science and Technology Organisation, Melbourne.

Hodgeman, D.K., Fletcher, L. and Upsher, F. 1995, *Hydrogen Sulfide Generation in Shipboard Oily-Water Waste: A Safety Hazard in Ships: Part 3. Ship Factors*, Defence Science and Technology Organisation, Melbourne.

Hodgeman, D.K., Fletcher, L. and Upsher, F. 1995, *Hydrogen Sulfide Generation in Shipboard Oily-Water Waste: A Safety Hazard in Ships: Part 4. Minimising the Risk*, Defence Science and Technology Organisation, Melbourne.

Joint Committee of Public Accounts, 1984, *HMAS Tobruk*, Report 223, Australian Government Publishing Service, Canberra.

Joint Standing Committee on Foreign Affairs, Defence and Trade, 2009, 'Sealing a Just Outcome: Report from the Inquiry into RAAF F-111 Deseal/Reseal Workers and Their Families', Australian Government Publishing Service, Canberra.

Pimmel, A. and Craypool, G. 2001, 'Introduction to shipboard organic geochemistry on the JOIDES Resolution', *ODP Tech. Note*, 30.

Royal Australian Navy, 1986, 'Naval Board of Inquiry into HMAS *Stalwart*, HMAS *Stalwart* Toxic Gas Accident 22nd October 1985', Australian Government Printing Service, Canberra, Summary of Board of Inquiry Report.

Royal Australian Navy, 2003, 'Ship's Safety Hazards', Navy Video Unit, Garden Island.

Royal Australian Navy, OHSIR Reporting System, Defence Web, navy.defence.gov.au/ohs/index.asp, accessed on 2 September 2009.

Royal Australian Navy, 2009, HMAS *Stalwart* (II), [http://www.navy.gov.au/HMAS_Stalwart_\(II\)](http://www.navy.gov.au/HMAS_Stalwart_(II)), accessed 3 September, 2009.

Shulman, S. 1992, *The Threat at Home – Confronting the Toxic Legacy of the U.S. Military*, Beacon Press, Boston.

SEEKING SYDNEY A MAJOR LIFE MISSION: Commodore Bob Trotter and Dr Mike McCarthy - INTERVIEWED

BY LIEUTENANT COMMANDER TOM LEWIS

For most people, a life of naval service and a rise to the rank of Commodore would suffice. One should retire and take up growing roses, perhaps. But for Bob Trotter, it was not enough. To find the wreck of HMAS Sydney became a new life focus.

The story of the cruiser is well known. The *Sydney* was returning to Perth after a northerly mission in mid-November 1942. She came across the German raider *Kormoran*, disguised as a Dutch trading vessel. Instead of standing well off where her superior gunnery control could prove decisive, *Sydney* came closer and closer. When it proved elusive signalling was not going to work much longer, the *Kormoran*'s commander Detmers gave the orders to open fire. The German scored decisive first hits, but the *Sydney* fought back, and after engaging each other at close quarters, the *Kormoran* was sinking and *Sydney* was on fire. The cruiser drifted off, "to the south-east" according to the *Kormoran*'s crew, the majority of whom survived.

The Australian cruiser was never seen again.

After years of inquiry, argument, and several revealing books, the non-profit organisation *HMAS Sydney Search Pty Ltd*, became a trustee for the Finding *Sydney* foundation in 2003. It was born out of the smoke and fire of the 1999 Senate Inquiry into the loss of the warship, although its identity as a future leader was lost in the myriad of other organisations all professing to do the same thing: find the wrecks of the two ships, and provide at least some beginning answers to the mystery.

There were several important original founders, says Bob Trotter, as we sit in the Perth offices of *Sydney Search*. Ironically, the premises were scheduled for closure in a month's time, the *Sydney* having been found some months previously. The organisation still has a role, but it will gradually wind down as its functions lessen. "Ted Graham, Professor Kim Kirsner, Don Pridmore – all were original founders," says Trotter. "Originally we wanted to locate the ship," he outlines. "To do that we needed to define a search area;



Bob Trotter (left) & Mike McCarthy (right)

and to analyse practical operational issues. We decided we also needed to believe Detmers – why would he lie about where his ship was sunk and his survivors could be located?"

The organisation sought and found patrons: former deputy PM Tim Fischer; Professor Geoffrey Blainey, and retired Rear Admiral David Holthouse. The Chairman was Ted Graham, and the Directors became Don Pridmore, Keith Rowe, Glenys McDonald and Bob Trotter.

Volunteers came forward, and they concluded that although discrepancies existed in the Germans survivors' accounts, there was a general consistency within the stories.

Trotter explains: "The survivors were rescued from lifeboats some days apart so any opportunity for collusion were limited. We defined a mathematical model showing degrees of certainty within the accounts, and came up with box for *Kormoran* and a sector to the SE for *Sydney*".

Bottom left: David Mearns navigational reconstruction outlining the larger 1,768 sqnm search box for the Kormoran search and the smaller 360 sqnm search box for Sydney in red pencil. The final wreck and battle site locations are also plotted.

David Mearns, Search Director, The Finding Sydney Foundation at the Charting Table.



Meanwhile overseas, international wreck finder David Mearns and some colleagues were also working on the problem independently, looking for verifiable evidence.

The two groups joined forces. Some factors remained elusive; for example, was it a noon sighting Detmers used or was it the battle location? The team studied the movements of the *Kormoran* liferafts and ship's boats. After deliberations stretching into years, they finally had a search site. Now the question was whether they would have the money....

The team ended up with \$5,160,000 funding, from the WA and NSW state governments, the Federal Government, and both private sector and public donations. This was enough to fund about 30 days of ship and equipment hire. David Mearns was placed in charge of prioritising the search area, and the chartered *Geosounder* put to sea. Arriving at the location searching commenced with two sonars lowered to within 500m of the seabed. Bob Trotter recalls it was a process described as "mowing the lawn" as the search rigs processed their information from sensors three kilometres below the ship.

A comparatively early find of the *Kormoran* early in the 30 day window occurred. The *Sydney* wreck quickly followed, so there was more money available to use Remote Operated Vehicles to take photographs. *Sydney*, upright but smashed and broken on the seabed, was definitely located some miles to the south-east of the German raider.

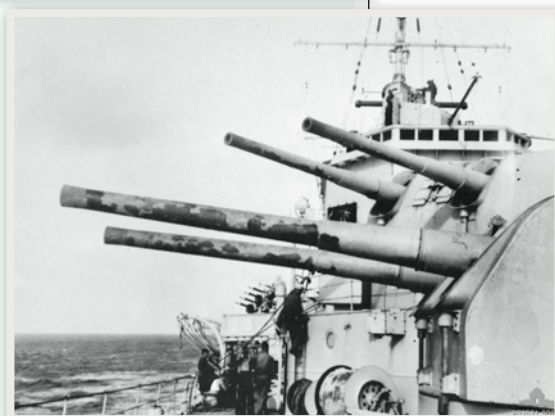


Sydney in 1938 with Walrus aircraft on catapult (Courtesy RAN).

"Commitment, Persistence and Science", concludes Bob Trotter, "make a formidable team."

SO, I ASK HIM, DID YOUR CAREER IN THE RAN SET YOU UP FOR THE SEARCH FOR THE SYDNEY?

Trotter outlines his past briefly: as a submarine engineer after joining in 1964, served in HMA ships *Vampire*, *Anzac* and *Melbourne*, engineering training in the UK, *HMAS Sydney* Vietnam trips, more submarine training in UK, serving in various boats and then Navy Office. He went back to sea in *HMAS Stalwart*, and then into Personnel, and senior staff jobs, and saw the start of the Collins boats. Positions in Materiel followed, and then he returned to personnel as Director-General Naval Manpower. He finally served as a commodore in WA and retired in 1998. Altogether, a complex and capable background gave him a variety of skills essential for the search.



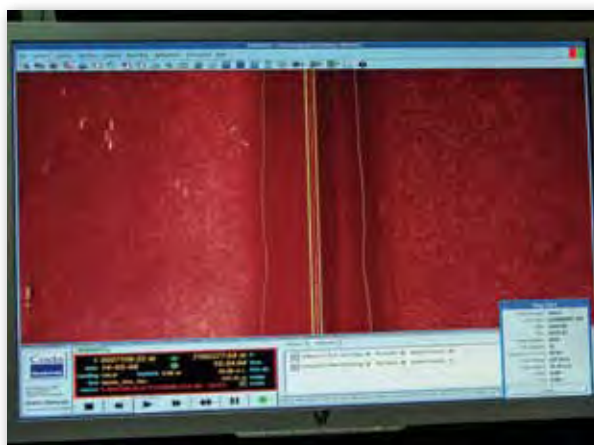
Sydney II's forward guns.

HOW HAS THE ORGANIZATION REACTED TO THE VARIOUS CONSPIRACY CLAIMS?

"They weren't part of our agenda," Bob says. "We were only interested in finding the wrecks. We did try to engage those people with other theories to our way of thinking – why don't we get together and pool our resources, for example? It did not work: everyone stayed in their trenches."

HAS THE FINDING NOW LESSENED THE CLAMOUR?

"Yes – many people have quietened down. A good four out of five of these



This sonar image, covering a 750 metre expanse of the seabed, shows the wreckage found in the location four nautical miles south of Kormoran's wreck site. The wreckage is widely scattered over a distance covering 1,700 metres and fits with the scenario of Sydney being torpedoed and heavily shelled by Kormoran resulting in the loss of parts of the ship. The approximate NNE – SSW trend of this debris trail fits with the course of Sydney as she altered course south to avoid Kormoran's fire.

SEEKING SYDNEY A MAJOR LIFE MISSION: Commodore Bob Trotter and Dr Mike McCarthy - INTERVIEWED

theorists, once the wrecks were found, came up and said: "Well done – I was wrong". Three or four remain and they will never be satisfied and they will remain so, I think, even if you took them down in a submersible."

I ASK WHAT WAS THE LOW POINT IN THE YEARS PRIOR TO THE DISCOVERY OF THE WRECKS?

"When we were given a lot of assurance by many people and organizations that if we were to show we had a degree of government support that they would come to the party, but when that happened they did not fulfil their promise."

Was the organization confident about finding the *Sydney* following the finding of *Kormoran*? "Yes, even when we were in the area definition phase we thought we had 70-80% chance of finding *Kormoran*, and then *Sydney* was a 90% chance – just go down Detmer's bearing."

SO WHAT DOES THE FUTURE HOLD FOR SYDNEY SEARCH?

"There are still some 1300-odd photos that can be published, but our organisation's role has nearly come to an end. We're now going through the construction of the web phase. There will be a page for every member of the company including the RAAF blokes and the Maltese ship's company members. Also we will be writing to all of the relatives and asking them to provide photos and materials."

I ASK HIM IF HE CAN DESCRIBE THE REACTION OVERALL FROM THE SYDNEY SHIP'S COMPANY RELATIVES?

"Not euphoria but...I guess it's best explained by saying that some people

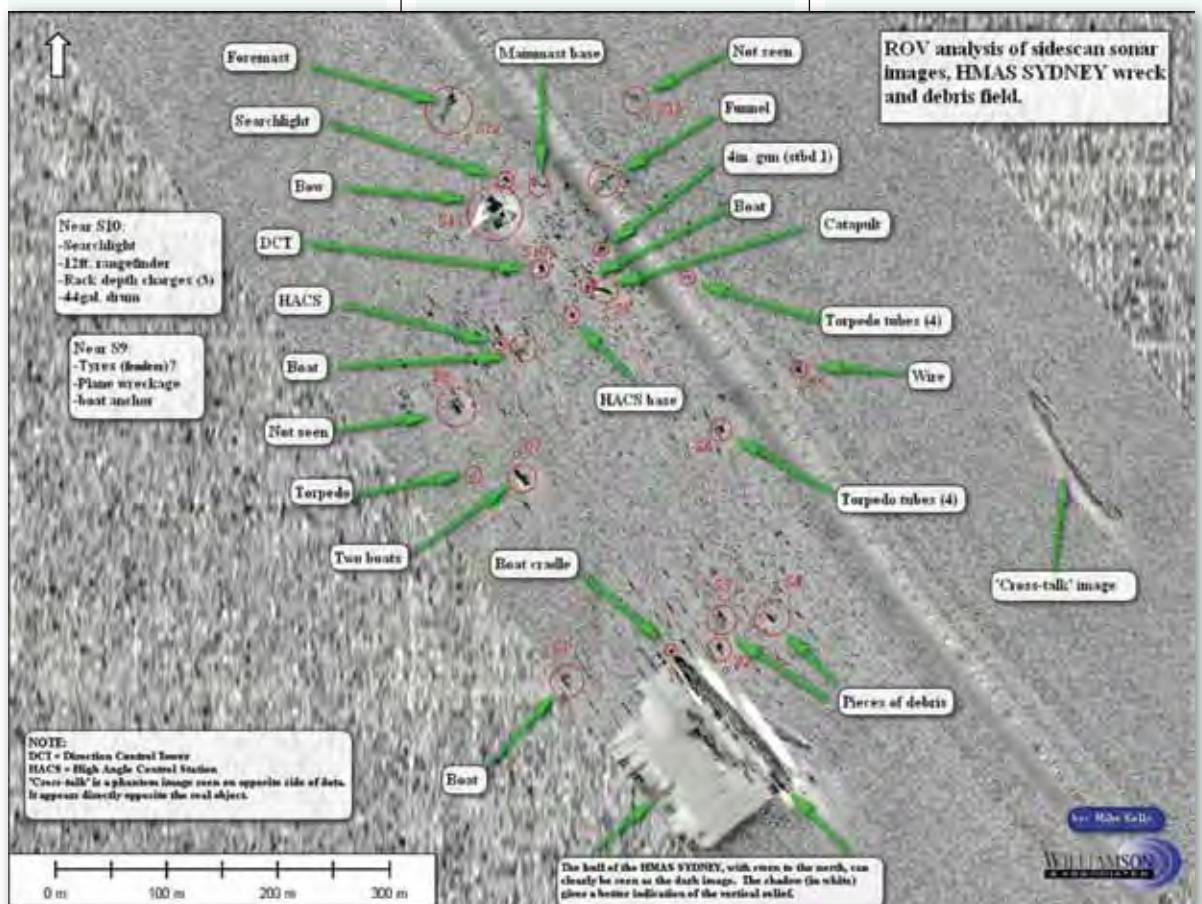
were against the search – they were afraid of what might be found, and also a feeling of let it lie. But when she was found, there was relief, and then from many heartfelt thanks."

AND THE KORMORAN PEOPLE?

"The *Kormoran* Association does not have many members now, and they have an annual get-together, but there hasn't been any statement of intent



MV Geosounder-Sonar & Survey Control Room



by the German people. The German Ambassador has been most thankful... but it has not ever been a matter of mystery for them."

DR MIKE MCCARTHY OF THE WESTERN AUSTRALIAN MARITIME MUSEUM HAD A BUSY PARTICIPATION WITH THE SYDNEY STORY OVER DECADES. HE SPOKE TO TOM LEWIS AT THE MUSEUM ABOUT THE JOURNEY...

DOES THE MUSEUM HAVE ANY PLANS RELATING TO THE SYDNEY DISCOVERY?

We have branches in Fremantle, Albany, Geraldton – plans are in place to feature aspects especially in Geraldton, and the archaeology side of things will be featured. I would like to see the social aspect of *Sydney* developed: effects on the populace; 25 men and boys from Fremantle did not return, for example. But we have to be careful of not letting *Sydney* take over the naval side of things in the Museum. We have to place it in the context too that navies lose ships in warfare: *Sydney-Emden* in WWI, and *AE2* for example – their stories should not be ignored. *AE1*'s story needs to be taken further too. But sometimes the mystery vessels such as *Sydney* have a moral obligation over us.

ARE THERE ANY PLANS FOR THE RECOVERY OF ANY ARTEFACTS NEAR THE WRECKS?

We're not aware of any such plans, and we would advise that a properly presented overview would be necessary if there were any such thoughts. HSK *Kormoran* is still owned by the German Navy, and *Sydney* by the Navy. We would provide advice if requested – but we always stay at arm's length from any organizations. That was why we stayed apart from the *Sydney* Search people – we are professional facilitators of

conservation and preservation.

ARE THERE PLANS FOR ANY FURTHER MAPPING OF THE OCEAN FLOOR AROUND THE WRECKS?

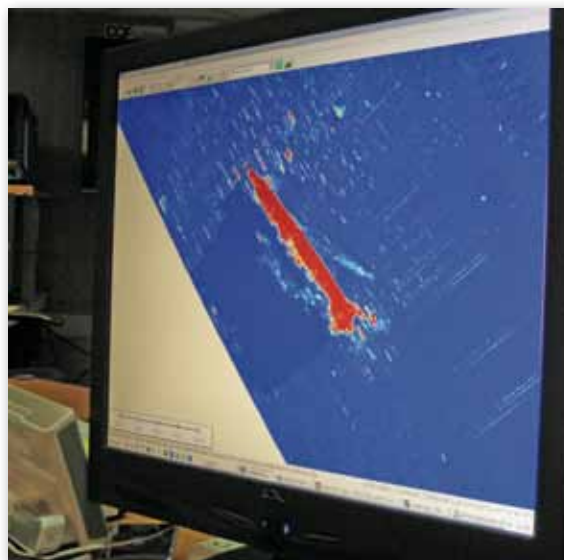
The Museum's role now is to provide advice to the Commonwealth, so if there was a requirement we would do that. We assess what other organizations might do too, and again provide advice to the government.

WHAT HAS PUBLIC INTEREST BEEN LIKE RELATING TO THE DISCOVERY? HAS IT BEEN GREATER THAN INTEREST BEFORE THE DISCOVERY?

Sydney was reported to us as being found at least 24 times. Every time anything was found on the Australian west coast it was believed to be *Sydney*-related. The Channel 7 report [of 2007] was the pinnacle of interest, and was reported to be the absolute truth with very little criticism. There seemed in relation to reports such as this, and others, to be very little critical examination by the media of the sources.

The *Sydney* Search web site was a good idea – a fabulous job, which reflects the duty to show people who have donated public monies what's going on. There is still a great deal of information to be published, and I hope when the Cole Inquiry is over that a lot of this can be shown. I hope that all people with theories have presented them to the Inquiry too.

Public interest now has waned for a while....We presently have people who are centred around one conspiracy theorist who says that what is shown on the seabed is all a put-up by the government to keep people quiet and to hide the truth. That is completely disgraceful. There's another that alleges buried bodies, but he provides no credible evidence.



HOW HAVE YOU PERSONALLY REACTED TO THE SEARCHES, CLAIMS AND COUNTERCLAIMS, AND THE DISCOVERY – OR IS IT JUST WORK FOR YOU?

I first came across the story in my 20's, when I met J Robotham, a guard to the Germans, and the first of the conspiracy theorists alleging he had a German diary reading "the colours had been lowered" during the fight

3rd pass of the sidescan photo, showing the Sydney wreck

Top photo: Sydney sonar

Kormoran wreckage



SEEKING SYDNEY A MAJOR LIFE MISSION: Commodore Bob Trotter and Dr Mike McCarthy - INTERVIEWED

between *Sydney* and a German cruiser. I visited Red Bluff to see where the Germans had landed and eventually joined the museums and became Inspector of Wrecks. I met Michael Montgomery when he was writing his book [*Who Sank the Sydney?*]. Then Barbara Winter [who wrote *HMAS Sydney: fact, fantasy and fraud*]. Then the Sydney Research Group who used to meet at the Museum occasionally and I met many of the people associated with that. *Sydney* became more and more of an interest to me. But I tried to treat it as any other wreck so I could ask questions such as "Is this piece of evidence verifiable?" I got to know John Ross, a 1930s *Sydney* officer and author who always provided a calming influence. Gradually, with Kim Kirsner's help this built up to the 1991 seminar on the 50th anniversary of *HMAS Sydney's* loss.

So I've been lucky to work with them all.

CAN YOU TELL US MORE ABOUT THE FIRST INQUIRY WHICH SET SO MANY AGENDAS?

The first inquiry into whether *Sydney* could be found was held at the Museum in 1991, and it made eight recommendations, one of which was to search the position Detmers gave for the battle; another was to search the archives. After that it all tended to be dominated and derailed by conspiracy theories. Most of these were aired at the 1997/8 Parliamentary Inquiry, which also said to look in the Detmer-given position and recommended another inquiry which was held in 2001. We helped many researchers. Wes Olsen produced his brilliant analysis of the Carley float and other ships that survived after taking similar battle damage to *Sydney*, and Glenys McDonald went out and investigated claims of a battle in

the Port Gregory region, including a bombardment by a Japanese submarine. Both then published, as did John Ross who produced *Lucky Ross*. All this was underpinned by our responsibilities under the Historic Shipwrecks Act.

ANY FINAL CLOSING THOUGHTS?

The key to the search was the German battle position and her survivors rowing towards *Sydney* – then she disappeared.

I think given the astounding allegations over time that it should be an offence to play with the minds of relatives by falsely claiming things related to lost ships and their crews. Finally, once the lessons of *Sydney* have sunk in we should look at strengthening the relevant legislation like the War Graves Act. *Sydney* is a ship to be proud of – it is a great ship even in its loss. 🚢



Lieutenant Commander Tom Lewis, PhD, OAM, is the author of seven history books, one of which – Sensuikan I-124 – covered the story of the Japanese submarine sunk outside Darwin in January 1942 suggested by some as being connected with the Sydney sinking.



Sonar SM30 Breaking Surface During Recovery.

Top photo: Hauling in SM30 Sonar Tow Fish.

5.9 Gun (HSK Kormoran)- Kormoran's 5.9-inch gun in the forward hold pointing to starboard and aft of the beam



*Buckled Stern
HMAS Sydney II - The buckled stern and collapsed quarterdeck clearly indicated that Sydney had struck the sea floor stern first.*



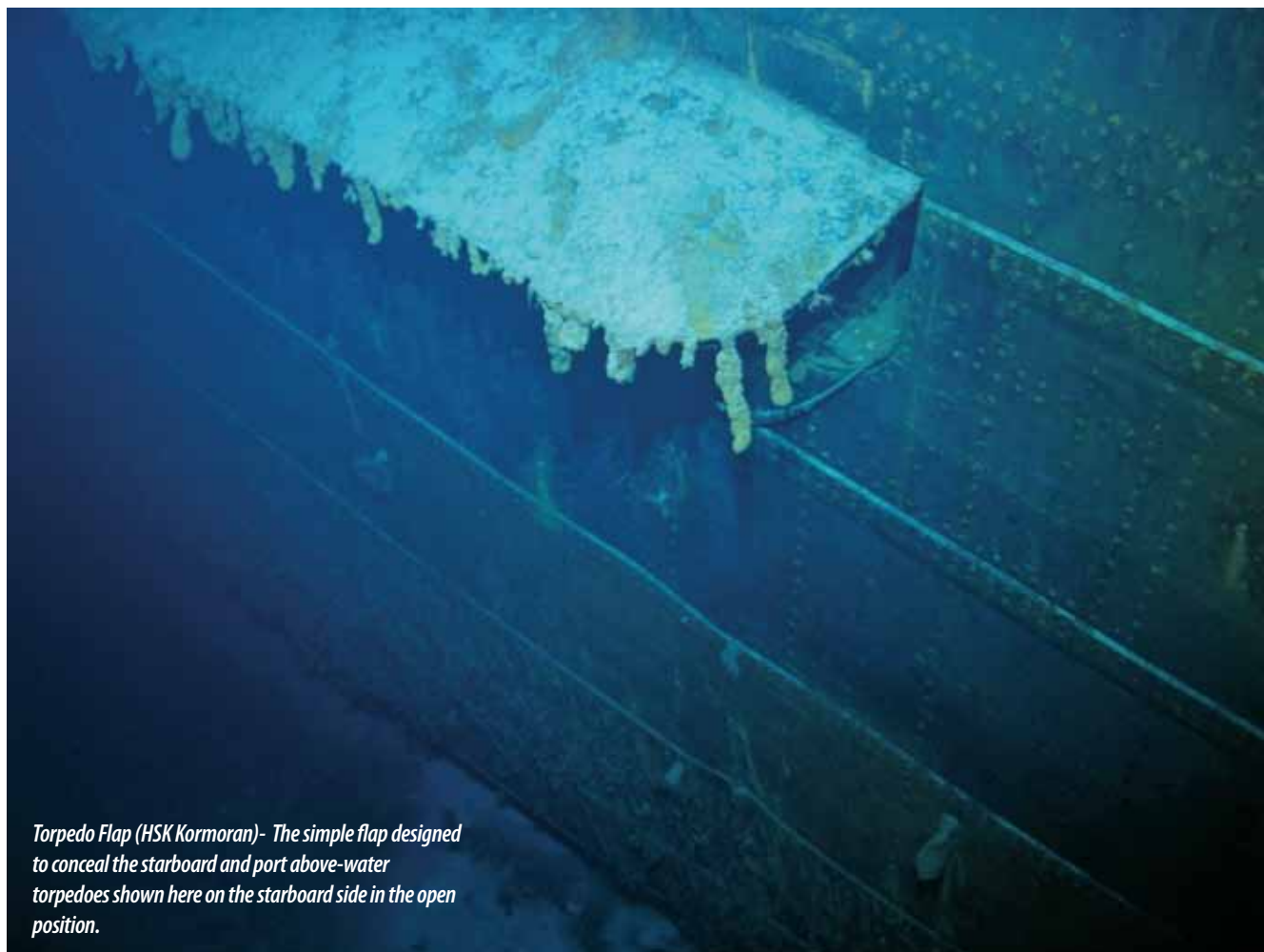
HMAS Sydney II - This cluster of four 5.9-inch shell hits within a line 20-feet high clearly demonstrates the deadly precision of the German gunnery.



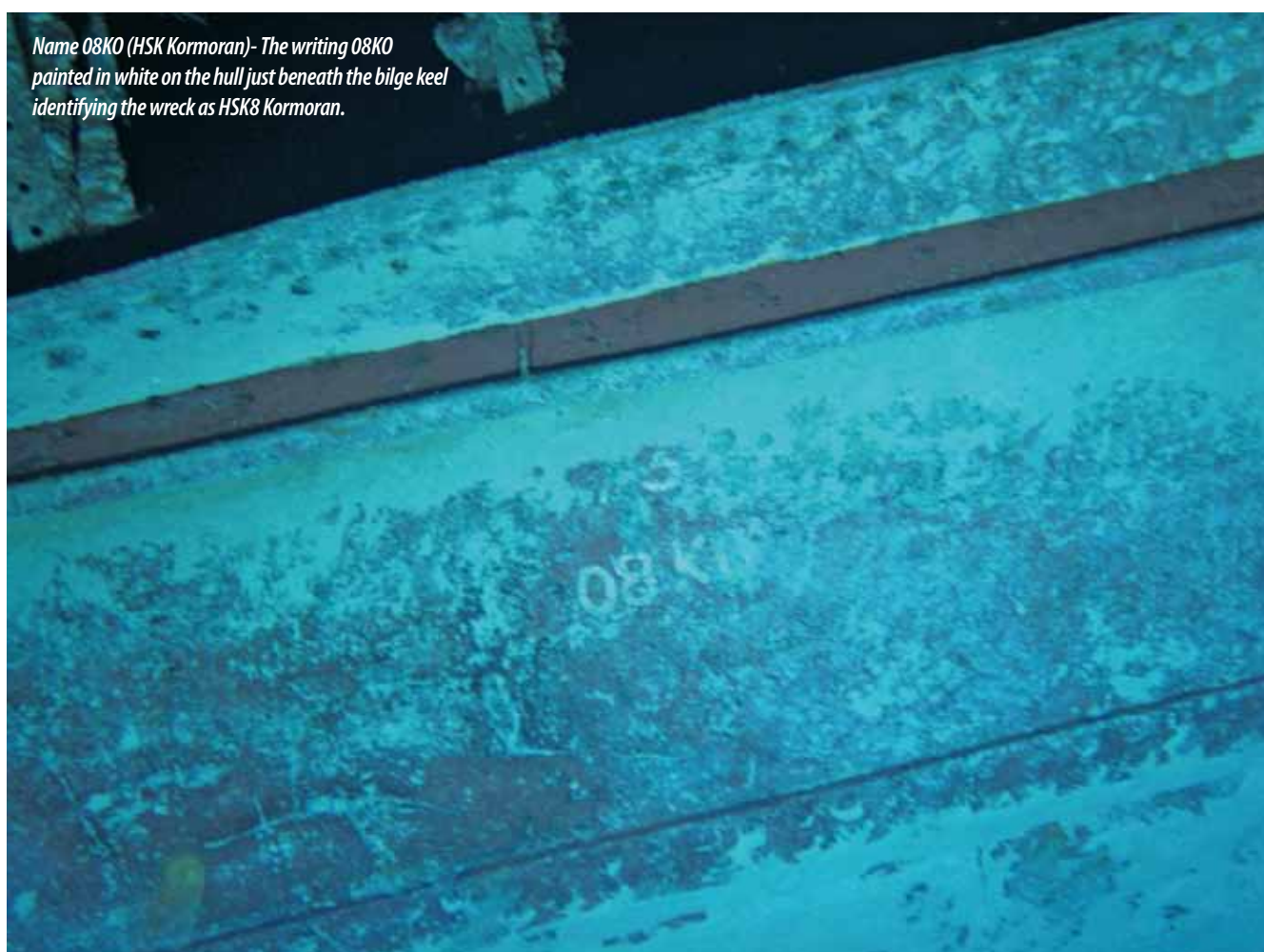
Commodore Bob Trotter and David Mearns at the final dinner celebrating the find of Sydney and Kormoran



HMAS Sydney II - Without doubt the most chilling find in the debris field was the presence of five of Sydney's life boats. Note Sydney's official badge mounted on their bows.

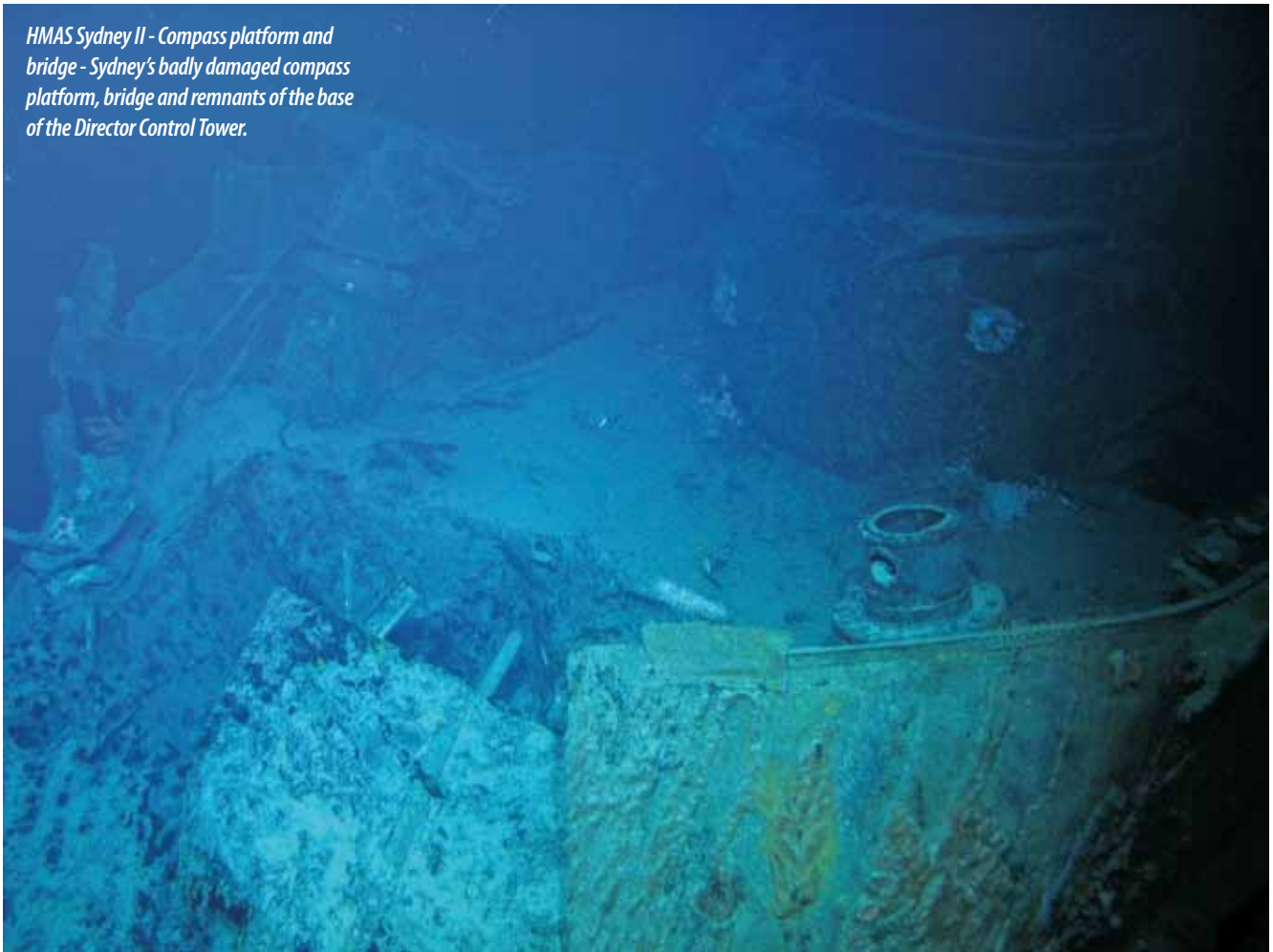


Torpedo Flap (HSK Kormoran)- The simple flap designed to conceal the starboard and port above-water torpedoes shown here on the starboard side in the open position.



Name 08KO (HSK Kormoran)- The writing 08KO painted in white on the hull just beneath the bilge keel identifying the wreck as HSK8 Kormoran.

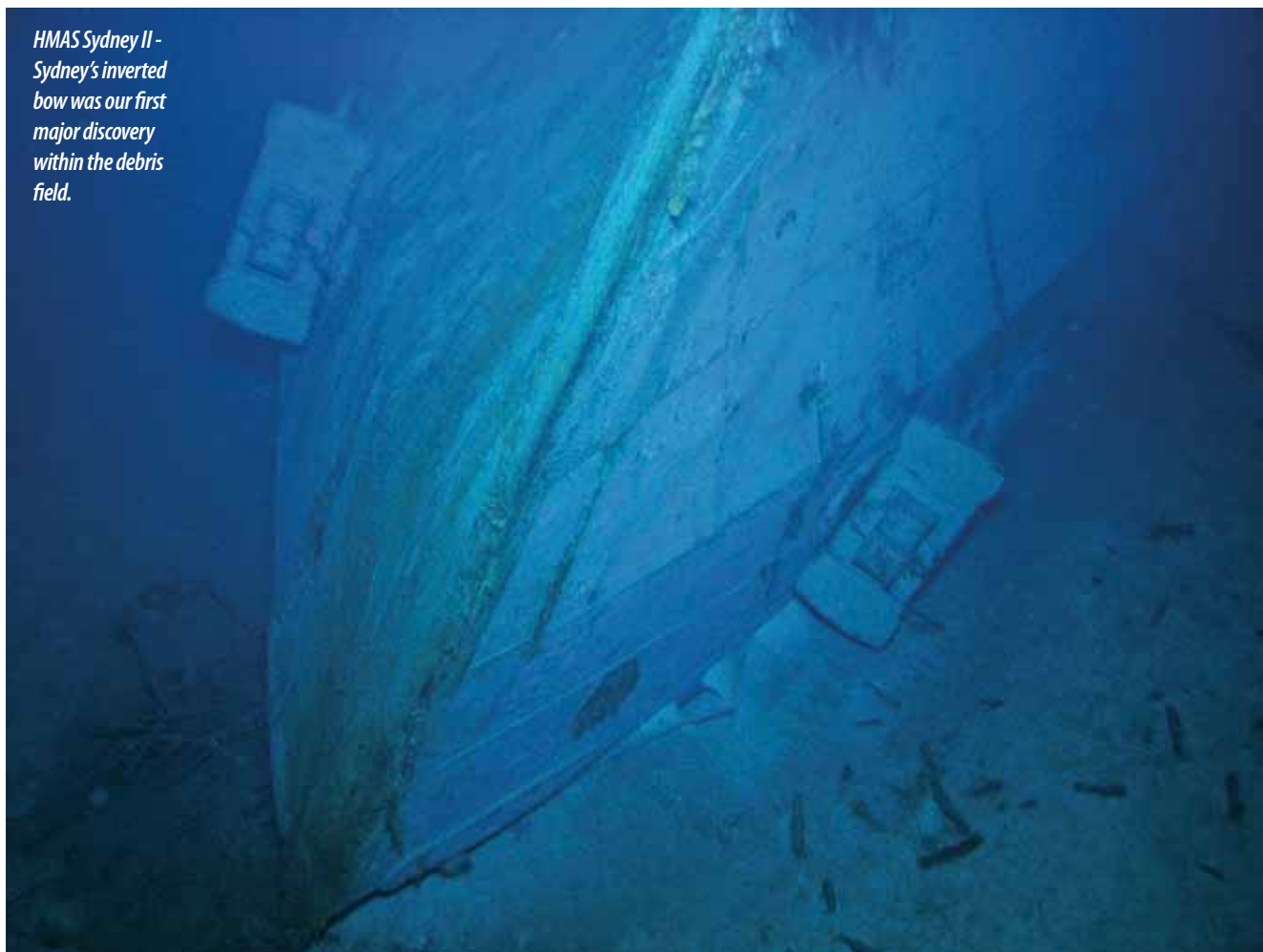
HMAS Sydney II - Compass platform and bridge - Sydney's badly damaged compass platform, bridge and remnants of the base of the Director Control Tower.



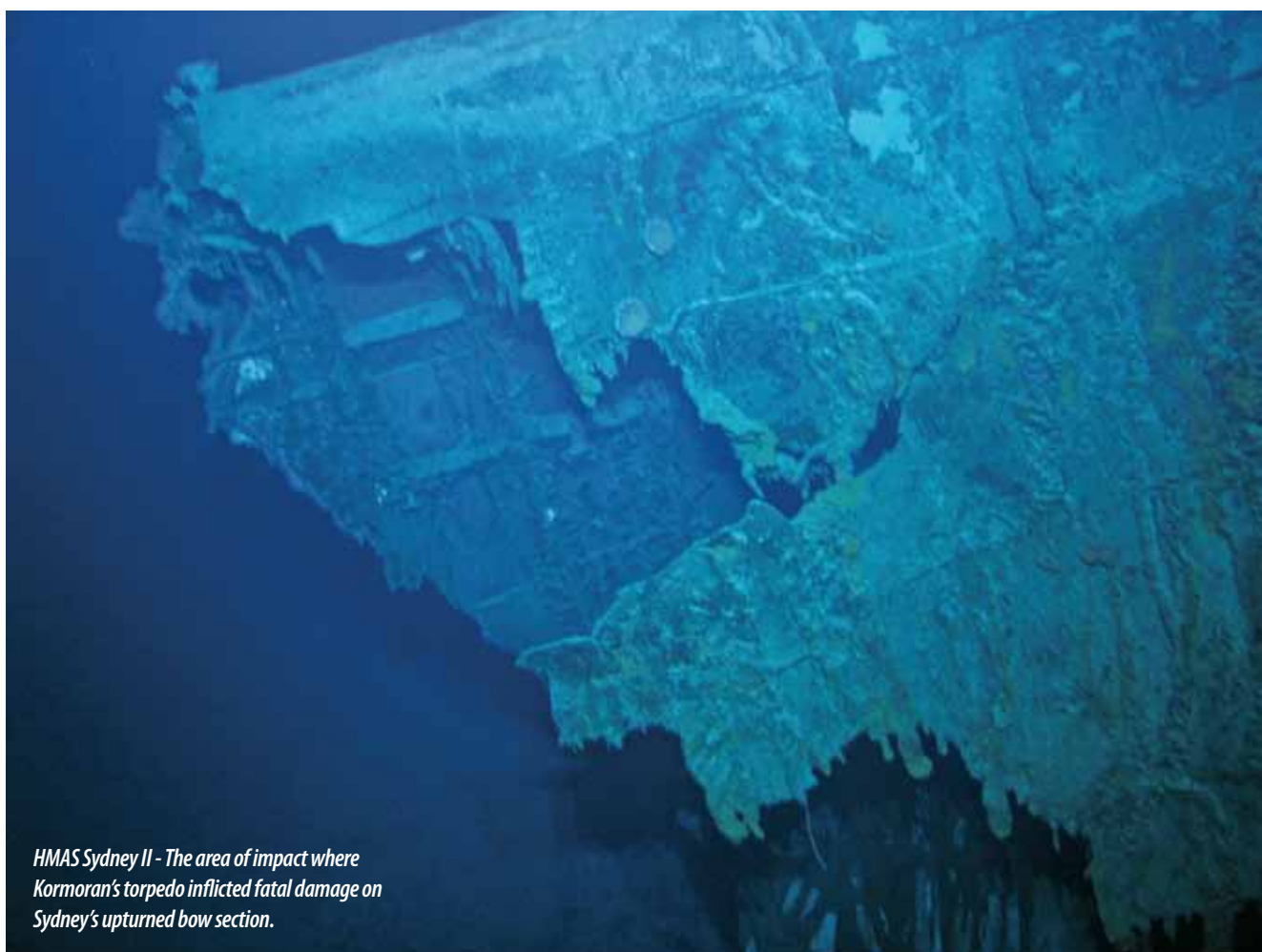
HMAS Sydney II - One of Sydney's port propellers and shafts dislocated from its normal position against the hull.



*HMAS Sydney II -
Sydney's inverted
bow was our first
major discovery
within the debris
field.*



*HMAS Sydney II - The area of impact where
Kormoran's torpedo inflicted fatal damage on
Sydney's upturned bow section.*



Note: All underwater photos of the Sydney and Kormoran are credited to "The Finding Sydney Foundation", as are the photos of Lieutenant John Perryman, the chart of David Mearns, and the photos of Sydney's forward guns.



(from left to right) John Perryman - Senior Historian, Royal Australian Navy, David Mearns - Foundation Search Director, Ted Graham - Foundation Chairman.



Directors (Left to Right) Ted Graham (Chairman) Keith Rowe, Bob Trotter, Glenys McDonald and Patron Rear Admiral David Holthouse, RANR, and some of the ship's company of the modern HMAS Sydney IV.



Directors, CN, & Bell on Anzac.

AROUND AUSTRALIA IN A FAIREY SEAPLANE – THE ADVENTURES OF WING COMMANDER GOBLE AND FLIGHT LIEUTENANT MCINTYRE ON THEIR PIONEERING 1924 FLIGHT

DR TIM COYLE

Of the series of long distance survey flights carried out by the RAAF in the 1920s, the 1924 round-Australia flight of Wing Commander S. J. Goble (navigator) and Flight Lieutenant I. E. McIntyre (pilot) in a Fairey IIID seaplane was the most noteworthy. Beginning and ending at Point Cook, Victoria, the flight circumnavigated the continent of Australia covering 7182 nautical miles. The flight was undertaken to:

(a) evaluate a seaplane-based air defence route along the east coast to Thursday Island by examining the coastline and harbours for permanent bases;

(b) ascertain the suitability of the Fairey IIID seaplane for cooperation with the Royal Australian Navy in the hydrographic survey of the Great Barrier Reef, and

(c) determine the effect of tropical conditions on the airframe, engine and components.¹

Since the formation of the Air Board and the Civil Aviation Branch of the Defence Department in 1921, funds had been allocated for the purchase or lease and the preparation of suitable landing grounds on overland routes considered to be of strategic importance. Many of these locations had been surveyed by motor vehicle; however, the disadvantages of the overland coastal surveys were the absence of roads, the difficulty of much of the country, and the lack of population. A proposal to undertake coastal surveys by naval ships was first suggested in 1919 and periodically reviewed until 1923 when a decision was made to use aircraft. While more economical than using ships, aerial surveys presented considerable risks to the crews.²

The planning and preparations for the flight included the positioning of spares and mechanics at Thursday Island and Perth, which were to serve as repair and overhaul bases. Fuel, oil and water were placed at locations around the coast and flight progress reporting arrangements were negotiated with local authorities.³ The aircraft was fitted with extra fuel tanks and underwent radiator, engine and airframe modifications. Apart from the pre-positioned equipment, the aircraft carried a wide range of spares for running repairs.⁴

Navigation preparations comprised an ACO Type 259 compass for the pilot and an ACO 6/18 aperiodic compass for the navigator.⁵ The aperiodic compass was fitted to a wooden platform and mounted inside the fuselage with the dial flush with the top of the fuselage behind the observer's cockpit. It was thus able to serve as both the master compass and a bearing plate.⁶ The reason for not fitting two aperiodic compasses to the aircraft may have been due to the short supply of the instruments, which was exacerbated by the distance of Australia from the United Kingdom suppliers. The Type 259 compass failed twice in-flight; the glass burst and spilt the alcohol damping fluid because the liquid expanded. The aperiodic compass functioned perfectly throughout the flight.



Goble had recently complained about the pilots' compasses fitted in RAAF Fairey IIID seaplanes. He and McIntyre had carried out a Melbourne to Hobart reconnaissance flight in February 1924 during which the Type 5/17 compass fitted in the pilot's compartment was judged to be 'absolutely useless, swinging as much as 45 degrees either way, and making a steady compass course impossible.'⁹ He noted that the standard pilot's compass in Fairey seaplanes in England was the Type 259 but lack of funds precluded the purchase of this type of compass in that financial year. To rectify this deficiency an aperiodic compass was fitted behind the navigator who directed the pilot by hand signals. This arrangement proved satisfactory and was adopted for the round-Australia flight.

Wing Commander Goble had held a commission in the Royal Naval Air Service and had transferred to the Royal Air Force on its formation in April 1918. Goble was acting as

Fairey IIID floatplane of the type used by Goble and McIntyre for the round-Australia flight. Photo: RAAF Historical Section.



ACO Type 259 compass. The Type 259 fitted to Goble's aircraft was similar.⁷



ACO 6/18 aperiodic compass. The damping system can be seen through the glass.⁸

AROUND AUSTRALIA IN A FAIREY SEAPLANE

air adviser to the RAN in the period immediately prior to the formation of the RAAF during discussions between the navy and army to determine these services' air support requirements. The Chief of Naval Staff, Rear Admiral P. Grant, RN, declared that because the new service would be providing air support to both the navy and the army, the head should be a naval nominee because the navy was the senior service. This annoyed the army, particularly as Lieutenant Colonel Richard Williams, the head of the pre-RAAF Australian Flying Corps, was a permanent army officer who had commanded air forces in the field during World War 1 and was senior to Goble. The Secretary of Defence, T. Trumble, decided on a compromise whereby both Williams and Goble were appointed wing commanders in the new service with Williams as the senior. The four-member Air Board included Williams as First Air Member and Director of Operations and Intelligence, and Goble as Second Air Member and Director of Personnel and Training. Williams and Goble experienced an uneasy professional relationship over the ensuing 16 years with Goble assuming the position of Chief of the Air Staff in Williams' absences on staff courses and secondments to the RAF.¹⁰

THE ROUND-AUSTRALIA FLIGHT

The flight was characterised by difficult weather conditions which reduced visibility to dangerous levels, and by unrelenting strain on the crew in flight and after landing. Of the over 7000 miles flown, some 2500 were through heavy rain and low visibility.¹¹ After a difficult day's flying the aircraft required laborious refuelling from four gallon petrol tins, with the fuel filtered through chamois. Hazardous landing areas threatened to hole

the floats and strand the aircraft, requiring Goble and McIntyre to manhandle it out of danger. Serious mechanical breakdowns, particularly an unscheduled engine change at Carnarvon, added to the strain.

The first incident of bad weather occurred on the afternoon of the first day of the flight, 6 April 1924 when, after passing Paynesville on Lake Victoria, the weather deteriorated to such an extent that the crew descended the aircraft to 250 feet. After a refuelling stop at Eden, NSW, the bad weather continued to Sydney and the aircraft flew at 150 feet with practically no visibility. Leaving Sydney the next day they flew at 100 feet but were forced to land north of Newcastle. The islands at the entrance to Port Stephens were obscured so the aircraft alighted on the Myall River, north of Port Stephens.¹²

Torrential rain flooded the floats which required the aircraft to be grounded to save it from sinking. The crew telegraphed the Air Board requesting a type 5/17 pilot's compass from Sydney stocks to be forwarded to Newcastle for installation in the aircraft. The reason for this was not stated; however, the 259 compass fitted in the pilot's cockpit may have lost its alcohol damping fluid as stated in the 'alterations and modifications' of the report.

Once the floats had been repaired and the weather cleared, the aircraft departed Myall River before the arrival of the 5/17 compass, which was sent on to Townsville.¹³ The flight proceeded without further incident via Southport to Gladstone, Queensland, where refuelling was carried out in extreme discomfort due to mosquitoes and sand flies. The task was completed at 0200 hours on 11 April but sleep was impossible because of the constant insect attacks.

On arrival at Townsville on 11

April, the aircraft was hoisted out of the water by crane and all seams painted over with carbon expanding paint to enhance the water tightness of the floats. The aircraft remained there until 14

April and adding to the crew's anxieties was the attention of a large crowd with a number of individuals attempting to 'souvenir' articles from the aircraft. More seriously, McIntyre's feet, ankles and eyes swelled as a result of the insect bites and a cut finger became septic. He was given medical attention which was repeated at Cooktown. Departure for Thursday Island, at the tip of Cape York, was delayed by a day due to impossible flying conditions and when they did take-off, the ensuing flight proved to be most trying. Continuous heavy rain practically obliterated visibility for the majority of the flight. A particularly heavy cloud-burst caused them to alight on the sea and when proceeding they had to steer a compass course outside the Barrier Reef to avoid colliding with cliffs.¹⁵

A RAAF corporal rigger had been positioned at Thursday Island to carry out running repairs and servicing because this location was regarded as the end of the first stage of the flight. The aircraft was taken from the water on a boat trolley, the carburettors and magnetos overhauled and the floats replaced from pre-positioned spares. The 5/17 compass was finally fitted but the lack of adequate facilities precluded 'swinging' to correct deviation.¹⁶ Consequently the 5/17 was not used for navigation but simply as an aid for the pilot to maintain the heading provided by Goble from the master compass. McIntyre was directed onto



ACO Type 5/17 compass. The horseshoe-shaped structure is the correction mechanism to damp out aircraft magnetic interference known as deviation. This type was used for small machines only.¹⁴

the prescribed course and assisted in maintaining it by a pair of string reins attached to his arms, which Goble manipulated.¹⁷

The crew left Thursday Island at 0640 on 23 April for Darwin via a fuelling stop at Elco Island. Flying directly from Thursday Island towards a landfall at Cape Arnhem, they were out of sight of land for 350 miles. From 0830 two engine valves began sticking, causing vibration and loss of power, and some apprehension to the crew. Goble used the bearing plate feature of the 6/18 aperiodic compass to sight on 'white horses' on the sea surface to find the wind direction and speed, from which he calculated drifts and wind components.¹⁹ There was an eight to 10 foot swell running, providing numerous breaking surface waves on which to take drift sightings. The wind speed and direction on departure from Thursday Island was logged as south-east at 20 mph (17 knots), which would have provided a six-knot tailwind and a 10 degree drift to starboard against the track required of 245 degrees magnetic. At 0755 Goble noted the wind had veered to the south, continuing the 10 degree starboard drift but imposing a headwind of approximately six knots. A further wind shift to the south-southwest, logged at 0920, reduced the ground speed from 91 to 68 knots. By this time the aircraft was flying at 800 feet and the wind speed had increased from 17 knots to approximately 35 knots. The starboard drift increased slightly to 13 degrees. Finally, at 1030, the wind returned to a south-easterly direction and the ground speed increased to 91 knots. For this first RAAF flight out of sight of land, Goble's judicious wind-finding and course corrections to McIntyre resulted in a landfall at Cape Arnhem with a two-mile navigational error.²⁰

At Elco Island the engine was examined to rectify the sticking valves

and it performed creditably for the first half of the flight to Darwin. However, the trouble returned requiring more work at Darwin where the crew re-seated the valves and fitted stronger springs. This work occupied two days in hot and uncomfortable conditions and temporarily restored the engine performance, which the crew hoped would be sustained until the planned engine change at Perth²¹.

Leaving Darwin on 27 April the aircraft flew to Napier Broome Bay. The route was coastal to Cape Ford, then over water to Cape Rulhieres, thence to Napier Broome Bay where they refuelled. The refuelling process involved carrying eight-gallon tins of fuel to the beach, decanting them into two four-gallon tins and pouring the contents through chamois strainers into the aircraft tanks. This was done while the aircraft was floating on a receding tide thereby progressively extending the distance they had to transport the fuel. Following fuelling, the aircraft was anchored 200 yards from the shore to catch the night tide that would re-float it around midnight. The crew planned to stand-by to keep the aircraft afloat until daybreak before departing. However the night tide fell short by around six feet and did not arrive until 0300. The water simply lapped the floats and the aircraft remained aground. The crew ran to the Catholic mission and awoke the



inhabitants who all rushed to the aircraft and, with the engine under full power, pushed it into deeper water. The manhandling caused the left hand float to become badly sprung, half-filling it with water.²³

The damaged float made for a difficult take-off on 28 April but the flight to Broome was otherwise uneventful. A RAAF engine fitter joined the expedition at Broome and remained with it until Perth. The engine again lost power en-route from Broome to Carnarvon and the sticking valves continued until arrival. The next day the engine could not develop sufficient power for take-off so two further days elapsed in attempting to rectify the problem. The crew realised that the engine had to be completely overhauled but the exposed conditions precluded this. Goble decided to carry out a complete engine change and ordered the engine that had been pre-positioned at Perth to be sent to Carnarvon. Because there was no ship due in Carnarvon

Approximate aircraft track Cooktown to Thursday Island 16 April; 395 nm. The black rectangle marks the point at 13 degrees 40 minutes south where bad weather concealing cliffs forced the flight to track outside the Barrier Reef on a compass course at a very low altitude.¹⁸

AROUND AUSTRALIA IN A FAIREY SEAPLANE

for two weeks, the engine was railed to Mullewa and conveyed from there by truck, a distance of 700 miles. Two RAAF fitters accompanied the engine to Carnarvon and it was installed and flight-tested on 10 May²⁴.

The aircraft arrived at Perth the following day after a difficult flight. Weather conditions were adverse, requiring flying at 500 feet in heavy rain, until they landed at Geraldton to refuel. During the refuelling, unruly children threatened to damage the aircraft by their antics. The effects of this were felt on departure, again into poor conditions. The auxiliary fuel tank ran dry after 40 minutes, instead of the expected two hours, and although tanks were switched to the main, the source of the leak had to be investigated so the aircraft alighted on the open sea. The children had removed the binding wire from the drain cock thereby allowing the auxiliary tank to drain unchecked. The take-off in rough seas was so dangerous that the aircraft was almost lost.²⁵



Flight Lieutenant I E McIntyre, left, and Wing Commander S V Goble following their arrival in Fairey III D seaplane AIO-3 of the RAAF, 24 April 1924. Courtesy NT Library PH 0238/1698, Peter Spillett Collection.

From Perth the crew flew to Albany, remaining until 15 May when they departed for a fuelling stop at Israelite Bay on the western extremity of the Great Australian Bight. Having met very heavy rain requiring the aircraft to descend to 100 feet, the crew arrived at Esperance Bay, 235 nautical miles from Albany. No shelter

could be found there so they decided to continue to Israelite Bay, a further 115 miles. En-route the visibility was so poor that the crew had to zigzag to avoid hitting cliffs and islands which they came upon with little warning. Approaching Israelite Bay they could see neither the sea nor the coastline. They flew out to sea and circled an island in the Eastern Group, gradually climbing in a clear patch until a break in the rain enabled them to steer a compass course to Israelite Bay where an overnight vigil was required to safeguard the aircraft from being damaged in the surf.²⁶

The next day the aircraft covered the 350 nautical miles to Ceduna for refuelling and an overnight stay. The coast from Israelite Bay to Eyre, a distance of 155 nautical miles, was lined with sheer cliffs. The aircraft flew at 800 feet under an overcast which held them at that height. Goble judged that they would not have been able to safely cross the cliffs if they had to force-land so they steered clear of the coast and flew by compass direct to Eyre. He judged the alternative of alighting on the sea in an emergency to be less hazardous. Conditions improved after passing Eyre and a planned refuelling stop at Eucla was not required so they pressed on to alight at



Denial Bay near the town of Ceduna.

The arrival at Denial Bay illustrated the added strain imposed on the crew after flying long and arduous sectors, as often the alighting areas were hazardous or otherwise unsuitable for seaplanes. As little or no information was available for many of the alighting sites, the crew had to conduct a reconnaissance of an area before committing to alighting. In the case of Denial Bay, exposed rocks at low tide required the crew to reconnoitre the bay until deciding to alight near a mud bank half a mile from the shore. Men from the town assisted the crew to refuel the aircraft.²⁸

The final two days of the flight were relatively incident-free with the aircraft flying from Denial Bay to Port Lincoln and on to Beachport on 18 May, where a RAAF officer and airman met the aircraft and assisted in the refuelling and routine servicing. The last sector, from Beachport to Melbourne, was flown in good conditions in a flight time of four hours 15 minutes. The aircraft passed Port Phillip Heads and Point Cook and was joined by an escort of service aircraft before alighting off the St Kilda pier at 1430.

This remarkable flight laid the foundations for a RAAF coastal reconnaissance and long range maritime operations capability. It

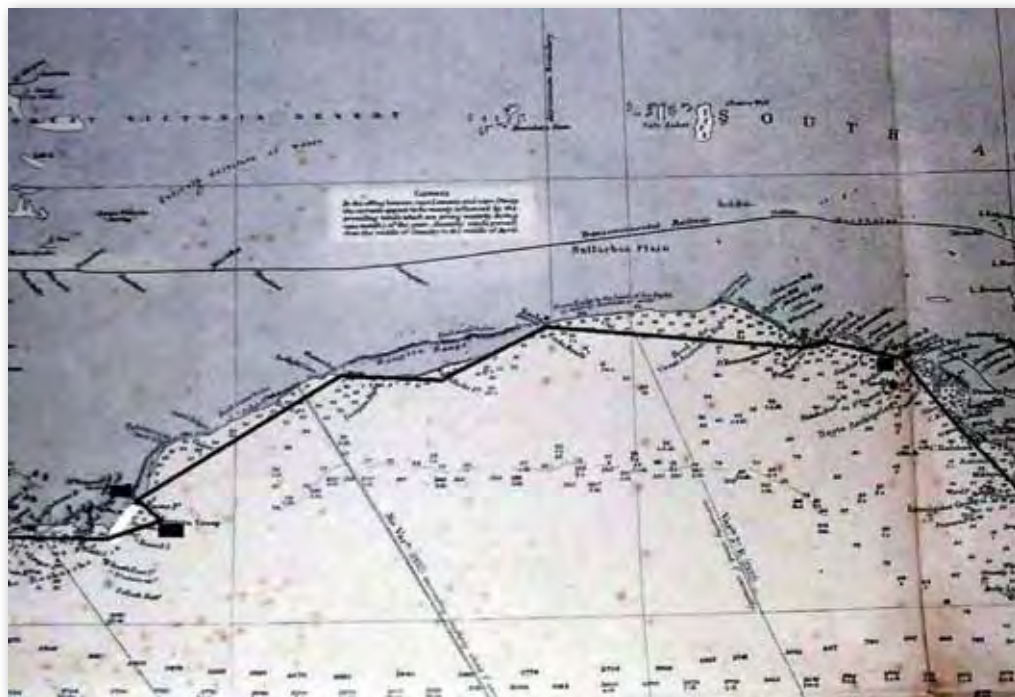
Thursday Island – Cape Arnhem – Elco Island (marked by black rectangle), 23 April 1924; 420 nm. Elco Island to Darwin, 24 April; 320 nm.²²

also established a nascent service and civilian logistics support infrastructure which could be called upon to sustain such operations.²⁹

Two outstanding examples of navigational innovation demonstrated on the flight were the over-water sector from Thursday Island to the Cape Arnhem landfall, and the arrival at Israelite Bay. To make a landfall after 360 nautical miles over-water, with a two mile error, was a notable achievement. So was zigzagging to avoid islands and cliffs in poor visibility, then using the off-shore Eastern Group of islands as a landfall to set a compass course to Israelite Bay.

Goble compiled 97 reports on geographical features and infrastructure details of the various bays, inlets and harbours in which they alighted or overflow. The reports included assessments of the suitability of bays for emergency use, for refuelling, or as permanent bases. They listed accommodation, maritime infrastructure, and transport and communications facilities which could support seaplane operations. The information provided a compendium of practical information should RAAF seaplanes need to deploy for operations in remote areas.

Goble concluded that the coast from Melbourne to Cooktown was generally suitable for seaplane operations provided support facilities such as fuelling and basic maintenance equipment were established. However, the coast from Cooktown north to Thursday Island and westwards to Darwin was unsuitable because of the lengthy distances between inhabited areas, lack of shipping to support isolated bases, and dangerous coasts. Goble suggested a 'seaplane carrying ship' might provide an alternative to an air surveillance presence in the Darwin to Napier Broome Bay area. While the remainder of the West Australian



coast was generally well supplied with sheltered bays and inlets, it was too sparsely populated to provide support facilities. Perth to Albany was not a good route but Albany was an excellent site for a base. Coastal geography to the east presented similar problems of dangerous coasts and isolated outposts until the Port Lincoln – Investigator Strait area, which was suitable. The remainder of the coast to Melbourne provided little shelter.³⁰

To meet 'minimum defence requirements,' the report recommended the establishment of a training and Bass Strait patrol base at Corio Bay in Victoria, a patrol base at Sydney to cover the coast north to Newcastle, and a north-east patrol base at Townsville with a possible temporary base at Thursday Island. One flight of seaplanes should be based at each location.³¹ Although Goble concluded the coast from Townsville to Thursday Island was unsuitable for routine operations, he thought the route might be viable if air force wireless telegraphy (W/T) stations and at least one refuelling base were established. He recommended the acquisition of a seaplane carrier to

provide a reconnaissance capability in areas unsuited to shore bases.³²

The Goble survey flight proved that a military seaplane could deploy from Point Cook, then the only RAAF base, and carry out coastal reconnaissance operations in remote areas provided basic support infrastructure was established. While many of the regions overflown on the survey were unsuitable for routine operations, with adequate planning, a rudimentary reconnaissance presence could have been mounted in an emergency, particularly if operating in cooperation with a warship. In this case the aircraft's surveillance capability could have extended the ship's ability to intercept and engage ships approaching the Australian coast. A Fairey IIID, deployed to an advanced base on Thursday Island and operating in cooperation with a RAN light cruiser, could have provided a surveillance capability covering the Torres Strait and its approaches. Details of ships of interest sighted by the aircraft could be communicated to the cruiser by wireless telegraphy. The aircraft's radius of action would be increased were the aircraft to alight

Albany to Israelite Bay, 15 May; 350 nm. The offshore marker denotes East Island which the aircraft circled searching for a clear patch after zigzagging to avoid cliffs and islands. The aircraft then proceeded on a compass course to Israelite Bay. Israelite Bay to Ceduna (Denial Bay) via overhead Eyre and Eucla, 16 May; 560 nm. Ceduna to Port Lincoln, 17 May; 235 nm.²⁷

AROUND AUSTRALIA IN A FAIREY SEAPLANE

alongside the cruiser at sea, refuel and resume the patrol. Goble's conclusions did not identify areas of particular reconnaissance interest except for the suggestion that a seaplane carrier could cover the Darwin to Napier Broome Bay segment. This area may have been considered for forward patrols against an enemy maritime raid on the populated south-west of Western Australia.

Despite the considerable achievement and the proof of concept the flight demonstrated, it did show the vulnerability of the seaplane type. Flying boats, with planing hulls rather than the fragile floats of the Fairey IIID, would have provided a more robust aircraft. By their nature seaplanes are more vulnerable to damage than landplanes. However at the time of the Goble flight, the seaplane was the most suitable for the round Australia flight and for the nascent military and national development flying on which the RAAF was embarking.³³

The flight received deserved recognition. Both Goble and McIntyre were made Companions in the Order of the British Empire, and the British Royal Aero Club awarded the Britannia Challenge Trophy of 1924 to the airmen for 'the most meritorious performance in the air during the year'. The imperial significance of the flight was not overlooked. At the trophy presentation ceremony to Goble in London, C.J. Fairey, the chairman of the company that manufactured the Fairey IIID seaplane, stated that the flight 'had re-established in the eyes of the world the prestige of British Aviation which now outshone that of foreigners after their initial post-war supremacy'.³⁴



LIEUTENANT COMMANDER
TIM COYLE RANR

Lieutenant Commander Coyle has been an active naval reserve intelligence officer for 20 years. In his civilian employment he is an adviser to Government on international arms control issues. In August 2006 he submitted his PhD thesis on the history of air navigation in the RAAF.

(Endnotes)

1 National Archives of Australia File Series A9376, Control Symbol 92, Report on Seaplane Flight Round Australia 6 April to 19 May 1924, Section "A" Fuel Supplies, 1. Division of Flight into Stages, p. 6. Other reasons for the flight were to report on 'the practicability of utilizing sea patrol aircraft, based at strategical points, in the carriage of mails etc., without undue interference with the regular training of the crews' and 'to ascertain to what height the south-east trade wind in tropical areas holds its surface direction'.

2 Ibid, Introduction, p. 3.

3 Ibid, Section "A" Fuel Supplies, p.6.

4 Ibid, Section "C" Selection, Alterations, Modifications and Overhaul of Seaplane and Engine, pp. 16 - 23. The additional petrol tank held 40 gallons. The normal fuel capacity was 102 gallons providing an endurance of five hours 30 minutes. The additional tank extended the endurance to approximately seven hours.

5 Ibid, Section "C" Pilots Compass and Navigator's Compass, p. 18. The British Admiralty Compass Observatory (ACO) devised the 6/18 'aperiodic' compass which countered the dangerous 'northerly turning error'. This error occurred when an aircraft banked, causing the compass card to assume the same banked angle. This resulted in the compass needle appearing to revolve in the direction of the turn and thus not continue to point to magnetic north. Most pilots therefore did not trust their compasses.

The aperiodic compass rapidly returned the needle to north-pointing, when deflected, by 'damping' the compass magnetic system. The damping mechanism consisted of fine wires suspended in the compass bowl liquid. The ACO 6/18, so designated because it was issued for service in June 1918, was the first practical aperiodic aircraft compass.

6 A bearing plate was used to measure the drift angle by vertical observations which in early models was a dummy compass card fitted with vanes for taking bearings. The ACO 6/18 compass as fitted could be used for both these purposes as a 'bearing plate'.

7 Wimperis, H.E., *A Primer of Air Navigation*, New York, D. Van Nostrand Company, 1920, p.34.

8 Wimperis, p. 35.

9 NAA File Series A9376, Control Symbol 22, Hobart Seaplane Reconnaissance by Wing Comm. Goble and F.Lt. McIntyre 2/2/24 to 11/2/24. The primary flight objective was to survey the route with a view to 'despatching seaplanes to Hobart to co-operate with the Fleet during exercises in Tasmanian waters'.

10 Williams, Richard, Sir, *These are Facts: The Autobiography of Air Marshal Sir Richard Williams KBE CB DSO*, Canberra, The Australian War Memorial, 1977, pp. 128 -129 and 137 - 138.

11 Control Symbol 92, Part II, Narrative of Flight, General Remarks, p. 47.

12 Ibid, Part II Narrative of Flight p. 33 -34.

13 Ibid, p. 34.

14 Wimperis, p.33

15 Control Symbol 92, Part II, Narrative

of Flight, p.35 – 37.

16 Swinging corrected the compass against magnetic influences in the aircraft which could give erroneous readings. The aircraft was placed on a rotating base, or a 'compass rose' painted on the ground and headed in various accurately pre-determined directions. Internal magnetic influences were corrected by the adjustment of compensating attachments within the compass. The residual, which could not be totally eradicated, was noted on a deviation card and posted next to the compass. The pilot, when flying a compass heading, made allowance for deviation.

17 Control Symbol 92, p. 38

18 Chart: Australia Coral Sea and Great Barrier Reefs, Published at the Admiralty 9th June 1886, New Editions to 9th October 1914, Large Corrections to 22nd July 1938; Australia (Northern Portion), London, Published at the Admiralty, 28th December 1934. Aircraft track analysis by author.

19 Control Symbol 92, Section "B" (2) Spare Parts and Gear Carried in Seaplane. There were no sea markers or navigation smoke floats listed as carried in the aircraft. These markers were designed to be thrown overboard; smoke was released upon landing on the water and the wind speed and direction measured with the bearing indicator by sighting on the smoke.

20 Goble did not record changes in wind speed; only direction. The analysis of wind components and drifts from data in Goble's log was by the author, using a Howse navigational computer.

21 Control Symbol 92, pp. 39 – 40.

22 Chart: Australia (Northern Portion) and the Adjacent Islands and Seas South of the Equator, Admiralty, London, 28 December 1934. Track analysis by the author.

23 Control Symbol 92, p. 40.

24 Ibid, pp. 41 – 42.

25 Ibid, pp. 42 – 43.

26 Ibid, pp. 43 – 44.

27 Australia (Southern Portion) 1884, London, Published at the Admiralty 20th July 1885, New Editions to 11th December 1922, Large Corrections to 3rd February 1933. Track analysis by the author.

28 Control Symbol 92, p. 45.

29 Ibid, pp. 45 – 46.

30 Ibid, Part III Coastal reconnaissance, Section "B", 2. Conclusions, p. 182.

31 Ibid, Part III Coastal Reconnaissance, Section "B", 3. Recommendations, p. 183.

32 The seaplane carrier *HMAS ALBATROSS* was commissioned into the RAN in 1929.

33 The terms applicable to water-borne aircraft are usually interchangeable. A 'seaplane' is a generic term and might refer to 'floatplanes' or 'flying boats'. The Fairey IIID was a floatplane as it rested on the water on two floats. A flying boat had a planing or boat-type hull usually with two small steadying floats positioned near the wing tips.

34 Coulthard-Clark C.D., *The Third Brother; The Royal Australian Air Force 1921-1939*, North Sydney, Allen and Unwin, 1991, p. 388.



HMAS Toowoomba approaches waiting family at Diamantina Pier, Fleet Base West, HMAS Stirling, after being deployed for six months on Operation Slipper.

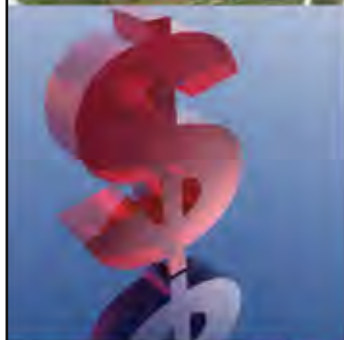


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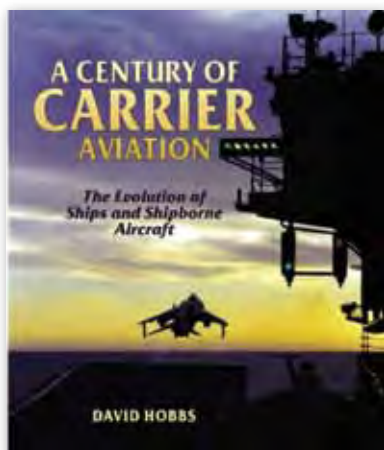
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Book Reviews



A Century of Carrier Aviation: the Evolution of Ships and Shipborne Aircraft

By David Hobbs, US Naval Institute Press, 2009, 304 pages, hard cover, illustrated. USD \$69.95

ISBN 978-1-59114-023-8

Reviewed by CDRE Jack McCaffrie RAN (ret'd).

David Hobbs is a retired RN pilot who has built a reputation as the author of a series of very good books on naval aviation. His latest offering is a large format work detailing the development of naval aviation over the last century, from an understandable RN perspective, but with frequent reference to the efforts of other navies, primarily of course those of the USN, but also the French and Japanese navies. His fascinating story is lavishly and effectively illustrated by many fine photographs, most from what must be a very large personal collection. The book follows a generally chronological thread and deals with the development of the carriers themselves, their aircraft and carrier operations.

What is most striking in the author's description of the development of the aircraft carrier is the speed with which the RN, USN and the French Navy attempted to provide suitable

operating platforms for aircraft at sea. For example, by 1910 the USN had modified a ship to enable aircraft launches and in 1917 the RN carried out the first shipboard landing. There was much trial and error involved in these developments and no small amount of courage needed by all involved. Nevertheless, despite the limitations of ships modified from their original purposes to operate aircraft, several were able to do so to limited tactical effect during World War I.

The author shows very plainly the different design philosophies adopted by both the RN and USN in the 1920s and 1930s, as they built dedicated aircraft carriers, and the operational impact of these approaches. The RN was more conservative and incorporated greater margins of safety and protection, whereas the USN approach led to larger flight decks, more flexible and effective use of them and thus much greater striking power by its air groups. These differences became manifest during World War II.

The USN maintained its carrier design advantages after the War, despite the fact that several significant design innovations, including the angled flight deck, mirror landing system and ski-jump originated with the RN. David Hobbs laments some appalling design features of the Invincible-class "through-deck cruisers" and the failure to incorporate some excellent ideas from the CVA-01 concept cancelled in 1966 by the then Labour government. Hobbs pays due homage to the USN's *Nimitz* and CVN 21 classes, the most recent and perhaps the ultimate in aircraft carrier design, and remains hopeful for the RN's latest and biggest carriers which may yet, however, be victims of the global economic crisis.

David Hobbs shows that the development of carrier aircraft has been equally fascinating, with the efforts of both the USN and RN influenced in the

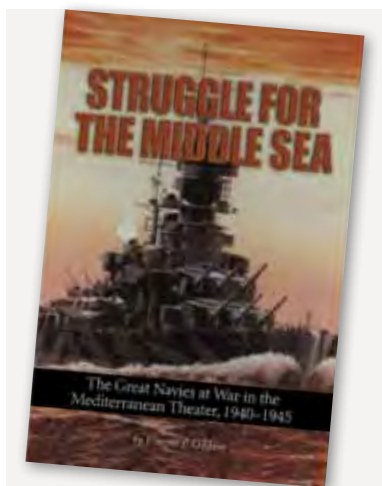
early stages by their respective air forces. For the USN this meant having to argue strongly to maintain an independent naval air arm, while for the RN, after World War I, it meant being subject to Royal Air Force control and general indifference for about 20 years. One outcome was that by the beginning of World War II, RN aircraft performance lagged that of land-based equivalents considerably and was also significantly worse than that of USN carrier aircraft. Substantial differences in operating methods also emerged between the RN and USN, with the latter favouring dive-bombing over torpedo attack for anti-shipping strike, not least because it was less risky for the aircraft and crews.

Despite the dead hand of the RAF over the years, the RN still managed to be the first to operate twin-engine and jet aircraft at sea before the end of 1945. The increasing performance of aircraft and their associated growing weight and size demanded innovation in design, and Hobbs explains in some detail two excellent British examples, the *Buccaneer* and the *Sea Harrier* short take off and vertical landing aircraft. The latter was a response to Britain's decision to discontinue building large fleet carriers, although the original interest emerged from the Kamikaze threat in the latter part of World War II. In detailing the development of carrier-borne aircraft from the beginning, the author shows clearly that the early lack of performance by embarked aircraft has all but disappeared with the current and emerging generations of tactical aircraft.

Operating aircraft from ships at sea has always been demanding, exciting and dangerous. The author illustrates this only too clearly with different aspects of flying operations described throughout the book. Flight deck and hangar deck operations, aircraft launch and recovery and the tactical control of aircraft all receive detailed treatment, which highlights differences among the major carrier operating navies – including the Japanese carriers with port-side islands and the early carriers with arrestor wires rigged for landings from both astern and ahead. The author's description of the terror associated with night vertical landings in *Sea Harriers* suggests that little of the danger has been removed from the process over 100 years.

For anyone with an interest in naval aviation *A Century of Carrier Aviation* will be a treasure trove. It may not be "everything you ever wanted to know" about naval aviation but it comes close. There is a great amount of detailed information about virtually every aspect of the business, supported by a very imaginative and comprehensive collection of photographs. If I have any quibble it is that there is perhaps too much technical detail in some places, but that is a very minor point indeed. Very highly recommended.

Book Reviews



Vincent P O'Hara, *Struggle for the Middle Sea, the Great Navies at War in the Mediterranean Theatre, 1940-1945*, Annapolis, Naval Institute Press, 2009.

xviii+324pp, Photographs, Maps, Tables, Acknowledgements, Introduction, Endnotes to text, Bibliographical references, Index
ISBN: 978-1-59114-648-3

Reviewed by Richard Pelvin

The Mediterranean was the central strategic focus of the Western Allies from 1940 to 1943 when the operational centre of gravity shifted to North West Europe. Vincent O'Hara has written an account which seeks to do two things. The first is to recount the story of the Mediterranean Campaign with an emphasis on surface warfare in that theatre. This follows two previous books in which the author successfully covers surface combat by the German and United States Navies.¹ The second object is to rehabilitate the Italian Navy's reputation which he claims has suffered badly from

historians over the years.

The book describes and analyses a myriad of surface actions in both the eastern and western basins of the Mediterranean, from a slight clash between the French and Italians on 14 June 1940 to a small but complete victory by two British destroyers against three German torpedo boats on 18 March 1945. In between are the major actions of Calabria, Cape Spada, Cape Spartivento, Matapan, the British surface attacks on the Axis convoys to North Africa and the two Sirte Gulf actions. The bulk of the book concerns itself with actions between the British and Italian Navies between 1940 and 1943, but the author also includes actions involving the French and Germans. He includes operations in the Red Sea, which are relevant to the Mediterranean theatre, but less relevant is the curious inclusion of Operation MENACE, the British/Free French attempt to take Dakar in Senegal. A final chapter discusses the minor actions that occurred between 1943 and 1945.

Each account is preceded by a table giving the date and time of the action, the weather conditions and sea state in which it was fought. The force commanders and the vessels involved are listed with an assessment of the level of damage received in the engagement. The actions are described clearly and the major encounters are illustrated with useful maps.

A second aspect of Mr O'Hara's book is a determination to overturn the myths of an ineffective, comic opera Italian Navy. He believes that these started during the war in Allied propaganda and continued 'in muted form' in post-war British and American histories. This is to a certain extent true and Mr O'Hara is not the first to point this out. He follows closely in the footsteps of James Sadkovich

in his 1994 book.² But a book emphasising surface combat is not the best vehicle to demonstrate this contention as, by the author's own admission, the Regia Marina's performance in surface action against the Royal Navy was poor. As he states, by the end of 1940 the British and Italians had fought eleven surface actions in Mediterranean and Red Seas. In these 'Allied surface forces had sunk a cruiser, three destroyers, and torpedo boats and had damaged eight others. In turn, Italian surface forces had damaged five British cruisers and five destroyers, most of them superficially' (p 75). And those 'eight others' damaged included a battleship, a heavy and a light cruiser. Indeed, in his conclusion Mr O'Hara notes '...the Royal Navy's superiority in intelligence, doctrine, technology and resources...' (p 260).

As Mr O'Hara's account makes clear, the Italians had problems with night fighting, air/surface cooperation and, mostly, were insufficiently aggressive. The RN usually annihilated the convoys it attacked, whereas Italian interceptions with heavy forces never achieved decisive results. The Italian Navy was supreme in the Eastern Mediterranean from December 1941 until mid 1942 when the Royal Navy had no battleships or carriers available. Yet it had made little direct difference to British naval operations. Axis successes were mostly by air forces. For example, in the case of the two Sirte Gulf actions, the RN had no battleships or carriers to counter the major fleet units deployed by the Regia Marina against two convoys defended by light cruisers and destroyers, but the attacks were never pressed home. It was air attacks that caused the severe losses to the convoys.

The Regia Marina's most effective strokes were not achieved by surface action but by the minefield that devastated Forces B and K and the brilliant miale attack on Alexandria that put the battleships Queen Elizabeth and Valiant out of action. This is not to say that the Italian Navy lacked courageous men, as O'Hara amply demonstrates in his account of the Espero action and the conduct of Lupo and Sagittario in defence of their convoys off Crete.

Mr O'Hara outlines the strategies to be followed by the both navies at the outset of hostilities. He claims that the Royal Navy was unable to achieve theirs whereas the Italians essentially did by

¹ The German Fleet at War 1939-1945, Annapolis: Naval Institute Press, 2004; The US Navy against the Axis, 1939-1945, Annapolis: Naval Institute Press, 2007.

² James Sadkovich, *The Italian Navy in World War II*, Westport: Greenwood Press, 1994

successfully passing the majority of men and materiel dispatched to North Africa. However the Italian success was facilitated by the fact that the only British base from which effective attacks could be made was Malta, but the basing of effective forces was often obviated by intense air assault. When the British could base sufficient forces there, they were effective.

British naval strategy was constrained by the resources available, especially after the fall of France. It was affected by the tactically challenged British Army and the imposition of unrealistic strategies in respect of the Balkans. These left the RN with the siege of Tobruk to support and the difficulties of the campaigns in Greece and Crete, difficulties which could hardly be foreseen pre-war. Yet for all this the RN was able to supply Tobruk and relieve the Australian garrison, transport troops to Greece and evacuate them, see off the attempted seaborne invasion of Crete and evacuate many thousands of troops from there. In doing so it took heavy losses, but in general it succeeded. Despite the great cost, Malta was held and was available as an air and naval base when the time came to land in Italy. Had it fallen it would have needed retaking.

In these operations the dangerous enemy was not the Italian surface forces, which were well beaten at Matapan, it was the German submarine and air forces. Yet in a book emphasising surface warfare they receive little attention. Suffice to say the Germans were responsible for sinking a battleship and two carriers and crippling another battleship and two carriers, never mind the losses inflicted off Crete and on the Malta convoys.

As the book is avowedly about surface action, it should not be read as an overall history of the Mediterranean naval operations, as its title promises.

Convoys, air attacks, submarines and amphibious operations are mentioned only where they provide context to the surface battles. As such I recommend *Struggle for the Middle Sea* as a valuable contribution to the literature on the Mediterranean naval war which highlights many lesser known actions, including those fought by the French and German navies. I have, however, considerable reservations as to its conclusions regarding the relative effectiveness of the British and Italian navies, which the author needs to address in a wider context than surface actions. For a wider ranging and balanced account of Mediterranean operations Greene and Massignani remains the standard work.³

3 Jack Greene and Alessandro Massignani, *The Naval War in the Mediterranean 1940-1943*, London: Chatham, 1998



Pearl Harbor Attack

Reviewed by CMDR Mark R Condeno, Philippine Coast Guard Auxiliary by Edwin P Hoyt, Sterling Point Books, Sterling Publishing Co. Inc.

(www.sterlingpublishing.com), 387 Park Avenue South, New York, NY 10016, 2008, 130 Pp, \$ 6.95, ISBN-13: 978-1-4027-5704-4

The strikes on Pearl Harbor are the subject of hundreds of books, reports, monographs and articles from the past to the present. Naval historian-author Edwin P Hoyt (*Leyte Gulf*) takes us in *Pearl Harbor Attack* to that tragic Sunday morning of 7 December 1941 over the Hawaiian Islands. He lucidly narrates the events of the day of infamy in twelve chapters, beginning with a discussion of the roots of conflict and why the Japanese went to war.

Hoyt then proceeds to provide the reader a background on the Japanese strategy, force composition and key officers of the Pearl Harbor strike force. He details the subsequent warnings of war with the United States and Japan hours before the first bombs fell on the US Pacific Fleet base. The four succeeding segments of the book capture the opening of hostilities as the destroyer *USS Ward* (DD-139) made contact with a Japanese Midget Submarine, and then continues through the first waves of attack as the bombs fell on battleship row.

Notable sections compose the eyewitness accounts of four Pearl Harbor veterans namely George D Phraner, an Aviation Machinist Mate aboard the *USS Arizona*, Dr. Adolph Mortensen of the *USS Oklahoma*, Technical Sergeant Joseph Pezek of the US Army Air Force at Hickam Field, and Marine Corps Private First Class Art Wells on board the *USS Pennsylvania*.

The closing chapters cover the aftermath of the attack, the United States declaration of war against Japan and the author's afterword of how Pearl Harbor united the American nation with the resolve of combating the Axis war machine.

The book is in the category for young adult readers. It is well written and researched. I found remarkable the accounts of the veterans. Of new information to this reviewer is the role of the liner *Taiyo Maru* as a spyship and the presence on board of IJN officers.

Pearl Harbor Attack is well depicted with 15 photographs, three maps showing Asia, the positioning of US warships, and the force composition and route taken by Japanese aircraft. A silhouette chart of the Japanese Fleet is also included. A cast of characters list and index supplement the book. *Pearl Harbor Attack* would be a valuable gift to today's generation and is a significant addition in the literature of naval history.

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Image: Eye in the Sky

Visions from the Vault



Damage to HMAS Sydney's funnel port and starboard

One of the most recognisable photographs of the Australian Navy during World War II portrays members of HMAS Sydney's ship's company peering out from a large hole on the port side of her forward funnel; the sole hit sustained in the engagement with the Italian cruiser *Bartolomeo Colleoni* on 19 July 1940.

These two photographs provide a somewhat different perspective on the damage caused by the enemy shell. According to reports, having torn 'a hole 3 feet square' in the port side, the explosion emerged on the starboard side, on the way damaging gratings, ladders and stiffening angles inside the funnel. Many splinters were found in the boiler room, while others caused superficial damage to the aircraft catapult, and three of the boats stored on the upper deck. Fortunately the damage was largely cosmetic and no casualties resulted.



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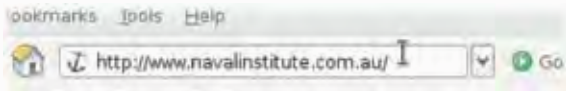


Figure 1

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

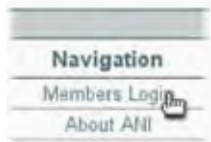


Figure 2



Figure 3

LOGGING IN TO YOUR ACCOUNT

Once you have your account details, you are ready to login and access the new features of the site. In order to login, navigate to the website (figure 1) and click the “Members Login” item (figure 2). Enter your member ID and password as they were provided to you, then click the “Login” button. The case of the member ID and password are important: i.e. “CaSe” and “case” are considered entirely different words by the authentication system. Each letter of the password will appear as a single “*” to prevent others from seeing your password as you type. If you have entered your details correctly, you will be presented with the news page. The grey status bar at the top notifies you of the account you are using (figure 4). You are now able to access all of the new features of the site.



Figure 4

LOGGING OUT OF YOUR ACCOUNT

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

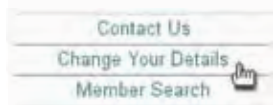


Figure 5

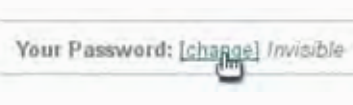


Figure 6

CHANGING YOUR DETAILS

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

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



Figure 7

Figure 8

PARTICIPATING IN THE FORUM

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

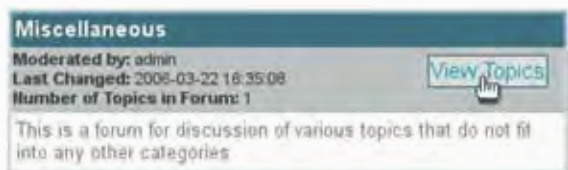


Figure 9

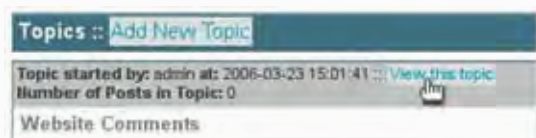


Figure 10

FURTHER QUESTIONS

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

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

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THE AUSTRALIAN NAVAL INSTITUTE

ABN: 45 988 480 239

http://www.navalinstitute.com.au

PO Box 29 Red Hill ACT 2603, AUSTRALIA

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