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Chairman's Comments

This issue of the *Australian Defence Force Journal (ADFJ)* continues the revised format for the *Journal* and builds on the premise of promoting debate on matters important to defence and security, both national and international. In recognition of the 200th anniversary of the battle of Trafalgar, this issue has a maritime theme with articles on the battle and Admiral Herbert William Richmond.

This issue also contains articles on topics of current interest such as detecting terrorist activities, and the health consequences of military deployment for individuals. As always, the Editor looks forward to comments on the articles and submissions for publication in future issues.

As part of the process of reinvigorating the *ADFJ*, the Board of Management has undertaken a review of the current distribution of the *Journal*. As a result a new distribution list is being implemented with effect from *ADFJ* No. 169. The new distribution will primarily affect recipients within the Defence organisation. If you would like to be included on the new distribution list, please contact the Editor on (02) 62660591, or send an e-mail to <publications@defence.adc.edu.au>. Your e-mail should include your position title and location within Defence.

Please note that electronic copies of the *Journal* are available from the *ADFJ* website at <<http://www.defence.gov.au/publications/dfj/index.cfm>>.

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CDF's Address to the Defence Senior Leadership Group*

An abridged version of the address that Air Chief Marshal Angus Houston gave to the Senior Leadership Group on 4 August 2005

I think it's very important that early in my term as Chief of the Defence Force I have a chance to indicate to you my vision for the Australian Defence Force (ADF) and my intent, as described by seven fundamental themes.

Vision

The ADF needs to be balanced because we have to remain poised for uncertainty in our strategic circumstances. If we look out into the longer-term future, we see the possibility of strategic competition in our region between the big powers and closer to home we see the potential for instability in the immediate neighbourhood. We also face a very lethal asymmetric threat. So I think we have to be balanced and I think we also have to be responsive to what we might have to do in the near term. It means that we have to be a very adaptable defence force and we need to be very flexible in the way we employ it. I think the following vision summarises what we're all about.

A balanced, networked and deployable force, manned by dedicated and professional people, which excels at joint and coalition operations.

Let me now describe my intent in seven themes.

Theme One—Our People

Our people provide our capability, our people enable our capability and it's imperative that we, as a leadership team, work tirelessly for the welfare of our people. That's something that all commanders do but I just want to reinforce that it is going to be a very high priority for me.

We need to empower our people. Once we have skilled and experienced people we have the opportunity to empower them. When you empower people you form a direct connection to innovation and creativity. We need to let people get on with the job so that they are excited by what they have to do and they produce good results for us. In my experience, micro-management and innovation just don't go together.

I think it's also important that we concentrate on some of the very demanding longer-term demographic issues here in Australia. We need to be able to win our share of quality people. We have appointed a one star to head up recruiting and he has an important job in front of him. Alongside him another one star, who will be working busily on strategies to improve our retention. Over the last 18 months we've seen a turn around from a very favourable set of circumstances to one that causes us a little bit of concern. It doesn't surprise me that we are losing some people—our people are very good and they are highly attractive to other employers. However, we are doing an external review for recruiting and retention that will be able to give us some innovative strategies whereby we can compete effectively in a very competitive market.

Theme Two—Our Values

I want to see our people treated with care, consideration and compassion. I want to see us leading by example. Sure we've got to be assertive and decisive, but we've got to balance that with the right approach to looking after our people and taking care of our people. And if you look at the Military Justice Report from the Senate you'll see that there have been some instances where our people have not been treated very well. I expect you to get out there and ensure that your subordinates, right down to the lowest level in your organisation, are treating our people in the right way.

Everybody under your command, and I mean everybody, should be treated with respect and get a fair go. That's the Australian way, that's the ADF way and I expect to see that right across the three Services and right across the whole Defence organisation.

Theme Three—Our Operational Performance and Preparedness

The bar is set very, very high for the new leadership team. The ADF has performed superbly on operations for many years. I want that to continue. The way we ensure that it does continue is to put the same emphasis on individual training, collective training, of the development of doctrine and the maintenance of very high military standards. At the end of the day, we prepare our people very, very well and that must continue. The emphasis needs to be on preparedness to ensure performance. I'm vitally aware that it's the three Service chiefs and their teams who do those vital raise, train and sustain functions—they give us the enabling capability to be successful on operations.

Theme Four—Our Strategic Direction

There's a strategic review running now and out of that will come *Strategic Update 2005*. What we need to do concurrently and subsequently is produce a full suite of subordinate Departmental level strategic documents that are congruent, coherent and comprehensive in the provision of direction to the Defence organisation. For example, we have to update Australia's Military Strategy, which will come from Defence Planning Guidance and embedded within that I would hope that we have our Vision, our Mission and our Values up there in bright lights. I'm very confident that we will be able to come up with what is required.

Two internal documents in particular will emerge from this effort. One, which will come from the Defence Capability Strategy, is a document that I will call *Defence 2015*. We need to understand what the ADF will look like in 2015 and we need to understand how we are going to fight in 2015. We also need to understand what the challenges are in the far future and we'll be developing a document, which I will call *Defence 2030*. We need to be thinking right now about some of the technologies that are going to be available then and we need to start working on those technologies right now. Creating *Defence 2015* and *Defence 2030* within a comprehensive suite of strategic level documents will be an important part of the work that we need to do in my tenure.

Theme Five—Our Capability

We've got a lot being delivered in the *Defence Capability Plan* (DCP) and with the much-improved performance of the Defence Materiel Organisation (DMO) as a consequence of the Kinnaird Review, we are working hard to get that equipment delivered on time.

But bear in mind it's just equipment until we do all the coordination of the fundamental inputs to capability. We need to sort out how we're going to use the equipment, we need to write the doctrine, we need to write the training plans, we need to do all of that important work that turns the equipment that arrives from the DMO into a capability that's optimised for the sorts of operations we're likely to conduct.

Theme Six—Our Relationships

I look back on when I first came into the Defence Headquarters, back in the mid 1980s, and I remember a very corrosive environment where in-fighting was rife. Thankfully those days are well and truly in the past but I want to put you all on notice that any sort of competitive behaviour, any sort of tribal behaviour, is something that I will not be sympathetic to. I'm as one with the Secretary. We work very closely together. We'll work very cohesively together and I expect all of you to be doing exactly the same thing. If you all do that, everybody else in the organisation will do the same thing.

It's all really about leadership by example and at the end of the day I never ever saw anything constructive come out of an adversarial relationship or a highly competitive relationship. What we need are relationships with the four "C's"—good communication, good cooperation, a lot of consultation and a lot of coordination.

Theme Seven—Our Governance, Management and Administration

This is not just a civilian issue. This is a challenge that affects each and every one of us. Military leave records, stocktaking and our financial management are areas where a lot of work has been done. I have the view that if we can sort out all of these housekeeping and administration issues, we will put ourselves on a much better footing.

Conclusion

So there are my seven themes from which I hope you have a much better idea now of where I intend to go in terms of leading the Australian Defence Force. I'm immensely proud of the Australian Defence Force and I think it's an organisation that has done wonderfully well in recent times. The job of the Senior Leadership Group is to make sure that we look after our people to make sure that we continue to kick those very important goals here in Canberra, in the regions and out on operations.

* The Defence Senior Leadership Group comprises all star-ranked military officers and all Civilian Senior Executive Service (SES) officers including Reservists.

Re-evaluating the Battle of Trafalgar

Dr Gregory P. Gilbert

This article re-evaluates Lord Nelson's battle of Trafalgar in terms of modern strategic concepts. Trafalgar may be seen as one conflict within the broader Napoleonic naval war of attrition which ultimately led to the British securing temporary control of the sea and enabling them to exploit that sea control. Of course these views are not all that new, having been expressed repeatedly by numerous naval strategists for at least 120 years. However, they have not filtered through to the wider public's imagination, an imagination that preferred images of national naval heroes, daring and bloodcurdling fleet encounters and the belief in Britain's destiny to 'rule the waves'. After 200 years it is high time for the public misconceptions of decisive naval battle to be left behind, so we may achieve a lasting acknowledgement that success in war may only arise from a long-term and ongoing commitment to strategic policy, administration, personnel and capability.

On 21 October 1805 a British fleet, under the renowned Lord Horatio Nelson, attacked and defeated a more numerous French and Spanish combined fleet off the Spanish coast at a place called Cape Trafalgar. By the end of the day Nelson's fleet with 27 ships of the line had destroyed one and captured 17 enemy ships, although Nelson himself was shot and died of wounds at the moment of his great victory. The story of this conflict rapidly grew into a British naval legend, so that by the late 19th century it was seen to be the quintessential example of a decisive naval battle, one that resulted in over 100 years of British naval supremacy. This is the story that has been accepted by innumerable school children and naval strategists alike; however, as with many historical tales, elements of myth and propaganda have had a large influence on how many see these events.¹

This year 2005, being the 200th anniversary of Trafalgar, presents a timely opportunity to re-evaluate the battle's strategic circumstances in terms of modern naval doctrine and strategic visions.²

Background

The Napoleonic Wars of 1803–1815 saw the domination of the British Empire with its mercantile capitalist system over the centralised continental economic system of the French Empire, whereas the war at sea during the Napoleonic Wars may be seen as a final chapter in the long struggles between the French and the British over maritime supremacy.³ The Peace of Amiens signed in March 1802, was little more than a truce that allowed Emperor Napoleon Bonaparte to enact tariff barriers that blocked British trade and to consolidate French control in Holland, Belgium and Italy.⁴ In May 1803 the British refused to leave the Mediterranean base at Malta as they had originally agreed to do by the Peace of Amiens, and in a surprise move declared war and promptly seized as many French merchant vessels as possible.

In order to counter Napoleon, the British were required to prevent an invasion of Britain itself, to defend their trade, and to defend their outlying territories across the globe. Their overall

strategy to meet these requirements, adopted by the First Lord of the Admiralty Earl St Vincent, was developed from the Admiralty's long experience of naval war against France.⁵ First, a close blockade of the French Atlantic fleet would prevent a substantial invasion across the channel. The decision to block the French warships closely, even though this was a dangerous, arduous and high maintenance task, was necessary to minimise the risk of French fleet units slipping past the blockade and temporarily breaking British control of the sea. Even with an effective close blockade there was a chance that a few vessels could have penetrated in bad weather or perhaps during a feint by a second force. Second, it was also necessary to consider the likelihood of a French raiding force making a temporary landing on the British coast or attacking merchant vessels along British sea lines of communications. The British Army and light naval forces were organised to oppose such French raids. Third, the Admiralty also allocated a high priority to the defence of sea communications, even though the allocation of British naval units to counter attacks on merchant shipping diluted the number of vessels available for warfighting. In the Mediterranean Lord Nelson, although often complaining about his lack of frigates for protection of trade and sea communications, preferred to reduce his battle fleet fighting strength than expose the Mediterranean sea communications to attack by raiders. 'No man ever grasped more clearly than Nelson that the object of naval warfare was to control communications, and if he found that he had not a sufficient number of cruisers to exercise that control and to furnish eyes for his battle-fleet as well, it was the battle-fleet that was to suffer.'⁶

Plans were enacted by the Admiralty to defend sea communications across the world's oceans, while orders were given for maritime power projection operations in the West Indies. By 1805 over 540 frigates and sloops were in service with the Royal Navy, mostly in defence of commerce. In 1803, the Admiralty had sent a fleet under Sir Samuel Hood to capture St Lucia in the West Indies, while a squadron under Commodore John Loring supported the Dessalines independence struggle at Haiti. The West Indies station was protected by a sizeable force including, by 1805, four ships of the line and over 20 frigates. Concurrently nine ships of the line and 17 frigates were stationed at the Cape of Good Hope and in the East Indies.

Despite these deployments, the centre of gravity for naval operations between 1803 and 1805 remained in European waters. Wishing to decide the issue once and for all, Napoleon made preparations for an invasion of Britain, assembling a flotilla capable of transporting 100,000 troops across the English Channel. The British responded with a blockade of this invasion fleet around Boulogne, using mostly gunboats and similar craft to force the French to seek refuge within their heavily defended harbours. In order to release this invasion fleet, the French Navy's ships of the line would need to break the blockade of small craft. In turn, however, the French warships were also blockaded by a strong force of British warships, the Channel Fleet under Sir William Cornwallis. The British strategy was to prevent the major elements of the French fleet from going to sea, and this was achieved through the application of close blockades at the principal French Atlantic harbours of Brest and Rochefort. For as long as Cornwallis's Channel Fleet controlled the channel, Britain itself was safe from invasion. The central strategic importance of this blockade has often been lost in public perception, even though it has been well understood by naval strategists.⁷

Never in the history of blockades has there been excelled, if ever equalled, the close locking of Brest by Admiral Cornwallis, both winter and summer, between the outbreak of war and the Battle of Trafalgar.⁸

Approach to battle

What of Lord Nelson? Even prior to 1805, Lord Nelson was a 'British national hero' and it was perhaps his 'unique genius' that led to his being appointed to command the Mediterranean Fleet.⁹ His task was to blockade the French fleet at Toulon while protecting British sea communications and Britain's allies in the Mediterranean. During 1804 Spanish opposition to British mercantile policy grew to such a level that Spain openly joined France in the war. In numbers alone, the combined French and Spanish fleets seemed capable of achieving naval supremacy in either the Channel or the Mediterranean.¹⁰ The difficulty for the French and Spanish allies was to break the numerous blockades of their harbours and then become an effective combined fighting fleet. The Toulon Fleet under Admiral Pierre Villeneuve was able to break through Nelson's open blockade at the end of March 1805, a number of Spanish warships from Cadiz were attached as it passed, and a combined fleet of 17 ships of the line moved out into the Atlantic heading towards the West Indies. This manoeuvre was intended to draw off British ships from their blockade operations at the French Atlantic ports. However it was unsuccessful in this regard, as the Admiralty rightly recognised this as a diversion from its main war aim: to maintain control of the English Channel and the surrounding waters.¹¹ Nelson, having let Villeneuve slip past his open blockade, secured the Mediterranean and then followed the French and Spanish fleet across the Atlantic to the West Indies.

Nelson pursued Villeneuve's fleet across the Atlantic, missing him by a few days. Intelligence obtained by Nelson in the West Indies that Villeneuve was heading back across the Atlantic to Ferrol in Spain was forwarded to the Admiralty and in the meantime Nelson sailed back to Gibraltar. The Admiralty subsequently ordered Sir Robert Calder to raise the blockade at Ferrol and to block the French and Spanish fleet off Cape Finisterre before it could cooperate with the French Atlantic Fleet at Brest. Calder, although outnumbered, was able to capture two Spanish ships and force Villeneuve to turn south and head back to Cadiz.¹²

An attempt by the French fleet at Brest to fight their way out past Cornwallis' blockade was defeated in late August, and about this time Napoleon must have decided that it was not possible to invade Britain without a massive naval building program and major reforms to naval administration. In a surprising strategic shift, Napoleon began moving his *Grande Armée* towards the Austrian frontier and what was to be the first of a series of successful land campaigns that enabled Napoleon to conquer much of continental Europe.

If Napoleon had already postponed his plans to invade Britain and was himself well on the way to conquering the Austrian Empire, what was the point of the battle of Trafalgar? Napoleon does not appear to have learnt much about sea power and the need to obtain sea control before being able to project power ashore, as he now ordered Villeneuve to enter the Mediterranean and land troops near Naples. No doubt Napoleon saw this as a flanking attack that would draw away Austrian troops from his central attack through Bavaria. In naval terms this order to land an expeditionary force along a coast that was protected by strong naval forces, at the time the experienced and powerful British Mediterranean Fleet under Nelson, was extremely risky. Napoleon, however, was quite specific on what he required when he ordered Villeneuve 'not to hesitate to attack superior or equal forces and to engage in fights *à outrance*. The Emperor would not count the loss of ships so long as they were lost with Glory!¹³ In addition, advanced rumours that Napoleon had decided to replace Villeneuve, as

he lacked an offensive spirit, had arrived in Cadiz before the combined French and Spanish fleet departed that port on 19 October 1805.

Maintaining his open blockade of Cadiz, Nelson was promptly informed of the fleet's departure and was able to make all necessary preparations for a fleet action off Cape Trafalgar. The details of the battle including the subsequent death of Lord Nelson 'at the moment of his greatest victory', need not concern us too much in this article. It should be recognised that at the time of Trafalgar the British nation had been fighting an exhausting and at times bitter war against France for almost 12 years and was to continue to fight Napoleon for at least another 12. Nelson's role as a national hero was important for British morale, as was the image of sailors and officers bravely fighting tooth and nail against everything that the resourceful enemy could throw at them. Both images must have contributed to the national war effort, as well as helping to counter the economic strain that the war was causing within the civilian community.¹⁴ On the French and Spanish side, their inability to stand up to the Royal Navy on a ship-to-ship basis would have had serious morale implications.

The strategic results of the battle are harder to assess. The British control of the Mediterranean Sea was maintained and remained so throughout the long Napoleonic wars. The close blockade at Brest was eased and in December 1805 a few squadrons managed to escape to raid British sea communications. Most of these ships were captured or destroyed at sea by the British, while the few lucky ships that were able to return to France were unable to do significant damage to British sea communications.

The loss of 18 allied ships of the line (about 20 per cent of the total) would have been significant in the short term, but the French shipbuilding capabilities, when combined with their allies and the increasing economic assets under the Napoleonic empire, allowed these ships to be rapidly replaced.¹⁵ The human casualties of the battle would have been much harder to replace, as the French suffered from a shortage of experienced mariners. The French tried to overcome this shortcoming by the use of marine conscripts who, if somewhat short of marine skills, were mostly enthusiastic.

Decisive naval battle

Mahan saw Trafalgar as the battle where Napoleon was vanquished and England was saved. Obviously finding it difficult to link Napoleon's decision to abandon his invasion plans with the battle at Trafalgar, Mahan suggested that 'the battle of Trafalgar, fought on 21 October 1805, was therefore separated by a space of two months from the extensive movements of which it was nevertheless the outcome' and that 'England was saved at Trafalgar, though the Emperor had then given up his intended invasion'.¹⁶ Unfortunately this later version of events has tended to survive in the public's perception and is often repeated in recent documents such as the guide to the HMS *Victory* museum at Portsmouth: 'Trafalgar broke France as a maritime power and freed England from the threat of invasion.'¹⁷ Given the evidence Brian Tunstall's summary appears more accurate: 'Superficially, at any rate, the Battle of Trafalgar appears to have been one of the less important events of the war. Only a small part of Bonaparte's naval forces were destroyed and only one-sixth of the total British ships of the line were actually engaged.'¹⁸

Taking this one step further, is it feasible to describe any contest at sea as a decisive naval battle? The evidence concerning the battle of Trafalgar suggests that there is no such thing as a decisive naval battle. No single naval battle can be decisive by itself, as it is not possible for naval forces to permanently secure possession of the sea in the way that it is possible to take land in a military environment. Control of the sea, including sea communications, is a temporary condition that enables a maritime force to make use of the sea, not possess the sea.¹⁹

In the past some naval strategists have suggested that the main aim of naval strategy is to seek out and destroy the enemy, to fight what Nelson called 'a close and decisive battle'.²⁰ Mahan believed that 'in war the proper main objective of the navy is the enemy's navy', and that 'the fleet should strike at the organised force of the enemy afloat, and so break up the communication between his ports'.²¹ Such statements are open to misinterpretation and historically may have led some rash naval commanders to take excessive risks by seeking a decisive naval victory.²² The public's obsession with naval battles is partly due to the works of navy historians who, at least during much of the 19th and early 20th centuries, aptly recorded battles without linking them with the strategy of the war in which they were waged. This was recognised by Sir Reginald Bacon in the 1940s:

The result has been that the British nation, as a whole, has tended to concentrate its attention and memory on historic battles, and to look on them as having won the war, instead of being mere incidents in the general war strategy. This relation between battles and strategy is amply proved by the fact that during the war of the French Revolution and the Napoleonic wars, which lasted on and off for twenty years, only six battles of first class importance took place, the Glorious 1st of June, Camperdown, St. Vincent, the Nile, Copenhagen and Trafalgar. Yet the same strategy underlay all our dispositions throughout the twenty years of war, and it was due to our unflinching adherence to that strategy, rather than to battles, that the war was won.²³

If one makes a cursory examination of the US Navy's doctrine one could come to the conclusion that it still desires to seek out the decisive naval battle: 'The ability to engage the enemy at sea decisively will always remain paramount to our naval forces.'²⁴ Upon further examination, however, we can recognise that the US Navy sees that moderation in the use of naval force is paramount to modern naval operations, and that sea battles are only decisive when they form part of a strategy that capitalises upon sea control to influence events on land. This view tends to follow Julian Corbett who stated that naval battle should not be avoided, rather that 'we should endeavour from the first to secure contact in the best position for bringing about a complete decision in our favour, and as soon as the other parts of our war plan, military or political, will permit.'²⁵

In modern parlance, the application of one's naval strength directly against an enemy's strength forms the basis of *Attrition Warfare*.²⁶ We should no longer see individual naval battles as decisive but rather 'fighting that is frequently indecisive and inherently costly in terms of personnel, resources, and time. When success in war on the operational and strategic levels depends on the ability to destroy or deny the enemy critical resources faster than they can recover, classic attrition warfare techniques are being employed.'²⁷ In context, the battle of Trafalgar may be seen as one conflict within the broader Napoleonic naval war of attrition which ultimately led to the British securing temporary control of the sea and enabled them to exploit that sea control. 'Seapower is attritional, with battles and campaigns forming part of the gradual,

cumulative process that wears down an enemy's resources and creates a dominant position at sea that can be turned to strategic advantage.¹²⁸

Command of the sea

We have already edged around the issue of 'command of the sea' without discussing its meaning or even reflecting upon its attainment in absolute terms. The traditional concept of 'command of the sea' can be traced back to ancient times, when Greeks and later Romans fought to control Mediterranean sea trade.²⁹ In medieval Britain the author of the verse *The Libelle of Englyshe Policie*, written around 1436, desired Britons to 'Cherish merchandise, kepe the Admiraltie' and to 'kepe then the sea that is the wall of England, and then is England kept by Goddes hand'.³⁰ The British Navy grew in early modern times on the basis of this recognised need to protect England from invasion, and under Cromwell's protectorate the navy also assumed the duty to protect the nation's mercantile fleet. After brushes with the Dutch and the French during the 17th century the Royal Navy had grown to a position of importance in the affairs of North West Europe, however Britain's maritime policy was essentially one of 'defend the moat' rather than 'command of the seas'. The policy to move from a European naval power to a nation state with a navy that 'ruled the waves' and supported a worldwide empire seems to have developed parallel with increased recognition of the British national identity during the late 1730s. A small but influential group within the British aristocracy sought profits from British control of world-wide trade, and as a corollary supported measures to enhance British naval power within the Parliamentary system. Their efforts included sponsoring the performance of Thomas Arne's *Alfred, a Masque* before an audience including the then Prince of Wales and many of the leading Britons of the time. It was during this performance that the now well known chorus *Rule Britannia* was first heard, and subsequently this tune rang in the ears of the British society that set its sights on achieving the 'naval supremacy' alluded to in song.³¹ The war of Jenkin's Ear 1740–1748 started the process, aiming to defeat French maritime forces and in turn extend British sea power across the globe. The expansion of the British mercantile empire in the West Indies, the American colonies including Canada, and in India, developed in parallel with this struggle for 'naval supremacy'.

In fact the struggle to achieve British maritime supremacy was a long and hard process, lasting over 60 years and incorporating several distinct worldwide conflicts. In the eyes of the British nation it was the battle of Trafalgar that ultimately led to this desire being achieved. The Royal Navy's control of the sea was seen by the British people to follow Trafalgar with the death of the heroic Nelson. This was despite the efforts of many within the Admiralty to highlight the role of the long period of naval attrition warfare that had been almost continuous since the commencement of the Revolutionary wars in 1793, or to highlight the major national effort that had been applied to maritime affairs since at least the 1740s. This illusion only grew stronger with time, as Nelson was enshrined as a national hero and as Trafalgar was remembered as the last fleet action of the Napoleonic wars. This tradition is still quite strong in some quarters; for example Geoffrey Till has stated that Trafalgar 'seems decisive in that it permanently set the conditions for warfare at sea under which the Royal Navy would subsequently prevail, although this did not mean that nothing that mattered happened at sea afterwards'.³²

Of course the Napoleonic wars did not end in 1805 and British naval operations did occur after Trafalgar. Napoleon continued the fight against Britain by economic means, instituting

the 'Continental System' of trade barriers aiming to destroy the British economy and hence the basis for her ability to resist.

After Trafalgar Britain used her seapower to isolate Napoleon in Europe, controlling access to the rest of the world to bolster her economy and engage France in a long war of economic attrition. Unable to engage the British at sea, Napoleon launched a counter-blockade, the 'Continental System', intended to exclude Britain from Europe.³³

Enforcement of Napoleon's Continental System, along with the British response of Orders in Council, prevented almost all trade between England and the continent, disrupted commercial interests and retarded economic growth throughout Europe. However, Napoleon did not rely on economic pressures alone, he implemented a massive naval program that planned for construction of ships of the line throughout the French Empire and allied ports, including those of the German states, Denmark, Holland, and the Kingdom of Italy. By 1812 the number of French and allied warships presented an impressive force— at least on paper, as Napoleon was always short of experienced seamen and naval officers. Between 1805 and 1812 this force acted as a fleet-in-being that, although not as powerful as the combined British fleet, was able to hold down large numbers of Royal Navy ships on blockade and escort duty.

Command of the sea could theoretically be achieved only through the complete destruction or neutralisation of the adversary's forces and in practice as can be seen even following the victory at Trafalgar, this never occurs. Indeed command of the sea can only have meaning in relative terms, lasting a certain time in a certain location and while naval forces are present. Such limitations have now been generally recognised by naval strategists and have led to the more recent concept of 'sea control'.³⁴

The British kept their eye on the ball and maintained their policy of sea control, and of course if they had not done so they may have faced another invasion attempt. After Trafalgar the Royal Navy did not relax, but rather invested heavily in constructing ships of the line. They built 50,000 tons of battleships between 1805 and 1815, the majority of which were built to replace their ageing fleet rather than to increase the overall number of platforms.³⁵ For the British, having gained control of the sea and the ability to deny the use of the sea to their enemies, the opportunity to exploit their strategic advantage presented itself. A series of power projection operations, aimed at destroying parts of the French allied fleet, was undertaken, including an attack on the naval base at Copenhagen in 1807, and an amphibious assault along the coast of Holland aimed at the port of Antwerp in 1809. In this period the British captured or re-captured numerous possessions along the world's trade routes, including the Cape of Good Hope, Mauritius, the Seychelles and all of the French West Indies. By far the most successful were the Royal Navy operations associated with the Peninsular campaigns fought between 1807 and 1814. After several less satisfactory expeditions on the coasts of Spain and Portugal, a British–Portuguese force under the Duke of Wellington was able to support the Spanish insurrection and effectively tie down large numbers of Napoleon's land army. In time Wellington was able to advance into France and participate in the land campaigns that were to finally defeat Napoleon. Although the Royal Navy was not able to occupy the enemy's country it was instrumental in the success of Wellington's campaigns, by providing the necessary operational, transportation and logistics support.³⁶ Stephen Roskill succinctly summarised this phase of operations when he stated that 'Trafalgar did not of course decide

the outcome of the Napoleonic War; but it did produce the conditions which made certain the ultimate downfall of France.¹³⁷

Conclusion

This re-evaluation of the battle of Trafalgar should not be seen as denigrating the bravery and discipline of the many sailors—British, French and Spanish—who fought and died during the battle itself. The fact that the legendary commander Lord Nelson died during the battle, along with the fact that Trafalgar was the last fleet action of the Napoleonic wars, became linked in the imaginations of the people of the developing British nation to the British Navy effectively gaining control of the seas. At long last, and in many minds, the natural destiny for the British peoples had been achieved; Britannia was seen to ‘rule the waves’.

At the remove of 200 years the battle of Trafalgar may be seen from a different perspective, as a single engagement within a naval war of attrition that was waged for many years in order to secure British sea communications across the globe. During the Napoleonic wars, the Royal Navy successfully implemented strategies for controlling Britain’s own sea communications and denying the use of the sea to its enemies. Not shying away from battle when it had tactical advantage, the Royal Navy was able to sustain effective control of the sea for much of the Napoleonic wars and ultimately to assist, through power projection operations, the decisive land campaigns that led to Napoleon’s overthrow.

In recognition of the importance of Trafalgar, if only for bringing navies to greater prominence in the public mind, the RAN has been participating in the activities organised to mark the occasion of the passing of 200 years since Trafalgar both at home and abroad. HMAS *Anzac* represented Australia, accompanied by vessels from over 40 other navies, at the International Fleet Review organised by the Royal Navy at Portsmouth UK during June 2005. A number of local activities have also been organised to commemorate Trafalgar day throughout Australia.

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NOTES

1. A.T. Mahan, *The Influence of Sea Power upon History 1660–1783*, Little, Brown & Co., Boston, 1890, pp. 11–12, and 23–24; and Herbert Hayens, *Ye Mariners of England: A Boy's Book of the Navy*, Thomas Nelson & Sons, London, 1911, p. 218, 'There can be few British boys who do not know the old story almost by heart. It was the culminating point in Nelson's glorious career.'
2. The author does not consider himself a specialist on Trafalgar, Nelson or warfare in the age of sail; rather the genesis of this article arose from my recent work on naval and strategic history. I have used the Royal Australian Navy, *Australian Maritime Doctrine, RAN Doctrine 1 2000*, Canberra, 2000, especially chapters 4 & 5 for inspiration when trying to place the battle of Trafalgar in today's post-modern historical context.
3. John Keegan, *The Price of Admiralty*, Penguin, London, 1988, pp. 13–16. 'At the beginning of the nineteenth century Britain and France constituted a fascinating strategic mismatch'.
4. The Napoleonic Wars were effectively against France and all the resources it could wield against Britain. Hence the term 'French' as used in this article includes France itself, its allies and countries such as Holland and Belgium that were integrated into Napoleon's greater French state.
5. Lord St Vincent was followed as First Lord of the Admiralty by Lord Barham before Trafalgar was fought.
6. Julian S. Corbett, *Some Principles of Maritime Strategy*, Longmans, London, 1911, p. 114.
7. Summary in Geoffrey Best, *War and Society in Revolutionary Europe 1770–1870*, Fontana, London, 1982, pp. 144–145.
8. A.T. Mahan, *The Influence of Sea Power upon the French Revolution and Empire, 1793–1812*, Little, Brown & Co., Boston, 1892, Vol. II, p. 126; also see Vol. I, p. 339 and Vol. II, pp. 118–119.
9. For a recent discussion of Nelson's image see Andrew Lambert, *Nelson: Britannia's God of War*, Faber & Faber, London, 2004.
10. The French and Spanish ships of the line available for operations during 1805 numbered some 67, compared with the 80 or so Royal Navy ships of the line available in European waters.
11. The French Navy as the lesser naval power adopted what would now be called a manoeuvre warfare strategy, which in this instance was not successful. Space does not permit further examination of the role of manoeuvre warfare during the Napoleonic naval wars although this would be an interesting and rewarding topic for further study. 'Manoeuvre warfare is the key strategic and operational concept influencing the way the Australian Defence Force conducts operations', Australian Defence Force, *The Australian Approach to Warfare, ADDP-D.1*, Canberra, 2002, para. 6.6. Manoeuvre Warfare is defined as 'a war-fighting philosophy that seeks to defeat the enemy by shattering his moral and physical cohesion—his ability to fight as an effective, co-ordinated whole—rather than by destroying him physically through incremental attrition', Royal Australian Navy, 2000, p. 155.
12. Admiral Calder was criticised and disgraced for not annihilating the enemy, even though he did achieve a minor tactical as well as a strategic victory.
13. Peter Padfield, *Nelson's War*, Hart-Davis & MacGibbon, London, 1976, p. 172.
14. See Best, 1982, pp. 140–141, 'a country enormously taxed, with dear food, subject to common harvest hazards, undergoing a population explosion and all the jumps and jolts of the first industrial revolution'.

15. The Spanish Navy website suggests that although the navy could have replaced the losses suffered in Trafalgar and still had a respectable force of 44 ships of line and 37 frigates, the lack of a national policy, anarchy and the demoralisation during the last years of the reign of Carlos IV, made the resurgence impossible. See 'Historia de La Armada Española Año 1805', available at: <<http://www.armada.mde.es/Historia/capitulo4/1805.htm>>, visited 31 January 2005.
16. Mahan, 1890, p. 24.
17. L. McA. Jay, *HMS VICTORY: Souvenir Guidebook*, Pitkin Pictorials, Portsmouth, 1988, p. 9.
18. Brian Tunstall, *Naval Warfare in the Age of Sail: The Evolution of Fighting Tactics, 1650–1815*, ed. Nicholas Tracy, Conway Maritime Press, London, 1990, (First Published 1936), p. 173.
19. Royal Australian Navy, 2000, p. 38.
20. Nelson quoted in Geoffrey Till, *Seapower: A Guide for the Twenty-First Century*, Frank Cass, London, 2004, p. 162.
21. A.T. Mahan, *Naval Strategy*, Sampson Low Marston & Co., London, 1911, p. 199.
22. The actions of Admiral Cradock at Coronel in 1914 may be cited as one such example, see Barrie Pitt, *Coronel and Falkland*, Cassell, London, 1960 esp. pp. 2, & 29–31. The actions of Admiral Halsey at Leyte Gulf in 1944 may be another. When he detached the carrier forces of the Third Fleet to seek a decisive battle with the Japanese Northern Force, Halsey abandoned the US Invasion Forces to attacks by the Japanese Central and Southern Forces. Halsey quoted his orders from Admiral Nimitz 'to engage the enemy fleet if and when an opportunity occurred', see Samuel E. Morison, *Leyte June 1944–January 1945, History of the United States Naval Operations in World War II*, Vol. XII., N.J., Castle Books, Edison, 1958 esp. pp. 193–197, & 289–296.
23. Quote from Reginald Bacon, *Modern Naval Strategy*, Frederick Muller, London, 1940, pp. 65–66, see also p. 191. Recent publications such as Eric Grove (ed.), *Great Battles of the Royal Navy*, Weidenfeld & Nicholson, London, 1994, tend to perpetuate the myth of naval battle.
24. United States Navy, *Naval Warfare, Naval Doctrine Publication 1*, Washington, 1994, p. 29.
25. Corbett, 1911, p. 180.
26. United States Navy, 1994, p. 33; see also Royal Navy, *British Maritime Doctrine, 3rd edn*, TSO, London 2004, pp. 54–55. The Australian Defence Forces currently 'try to avoid attrition warfare', Australian Defence Force, 2002, para. 6.7. *Attrition Warfare* is defined as 'A style of warfare characterised by the application of substantial combat power that reduces an enemy's ability to fight through the loss of personnel and equipment. It is a concept which relates to maritime warfare at the operational and strategic levels, since by their nature successful tactical actions in the maritime environment generally achieve destructive effect', Royal Australian Navy, 2000, p. 141.
27. United States Navy, 1994, p. 33.
28. Andrew Lambert, *War at Sea in the Age of the Sail*, Cassell, London, 2000, p. 17.
29. Chester G. Starr, *The Influence of Sea Power on Ancient History*, OUP, Oxford, 1989.
30. Quoted in S. W. Roskill, *The Strategy of Sea Power*, Collins, London, 1962, p. 22.
31. Simon Schama, *A History of Britain, the British Wars 1603–1776*, BBC, London, 2001, pp. 317–322.

32. Till, 2004, p. 164.
33. Lambert, 2000, p. 17.
34. Royal Australian Navy, 2000, pp. 38–41.
35. Much of this paragraph is based upon the work of Lambert, 2000, pp. 182–183.
36. See Christopher D. Hall, *Wellington's Navy: Sea Power and the Peninsular War 1807–1814*, Chatham, London, 2004.
37. Roskill, 1962, pp. 81–82.

BIBLIOGRAPHY

- Australian Defence Force, *The Australian Approach to Warfare*, ADDP-D.1, Canberra, 2002.
- Bacon, Reginald, *Modern Naval Strategy*, Frederick Muller, London, 1940.
- Best, Geoffrey, *War and Society in Revolutionary Europe 1770–1870*, Fontana, London, 1982.
- Corbett, Julian S., *Some Principles of Maritime Strategy*, Longmans, London, 1911.
- Grove, Eric, (ed.), *Great Battles of the Royal Navy*, Weidenfeld & Nicholson, London, 1994.
- Hall, Christopher D., *Wellington's Navy: Sea Power and the Peninsular War 1807–1814*, Chatham, London, 2004.
- Hayens, Herbert, *Ye Mariners of England: A Boy's Book of the Navy*, Thomas Nelson & Sons, London, 1911.
- Jay, L. McA., *HMS VICTORY: Souvenir Guidebook*, Pitkin Pictorials, Portsmouth, 1988.
- Keegan, John, *The Price of Admiralty*, Penguin, London, 1988.
- Lambert, Andrew, *War at Sea in the Age of the Sail*, Cassell, London, 2000.
- Lambert, Andrew, *Nelson: Britannia's God of War*, Faber & Faber, London, 2004.
- Mahan, A. T., *The Influence of Sea Power upon History 1660–1783*, Little, Brown & Co., Boston, 1890.
- Mahan, A. T., *The Influence of Sea Power upon the French Revolution and Empire, 1793–1812*, 2 Vols., Little, Brown & Co., Boston, 1892.
- Mahan, A. T., *Naval Strategy*, Sampson Low Marston & Co., London, 1911.
- Morison, Samuel E., *Leyte June 1944–January 1945, History of the United States Naval Operations in World War II*, Vol. XII., N.J., Castle Books, Edison, 1958.
- Padfield, Peter, *Nelson's War*, Hart-Davis & MacGibbon, London, 1976.
- Pitt, Barrie, *Coronel and Falkland*, Cassell, London, 1960.
- Roskill, S. W., *The Strategy of Sea Power*, Collins, London, 1962.
- Royal Australian Navy, *Australian Maritime Doctrine, RAN Doctrine 1, 2000*, Canberra, 2000.
- Royal Navy, *British Maritime Doctrine*, 3rd edn, TSO, London, 2004.
- Schama, Simon, *A History of Britain, the British Wars 1603–1776*, BBC, London, 2001.
- Starr, Chester, G., *The Influence of Sea Power on Ancient History*, OUP, Oxford, 1989.
- Till, Geoffrey, *Seapower: A Guide for the Twenty-First Century*, Frank Cass, London, 2004.
- Tunstall, Brian, *Naval Warfare in the Age of Sail: The Evolution of Fighting Tactics, 1650–1815*, ed. Nicholas Tracy, Conway Maritime Press, London, 1990, (First Published 1936).
- United States Navy, *Naval Warfare*, Naval Doctrine Publication 1, Washington, 1994.

The Historical Lessons and Intellectual Rigour of Admiral Sir Herbert William Richmond

Commander Bruce McLennan, RNZN

there is no doubt that we are the most appalling amateurs who ever tried to conduct a war¹

Admiral H.W. Richmond

Introduction

Admiral Sir Herbert William Richmond (1871–1946) is remembered as a naval officer, an historian, and an intellectual. He was nurtured during an era when the Royal Navy was assimilating the advent of ‘mechanisation’, and forming its doctrine in the artificial conditions of peace. This was the *Dreadnought* era: the era of the ‘materialist’ school of strategic thought when the Royal Navy was driven by the arguments of the technical rationalists, to the neglect of the historical strategists. Richmond led the intellectual counter—the ‘historical’ school of strategic thought—and while never producing an overall theory of naval strategy, he did produce an overall reality on the application of the naval instrument.

Admiral Richmond’s first book, *The Navy in the War of 1739–1748*, published in 1920, won him the Royal United Service Institution’s Chesney Gold Medal.² His most successful book *Statesman and Sea Power*, published in 1946, firmly established him as a classical theorist of the standing of Colomb, Mahan and Corbett. *Statesman and Sea Power* is a sweeping analysis of British foreign policy from Elizabeth I to the end of the Second World War in which Richmond examines ‘the inter-relationships of political and military strategy, and the connections between Britain’s developing overseas influence and the utilisation of her maritime strengths’.³ It was his teachings on the abiding realities of ‘naval power’. It was also the mature thoughts of a man at the end of a long and exasperated life: one of constant frustration and disenchantment with the lack of intellectual rigour applied to the policies of his superiors. Still, even with these frustrations, Richmond’s life was incredibly rich and successful both as a naval officer and as a professional historian.

But there is a lot more to Herbert Richmond than just these two books—he was a prolific writer of books, historical documents, journal articles, newspaper articles, and pamphlets.⁴ ‘Richmond was a unique phenomenon in the Victorian–Edwardian Navy—a professionally competent and successful officer who was also an intellectual. ... a highly censorious, ambitious, and impatient young captain of the *Dreadnought* era ... an officer eminently capable of clear thinking ... a decided flair for the use of persuasive logic; a man who by virtue of an outstanding intellect, a restless and uncompromising personality, and the depth of his grasp of historical realities became the fountainhead of British naval thought in the twentieth century. Above all, Richmond worked to cure the intellectual retardation, which characterised the pre-1914 Royal Navy and its myopic approach to policy development in the years following.’⁵

He led the ‘intellectual revolution’ within the Royal Navy from 1912, with the founding of the Naval Society and the publishing of the *Naval Review*, and he brought about major changes in naval strategic thought, policy and organisation that have endured the ‘gauntlet of robust

debate' over time. Heretical by his very nature, Admiral Sir Herbert Richmond gave us our understanding of matters 'naval' at the dawn of the 20th century—not a doctrine, but a methodology of higher education, staff work, planning and objectives.

The aim of this article is to analyse Admiral Sir Herbert Richmond—the man, his environment, and his teachings—in order to explain his contribution to our understanding of naval strategy at a time when we are also assimilating the advent of new technology—'informatisation'—and forming future combat doctrine in the artificial conditions of peace.

The man

wide-minded and high-minded ... a strong character, possessing power of thought and power of expression, unique in having flown his flag as Commander-in-Chief, a figure in Cambridge, as Admiral, and Master of Downing College...

Captain Alfred Dewar 1947⁶

Herbert Richmond entered the Royal Navy in 1885. His first ship was HMS *Nelson*, flagship on the Australian Station. From his youth he was regarded as 'an officer of character and outstanding talent'.⁷ Richmond also inherited a talent for drawing that led him towards the hydrographic specialisation and service in HMS *Stork*, serving in the Mediterranean, and later in HMS *Active*. In 1894 he was appointed to the shore establishment HMS *Vernon* to qualify as Torpedo Lieutenant, remaining there on the staff until 1897. As a Torpedo Lieutenant he served in HM Ships *Empress of India*, *Ramillies*, *Canopus* and *Majestic*. He was promoted to Commander in 1903 and served in HMS *Crescent*, the flagship of Rear Admiral John Durnford, before being transferred to the Admiralty in 1906. Admiral Sir John Fisher, who had become the First Sea Lord in 1904, was drawn by Richmond's energy and intellect—'out and away without precedent [one of] the most able men in the Navy'.⁸ In 1908 he was promoted to Captain and appointed in command of the new battleship HMS *Dreadnought*, as the flag captain to Vice Admiral Sir William May.

After HMS *Dreadnought*, Richmond was appointed in command of the cruisers HM Ships *Furious* and, later, *Vindictive*. This was the time when Sir Julian Corbett was lecturing on naval history at the War College and Richmond found time to study the War of the Austrian Succession—later published as *The Navy in the War of 1739–1748*. In 1912 Captain Richmond started the idea of the *Naval Review* to encourage the exchange of 'sea-military knowledge', and gained the support of Winston Churchill, then the First Lord, Admiral Prince Louis of Battenberg, then the First Sea Lord, and asked Admiral William Henderson to be the first honorary editor. Also that year, his proposed Naval War Staff finally came into being and Richmond was appointed as Assistant Director of Operations, remaining at the Admiralty until Lord Fisher's sudden resignation in May 1915. Shunted aside after challenging the wisdom of the Gallipoli campaign, he was expelled to act as liaison officer in Italy to the Duke of Abruzzi. When Admiral Sir David Beatty was appointed as Commander-in-Chief of the Grand Fleet in 1917, Richmond regained political favour and was given command of the battleship HMS *Conqueror*. Thence he came to the Naval Staff in 1918 as Director Training Division and embarked on his campaign to place the education of naval officers on wider and firmer foundations. His views on training, in

particular public school recruitment, did not gain favour and he was sent back to the Grand Fleet in command of the elderly battleship HMS *Erin*: to be removed out of sight. ‘...both his terms of service in the Admiralty ended in abrupt dismissal; ... The causes lie, I think, partly in the defect of intolerance ... which probably appeared in speech and attitude rather than on paper, but more in the fact that in power of thought, and in outlook towards such matters as staff work and education, he was many years ahead of his contemporaries.’⁹

In 1920, Richmond was promoted to flag rank, and appointed to Greenwich in charge of the Senior Officer’s War Course. This developed into his appointment from 1923 to 1925 as the Commander-in-Chief, East Indies. He was promoted to Vice Admiral in 1925, and knighted in 1926. In the East Indies he did much to focus attention on the needs of the navy in India, publishing *The Navy in India, 1763–83*.¹⁰ In 1927 he became Commandant of the newly instituted Imperial Defence College—the first real attempt to bring together senior officers of all three Services to address the coordination of war effort. However, Admiral Beatty’s retirement in 1927 removed his chief supporter, and although promoted to full Admiral in 1929, the final breach with the Admiralty came over his open advocacy of the small capital ship instead of building up to the limit of 35,000 tons agreed at the 1921 Washington Conference.

Herbert Richmond retired from the Royal Navy in 1931. In 1934 he succeeded Dr Holland Rose as Vere-Harmsworth Professor of Naval History at Cambridge, and later was elected to the Mastership of Downing College—a position he held until his death in December 1946.

‘We shall not often see his like again. A first-class seaman, a brilliant technical officer... a deeply-read scholar, a clear thinker and an able debater...’¹¹ ‘Looking back today I feel that it was not Richmond’s profound knowledge of naval history, nor his great literary gifts, nor his power of piercing analysis of intractable problems that marked him as a most unusual man. Rather does his mental incorruptibility provide the key to his undoubted distinction.’¹²

His environment

the tradition of 100 years of peace in which war was forgotten.

Admiral Richmond 27 August 1917¹³

To understand Richmond’s environment during his career with the Royal Navy is to first understand Admiral Sir John Fisher’s term as the First Sea Lord of the Admiralty. Both as a technocrat and as a power broker, Admiral Fisher dominated the Royal Navy’s development through the ‘mechanisation’ revolution at the turn of the century. However, although Admiral Fisher was clever—even a genius—it would be wrong to think of him as an original thinker of outstanding ability. Fisher was the ultimate ‘rationalist’ and he had tremendous personal energy. He had the ability to detect new ideas and to manipulate the game of administrative and political power astutely enough to ensure that these ideas were brought to fruition. ‘This is what distinguished Fisher from his contemporaries: that he was able to see the naval service and its problems [as a] whole and, within a short space of time, to translate theoretical ideas into practical policy. That he was often both ruthless and wrong is obvious. That he dominated the British naval scene between 1900–1914 is equally clear.’¹⁴

The most obvious manifestation of Admiral Fisher's influence occurred in 1906 when Britain launched HMS *Dreadnought*. Previously, British battleships built under the Naval Defence Act of 1889 typically displaced about 13,000 tons, carried four 12-inch guns in two large turrets, and were armed with as many as ten 6-inch and 4-inch guns as secondary batteries. The largest guns could hit a target 6,000 yards distant, or about six times further than the range of the then torpedoes. HMS *Dreadnought* was the first of the 'all big-gun ships'. She was armed with ten 12-inch guns in five turrets. With improved 'spotting' HMS *Dreadnought* could lay down an accurate fire to 13,000 yards and overwhelm any conventional battleship before it could get within range to reply. HMS *Dreadnought* also had steam-turbine engines in place of piston-driven engines, the first large warship so equipped. She burned a combination of oil and coal, and used four screws instead of two. Despite her 11 inches of armour at belt-line and a total displacement of 17,800 tons, she reached a speed of 21.5 knots on trials; six knots faster than existing battleships. In summary, the advent of HMS *Dreadnought* made all previous battleships obsolete. In her day, she was the apex of mechanisation and the revolution in technology. She became the foundation and showcase of the 'materialist' school of strategic thought.

This revolution in technology and preoccupation with naval strength, which, since the mid 19th century, had kept naval thinkers' minds occupied almost exclusively with questions of ship design and weapons performance, was undoubtedly the main reason for the Grand Fleet's numerical superiority in September 1914. However, its absolutism was also the basis of serious defects. 'The brain of Jupiter had indeed produced an Athene fully armed ... It was no one's business to be sure that the poor lady could ever use her spear.'¹⁵ '...Britain saw a tremendous technical creature rear itself up without it being generally realized that the monster's brain was not commensurate with its body.'¹⁶ Or as Andrew Gordon describes it '... while the Royal Navy was undergoing its fifty year conversion from oak and canvas to steel and turbines, its once-clear, empiricist understanding of "product" was pilfered from the lay-apart store by the vested interest of "process" ...'.¹⁷

'Thus prior to 1914, naval thinkers and reformers who worked to encourage a broader, more intellectual approach to problems of tactics, strategy, and national policy were dealing with a service whose recent history and whose current sense of urgency were geared to a materialist ethic.'¹⁸ The Royal Navy had gravitated towards the 'material' and the 'mechanical' to the utter neglect of the 'military' and the 'strategic'.¹⁹ Of the naval officers who took issue with this preoccupation and the absolutism of the 'materialist' school, Richmond appeared to be the most persistent, and probably the most formidably intelligent. Richmond 'recoiled at the extremism of futuristic prognostications—of which there were plenty... Basically, he believed it was imprudent to bank on prescience. Wisdom lay in imaginative expectation disciplined by recollection of historical patterns—not just static patterns, but dynamic patterns too, in which not only weapons technology but other sorts of conditions change.'²⁰

His teachings

The Navy 'is first, the statesman's tool, and second, the warrior's weapon. Sea power and naval strength are not always synonymous terms.'

Captain W.V. Pratt, USN July 1923²¹

Admiral Richmond was the ultimate maritime strategic iconoclast. His alleged heresies included challenging World War One British naval strategy and its cherished belief in 'fleet concentration', 'decisive battle' and the materialistic emphasis of the 'big gun ship'. He was an avowed supporter of the convoy system and the necessity to protect trade. He offered support for tri-Service joint command arrangements, emphasised the need for operational planning staff, stressed that maritime power on its own is not an end in itself, addressed the qualitative and quantitative aspects of force structure, and promoted the idea of advancing the higher education of professional naval officers.

His strategic conviction, in 1912, centred on his opposition to the idea that destroying the enemy's battle fleet was the ultimate object of naval strategy. He did not deny its efficacy, and he agreed that if the enemy formed such a fleet then the superior navy should 'disable' the enemy's concentration—render it 'unable to oppose'. However, it was not necessary to destroy it. He argued that the selective positioning of a strong countering force, and reducing the scope of harmful action by seizing the enemy's outlying bases, would achieve the same ends.

Through this argument he gave us the idea of strategic breadth. 'The ultimate aim of sea power [Richmond contends]... was control of the sea; and that control could be achieved only if all the constituent elements of strength at sea were present. Sea power, in other words, is not naval strength, as our modern interpreters suppose, but naval strength is one, and certainly the most important, of the constituents of that larger thing, Sea Power. ... If we are to consider what constitutes sea power we must ... decide what ultimate end sea power exists to attain.'²² And 'Command of the sea is only useful for the end it serves.'²³ '...control of the sea is not an end in itself. It ... is a means to an end.'²⁴

It was therefore a question of emphasis, and too much emphasis on the destruction of the enemy's Battle Fleet led to the situation where, by 1915, Britain had 'now a more complete command of the sea ... than we have possessed in any previous maritime war, and yet we are making less of its special advantage than we ever did.'²⁵ The alarming losses of mercantile shipping to German submarine attacks post-February 1917, and the Grand Fleet's reluctance to release 100 of its destroyers for convoy duties was the case in point. While the 'materialist' school focused on new technology to counter the German submarine threat, the solution was found in the trade protection policies of the 18th century. The Admiralty's reassignment of destroyers was always minimal, and its 'resistance to mercantile convoy was obdurate. The anxiety and bafflement of the men in charge was evident to everyone in the navy and in government...'²⁶

However, Richmond's contribution to strategy was not so much a strategic position, as it was a methodology for intellectual thought. 'It is absolutely necessary to look at the war as a whole, and to avoid being parochial and keeping our eyes on the German Fleet only... The destruction of the German Fleet is a means to an end and not an end in itself.'²⁷ Richmond taught the complementarity of force, the relation of force to diplomacy, the contingent nature of war, the possible importance of secondary or tertiary matters in strategy, that no single lesson of naval science fits all, and the varieties of ways that navies have been and can be used as instruments of statecraft. He asked to what end would ships be used: the simple question at the heart of naval strategy.

'I have said that a navy is an instrument, designed for a purpose; and when that purpose is clearly known to the designer, it—the navy or the ship—will be useful... A tool is anything whatsoever which is used by an intelligent being for realising its object. The idea of a desired end is inseparable from a tool.'²⁸

Richmond was also convinced that a war strategy needed to be formulated against the background of clearly defined objectives. He perceived that the objectives themselves might be in conflict, and that a sense of balance must be imposed in selecting the theatre and timing of conflict. From 1906, he championed the need for 'adequate planning machinery' within the Admiralty to determine and balance these 'objectives'—a Naval War Staff. The concept he proposed was based upon, but not directly analogous to, the Army's General Staff. The Naval War Staff would assist the Board of Admiralty by providing it with war plans based on its own investigations. But this was a heresy that was seen to diminish the power of Sea Lords' authority. And it was on this issue that Richmond 'fell out' with Admiral Fisher. 'Meanwhile nothing is being done. Fisher makes no move ... we have no one trained to think of the problems of war, the organisation required and the multitudinous details. I know only too well how ignorant we are, not only of modern wars but even of wars in History ... Fisher, clever as he is, has not made a study of it, and in reality has no knowledge. He is a genius ... but his predecessors have not been, nor may his successors be geniuses.'²⁹ Britain would, he felt, drift into war without considering 'what we like to call abstract considerations'.³⁰

In 1912 a Naval War Staff was finally created under the direction of the then First Lord, Winston Churchill. However, it did not become an efficiently used or trusted part of the Admiralty for many years. Richmond was in the Naval War Staff before and at the beginning of World War One, but he felt that his ability to influence the war effort was circumscribed by senior officers jealously guarding their own power bases.

As a consequence of this and other 'frustrations' Richmond started selling the idea that the Royal Navy must 'foster clear thought in the rising generation of naval officers, rather than the blind acquiescence in authority.'³¹ 'In peace, the dissemination of ideas and their discussion cannot fail to do good to a service bent on improving itself from within.'³² He deplored 'the system which denies officers opportunity to think or express their ideas. I hate this slavish habit of naval officers and this false idea of loyalty, which is generally not loyalty at all, but cowardice.'³³

To this end he, and others, formed the idea for a 'correspondence society for propagation of sea-military knowledge'³⁴ which developed into the Naval Society and eventually published the *Naval Review*.³⁵ It was initially an instrument for reform through education that, during the war, developed into an instrument for the dissemination of operational experience. From there it grew into an instrument for change.³⁶ The *Naval Review* acted as an outlet, as a 'percolator for concepts, the time for which is not ripe.' Candour and freedom of discussion were preserved through anonymous contributions—as protection for authors within a disciplined hierarchical system, and as an encouragement for offering criticism without offence—the precursor to the Chatham House Rule.³⁷

what I hope to develop is the mental habit of reasoning things out, getting at the bottom of things, evolving principles and spreading interest in the higher side of our work.³⁸

Conclusion

It is in the study, not of the instrument, but of its use that we are deficient; in the study of strategy, tactics and war, and war as a whole.³⁹

While changing international geopolitics creates new policy challenges and new potential military adversaries, modern Western navies are generally still technology-based, manpower, and capital intensive institutions which cannot be transformed quickly, and whose basic employment requires a great deal of time and effort to master. Naval strategy today has every tendency to appear, at its root, to be, as Richmond implied, the application of professional 'rationalist' experience to the solution of technical problems. If the Royal Navy's various technical deficiencies in World War One were caused by excessive deference given to the vaunted expertise of the 'materialistic' rationalist, then it seems that we may still have lessons to learn—for example: the British were under air attack in Falkland Sound in 1982 before they discovered the terms on which the Sea Wolf missile computers would accept a target, and ships had to burn before it was re-acknowledged that polyester clothing can melt onto the wearer. Andrew Gordon's 28 blinding glimpses of the obvious⁴⁰ 'cut close to the bone' and leave us much to ponder about. Our future may not necessarily be found in the informationalist's cyberspace.

Notwithstanding, command of the sea still needs to be secured, or maintained, before it can safely and effectively be exploited. In today's era of *Pax Americana*,⁴¹ there is an emerging concept of the need to shift the balance between what might be termed 'control' for 'exploitation', to the benefit of the latter. Those concerned with force structure might well conclude that there is now relatively less need for forces intended primarily to win command of the sea and relatively more need for those who intend to use it. This, indeed, appears to be a theme underlying the United States Navy's strategic formulation, '... From the Sea'. And it rises to Richmond's contention, 100 years ago, that 'Command of the sea is only useful for the end it serves' and that we may now have 'a more complete command of the sea ... than we have possessed in any previous maritime war, and yet we are making less of its special advantage than we ever did.'⁴²

Admiral Richmond sought to improve the preparation for war of naval officers, and the organisation of the naval service for dealing with war. He considered that the errors of both World Wars were the direct result of lack of proper preparedness and war planning. He was convinced that the complacency producing such difficulties had its roots in a general lack of appreciation for his view that 'national policy war planning and Service preparedness' were continuing and interacting requisites in the life of a healthy state. The purpose of *Statesmen and Sea Power* was to show how statesmen nurtured and used the elements of sea power. The editor of *The Navy as an Instrument of Policy*⁴³ stated in his preface that Richmond wrote that book to help prevent what he greatly feared—that what has happened before will repeat itself, and the nation, even if it survives—and the Empire, will again relapse into complacency. We may be there already.

It is on that note that much of Richmond's intellectually elegant and well-researched writings retain a good deal of utility for modern naval planners—not the least being the need for planning itself. Firstly, much of what he said still seems in itself sensible and relevant. Secondly,

and more importantly, the value of Richmond lies not so much in what he said, but in the spirit of the intellectual rigour and the experience of historical lessons that he drew upon to say it. He raised permanent issues for the reality and application of the naval instrument that furthers our understanding of naval strategy today. And 'his ideas are tools for thought, not substitutes for it'.⁴⁴

'Previously the Royal Navy had produced men capable of understanding, and sometimes of gloriously fulfilling, the role that the state cast for them, but never before had it produced a man with the capacity to explain both the navy to the nation and the nation to the navy: to the mutual advantage of each.'⁴⁵

Commander McLennan undertook initial training at HMAS Creswell from 1972 to 1976 and initial sea training in HMAS Duchess and HMNZS Taranaki. In 1984 Commander McLennan completed his Principal Warfare Officer's (PWO) course in the United Kingdom at HMS Dryad, before initially being the PWO and later Operations Officer in HMNZS Southland. He was posted to the ANZAC Ship Project in Canberra in late 1991 as the Operational Requirements Officer and the single point of contact for the NATO Sea Sparrow program. In 2000 Commander McLennan joined the RAN Staff College as Directing Staff for six months before being attached to the Australian Command and Staff College (ACSC) Project. While still based in Canberra, 2004 saw him undertaking configuration options studies to align and upgrade the New Zealand and Australian ANZAC Ships.

NOTES

1. H.W. Richmond, in his Diary as quoted by Arthur J. Marder, *Portrait of an Admiral: The Life and Papers of Sir Herbert Richmond*, Jonathan Cape, London, 1952, pp. 315 & 23.
2. A distinction previously accorded to only one other naval officer, Captain Alfred Thayer Mahan, USN.
3. Barry D. Hunt, *Sailor–Scholar Admiral Sir Herbert Richmond 1871–1946*, Wilfrid Laurier University Press, 1982, p. 1.
4. James Goldrick & John B. Hattendorf, *Mahan is not Enough—The Proceedings of a Conference on the Works of Sir Julian Corbett and Admiral Sir Herbert Richmond*, Naval War College Press, Newport, Rhode Island, 1993, Appendix B.
5. Hunt, *Sailor–Scholar*, p. 3.
6. Alfred C. Dewar, 'Admiral Sir Herbert William Richmond' *Naval Review*, February 1947, p. 3.
7. Admiral Richmond's obituary by Alfred C. Dewar, *Naval Review*, 35, February 1947, p. 2.
8. Admiral Lord John Fisher, *Memories*, Hodder & Stoughton, London, 1919, p. 104.
9. S.W. Roskill, 'Richmond in Retrospect', *Naval Review*, 51, January 1963, p. 24.
10. H.W. Richmond, *The Navy in India, 1763–1783*, Benn., London, 1931, a history of British–French naval conflict in the Hughs–Suffren period.
11. H.G. Thursfield, 'H.W.R.', *Naval Review*, 35, February 1947, p. 6.
12. Roskill, 'Richmond in Retrospect', p. 26.
13. Admiral Herbert W. Richmond, 'The Modern Conception of Sea Power' *Naval Review*, February 1943, p. 30.
14. Donald M. Schurman, *The Education of a Navy, the Development of British Naval Strategic Thought, 1867–1914*, University of Chicago, Chicago, 1965. p. 118.
15. R. Bacon, 'The Life of Lord Fisher of Kilverstone', *Naval Review*, 18, 1930, p. 168.
16. Schurman, *Education of a Navy*, p. 125.
17. Andrew Gordon, *The Rules of the Game, Jutland and British Naval Command*, John Murray, London, 1996, p. 576.
18. Hunt, *Sailor–Scholar*, p. 3.
19. Daniel A. Baugh, 'Admiral Sir Herbert Richmond and the Objects of Sea Power', in Goldrick & Hattendorf, *Mahan is not Enough*, p. 33.
20. *ibid.*, pp.14–15.
21. Captain W.V. Pratt, USN, July 1923 as cited in Trent Hone, 'Building a Doctrine: US Naval Tactics and Battle Plans in the Interwar Period', *International Journal of Naval History*, October 2002, Vol. 1 Issue 2, p. 14.
22. H.W. Richmond, 'The Modern Conception of Sea Power', *Naval Review*, 31, February 1943, p. 23.

23. H.W. Richmond, 'Considerations as to the War', 2 August 1915, as quoted in Marder, *Portrait of an Admiral*, p.187.
24. Richmond, 'The Modern Conception of Sea Power', p. 30.
25. H.W. Richmond, 'Remarks on Present Strategy', 14 February 1915 as quoted in Marder, *Portrait of an Admiral*, pp. 142–145.
26. Daniel A. Baugh, *Admiral Sir Herbert Richmond*, p. 19.
27. H.W. Richmond, 29 August 1916, as quoted in Marder, *Portrait of an Admiral*, pp. 219–220.
28. H.W. Richmond, 7 April 1916, as quoted in Arthur H. Pollen, *The Pollen Papers: Richmond to Pollen*, (edited by J.T. Sumida), Allen & Unwin, for the Navy Records Society, London, 1984, p. 34
29. H.W. Richmond, Diary, General Entry for April 1907, in National Maritime Museum, Greenwich, *Private Papers and Diaries*, NMM RIC/1/7.
30. *ibid.*, Diary April 1907.
31. Thursfield, *Naval Review*, February 1947, p. 6.
32. H.W. Richmond as quoted by George W. Baer, 'Conference Summary: Corbett and Richmond ... and Mahan and Us', in Goldrick and Hattendorf, *Mahan is not Enough*, p. 292.
33. H.W. Richmond as quoted by Marder, *Portrait of an Admiral*, p. 237.
34. Marder, *Portrait of an Admiral*, p. 89.
35. K.G.B. Dewar, *Official Papers, Minutes*, in National Maritime Museum, Greenwich, NMM DEW 5.
36. James Goldrick, 'The Irresistible Force and the Immovable Object' in Goldrick and Hattendorf, *Mahan is not Enough*, p. 83.
37. *ibid.*, p. 87.
38. H.W. Richmond, *Diary*, 1 September, 1915, as quoted in Marder, *Portrait of an Admiral*, p. 194.
39. Alfred Dewar, 'Naval Tactics, Studies in the Theory of ICOI', *Naval Review*, 1, 1913, p. 15.
40. Gordon, *The Rules of the Game*, Chapter 25.
41. An adaptation of *Pax Britannica*—itself a convenient shorthand term for the age during which an unchallenged sea power, Britain, exerted world wide and undisputed influence.
42. H.W. Richmond, 'Remarks on Present Strategy', 14 February 1915, as quoted in Marder, *Portrait*, pp. 142–145.
43. H.W. Richmond, *The Navy as an Instrument of Policy, 1558–1727*, Cambridge, Cambridge University Press, 1953, (edited by E.A. Hughes).
44. A term used to describe Sir Julian Corbett in Goldrick and Hattendorf, *Mahan is not Enough*, p. 226, but equally applicable to H.W. Richmond.
45. Schurman, *Education of a Navy*, p. 146.

BIBLIOGRAPHY

- Fisher, John, *Memories*, Hodder & Stroughton, London, 1919.
- Goldrick, James & Hattendorf, John B., *Mahan is not Enough—The Proceedings of a Conference on the Works of Sir Julian Corbett and Admiral Sir Herbert Richmond*, Naval War College Press, Newport, 1993.
- Gordon, Andrew, *The Rules of the Game, Jutland and British Naval Command*, John Murray, London, 1996.
- Hunt, Barry D., *Sailor–Scholar Admiral Sir Herbert Richmond 1871–1946*, Wilfrid Laurier University Press, London, 1982.
- Marder, Arthur J., *Portrait of an Admiral: The Life and Papers of Sir Herbert Richmond*, Jonathan Cape, London, 1952.
- Pollen, Arthur, H., *The Pollen Papers*, (edited by J. T. Sumida), Allen & Unwin, London, 1984, for the Navy Records Society.
- Richmond, Herbert W., *The Navy in the War of 1739–1748*, 3 Vols., Cambridge University Press, Cambridge, 1920.
- Richmond, Herbert W., *The Navy in India 1763–1783*, Benn, London, 1931.
- Richmond, Herbert W., *Statesmen and Seapower: Based on the Ford Lectures, Oxford, 1943*, Clarendon Press, Oxford, 1946.
- Richmond, Herbert W., *The Navy as an Instrument of Policy, 1558–1727*, Cambridge University Press, Edited by E.A. Hughes., Cambridge, 1953.
- Schurman, Donald, M., *The Education of a Navy, the Development of British Naval Strategic Thought, 1867–1914*, University of Chicago, Chicago, 1965.

Detecting Terrorist Activity: Defining the State's 'Threshold of Pain'

Colonel Andrew Smith

*Swā ðā driht-guman dr ēmum lifdon
ēadiglice, oððæt ān ongan
fyrene fremman feond on helle*

So times were pleasant for the people there
Until finally one, a fiend out of hell,
Began to work his evil on the world.

Beowulf^f

Since 11 September 2001, a US-led coalition has been waging a 'war on terror', with the aim of eliminating terrorist groups 'of global reach.'² This effort has manifested itself in 'conventional' war against states (Afghanistan³ and Iraq); counter-insurgency warfare as the same states struggle to re-establish themselves as democracies; and enhanced domestic security arrangements. A major part of the response, especially in the US, has involved improving the intelligence systems relied on to detect and counter developing terrorist threats before attacks can be mounted.⁴ At the strategic level, thus far the war has shown that terrorists and their activities are highly vulnerable to the national power of the states that hunt them, once detected and resolved into 'targets' on which that power (military, economic and diplomatic) can be focused. The weakest part in the process of prosecuting terrorist targets, however, is acquiring them in the first place.

At the tactical level, Coalition counter-insurgency efforts in Afghanistan and Iraq have tended to confirm a dangerous development predicted by some military thinkers since the late 1990s. The essence of that prediction, summed up in an Australian Army paper titled *Complex Warfighting*,⁵ is that advanced militaries (specifically, those of the US and some of its Western allies) now command unprecedented conventional military dominance, based on the exclusive possession of pervasive stand-off intelligence, surveillance, target acquisition and reconnaissance (ISTAR) capabilities and precision firepower (the latter best represented by airpower). Rational adversaries will respond to this dominance by operating from terrain whose physical and human complexity prevent detection by stand-off ISTAR, while demanding that firepower be applied with a discrimination that only high-resolution ISTAR can inform. The technological advantages on which advanced forces' conventional 'edge' relies are therefore negated, rendering them more vulnerable to adversary capabilities. At the same time, those adversary capabilities are becoming increasingly lethal, due to the ready availability of cheap but highly effective weapon systems that can be manoeuvred and operated by individuals.

For the nations waging the war on terror, efforts at both the strategic and tactical levels thus seem to face a common problem: an inadequate 'target acquisition' capability for terrorist (or insurgent) activities. If terrorism represents a long-term challenge to international security, as some writers suggest,⁶ this problem must be addressed. Moreover, if there are other candidates

(terrorist groups or ideologies) waiting to replace the current Islamist insurgency as threats to security, then the solution to finding terrorists must be enduring: in an age of 'macro-terrorism',⁷ nations may not be able to afford the 'learning curve' involved in adapting to a new set of tactics. Rather, a 'generic' solution is required that will be effective against any threat.

This article argues that the problem of acquiring terrorist targets needs to be tackled in two ways. The first (and very obvious) way is to improve the 'sensors' (ISTAR capabilities and intelligence processes) that detect and cue responses to important terrorist indicators. The second, less obvious and much more difficult approach is to capitalise on our understanding of our sensors' strengths and weaknesses by making terrorists do things that will render them more detectable—effectively forcing them to broach the 'detection threshold'. The very public improvements to national and international intelligence processes that are already underway suggest that states are actively prosecuting the first approach, at least at the strategic level.⁸ The second approach seems to be developing only 'accidentally', but is sufficiently promising to be worthy of active investigation. The article synthesises some of the concepts of *Complex Warfighting* with existing models of terrorist activity, ISTAR theory and the author's personal experience from the improvised explosive device (IED) fight in the current Iraq war to propose an integrated approach to the 'target acquisition' problem. In doing so, it may draw some long inferential bows, but the dangers of the current security environment justify such indulgences in the names of innovation and stimulating debate.

Terrorists as targets: The detectability problem

As well as defining 'complex terrain,' *Complex Warfighting* introduces the idea of the 'detection threshold' to articulate the problem faced when confronting an 'irregular' adversary in complex, mainly urban terrain. Put simply, such adversaries will be virtually undetectable to stand-off or 'technical' ISTAR sensors until they choose to initiate hostile action. Of greater concern to land forces, adversaries in complex terrain will be indiscernible even to the naked eye until friendly forces are well within the range of their weapons. The 'detection threshold' relates to the level of adversary activity that is detectable from stand-off distances. Activity **above** the threshold is detectable (and hence counter-measures can be taken); activity **below** the detection threshold is undetectable. In the environment postulated in *Complex Warfighting*, the threshold is set fairly high; most activity will occur below the detection threshold and will be undetectable until the adversary is physically engaged, probably at short range and by land forces. Those engagements will tend to open on the adversary's initiative, leaving friendly forces perennially at the disadvantage of surprise. The experience of Coalition forces in Iraq demonstrates this effect every day.

At the tactical level, the implication of a high detection threshold is that deliberate application of precision, stand-off fires (in the manner proposed by advocates of 'utopian' network-centric warfare (NCW)) becomes problematic, especially when the target area is characterised by human complexity that demands not only precision, but discrimination. The high-resolution information needed to achieve this discrimination is unlikely to be available from stand-off ISTAR sensors in the foreseeable future⁹; as a consequence, unravelling human complexity will remain the work of humans, at close range.

Several years ago, this author proposed a model for the 'life cycle' of a generic terrorist incident.¹⁰ That model identified three phases to any incident: a lengthy 'preparatory' phase, a short 'crisis', and a longer 'consequence' period. These can be represented as a linear progression, as shown below:

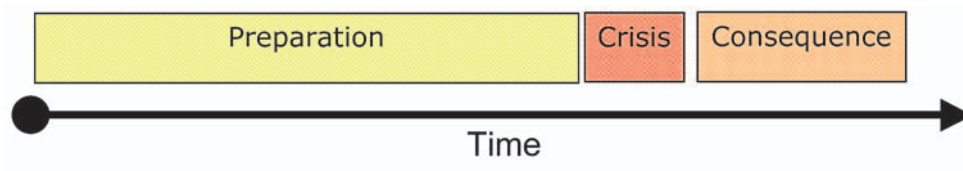


Figure 1: Terrorist Incident Phases

If the detection threshold and the relative detectability of adversary actions are overlaid on this model, this picture emerges:

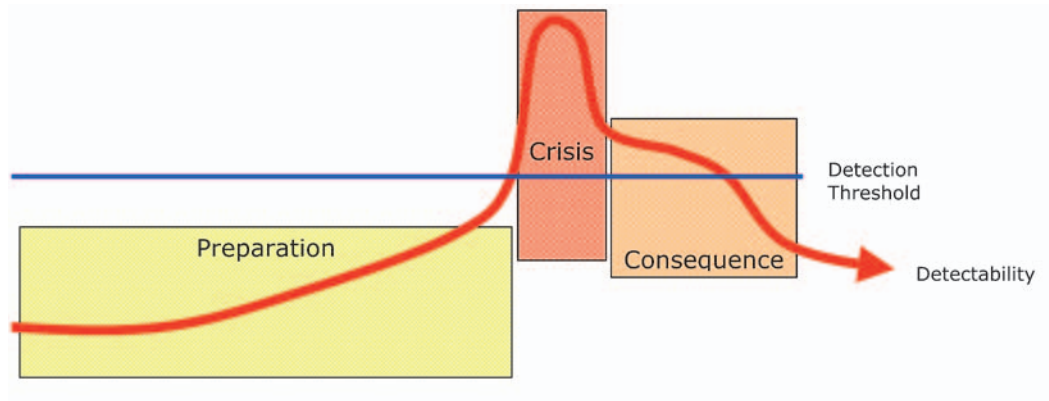


Figure 2: Detectability of Adversary Actions Throughout a Terrorist Incident

Figure 2 depicts graphically the problem confronting counter-terrorist efforts: most terrorist activities are 'subterranean' in nature, occurring below the detection threshold of existing sensor systems. This was demonstrated at the 'tactical' level—that is, in terms of an individual incident—by the attacks of September 11, 2001. Despite a preparatory phase lasting years, with much of the preparation being conducted on US soil, the hijackers' activities did not pop above America's detection threshold until the crisis was well under way. Already preparing for its next attack, al-Qaeda then almost immediately dropped below the detection threshold.

The detection threshold seems to demonstrate itself neatly in terms of individual incidents, but its applicability at the 'strategic' level, in terms of terrorist campaigns (as distinct from discrete attacks), is somewhat harder to judge. One approach to doing so is to elevate the 'generic' incident model, hypothetically, to the strategic level. At that level, the 'preparatory'

phase equates to the incipient stages of terrorism, during which antipathies crystallise and individuals become radicalised to the point of violence. This leads to a 'crisis' phase during which a campaign of violence is actively pursued. The consequence phase is harder to align with experience, but is consistent with the period of counter-insurgency or counter-terrorism during which violence is contained and the fundamental antipathies that generated it are addressed. During this period, terrorist groups will also analyse their experience and adapt their strategies to government responses or changing circumstances—thus 'looping' into the preparatory stage of a subsequent campaign phase.

If historical terrorist campaigns are mapped against the model described above, it is possible to plot a strategic detection threshold although the definition of detection alters somewhat. The current war on terror provides an interesting example. In this case, the underlying causes of Islamist discontent have been well known to affected states for many years—indeed, al-Qaeda had been mounting attacks, albeit much less destructive than 9/11, for nearly a decade. Indicators of terrorist activity had therefore been well and truly 'detected',¹¹ but prior to 9/11 these were not assessed as constituting a crisis warranting a national 'war effort' on the scale of that currently underway. Initial detections, therefore, were not fused into a threat picture that justified the focusing of national power. This is not to say that state intelligence systems were incapable of that fusion, although inquiries into various states' intelligence apparatus have determined that some faced challenges in that regard.¹² Rather, it may indicate that the threat perceived from terrorism had not yet triggered a concentration of national effort on its elimination. That trigger point may have constituted the strategic detection threshold prior to 9/11: the detection threshold was aligned, in other words, with a 'threshold of pain' in terms of the level of violence or damage of which al-Qaeda was judged capable.¹³ With the implementation of post-9/11 security reforms, many Western countries are now actively adjusting their detection thresholds downwards.

Continuing the analogy that the strategic detection threshold is 'pain' related, then the responses to it will 'cascade' like the physiological responses to painful trauma. As terrorist traumas are the crisis phases of particularly destructive attacks, reactive intelligence responses will be too late unless triggers can be devised that will allow sufficient warning to re-tune intelligence efforts to each new threat.¹⁴

Although there has been a clear increase in state counter-terrorism efforts since 9/11, it would be misleading to suggest that high-level counter-terrorism programs are a new development. The US, for example, established its Counterterrorist Centre (CTC) within the Central Intelligence Agency in 1986.¹⁵ Insofar as counter-terrorist efforts prior to 9/11 may have been directed according to a 'threshold of pain', it is illuminating to consider how that threshold was set.

Figure 3 suggests one set of criteria by which the threat posed by a terrorist group can be gauged. These are the level of state involvement in terrorist action (vertical axis) and the geographic reach of terrorist activities (horizontal axis).¹⁶

The pre- and post-9/11 'pain thresholds' of Western states can be inferred from their policies in relation to various terrorist groups. If the state support and 'reach' characteristics of those groups are plotted on the model above, the picture at Figure 4 emerges.

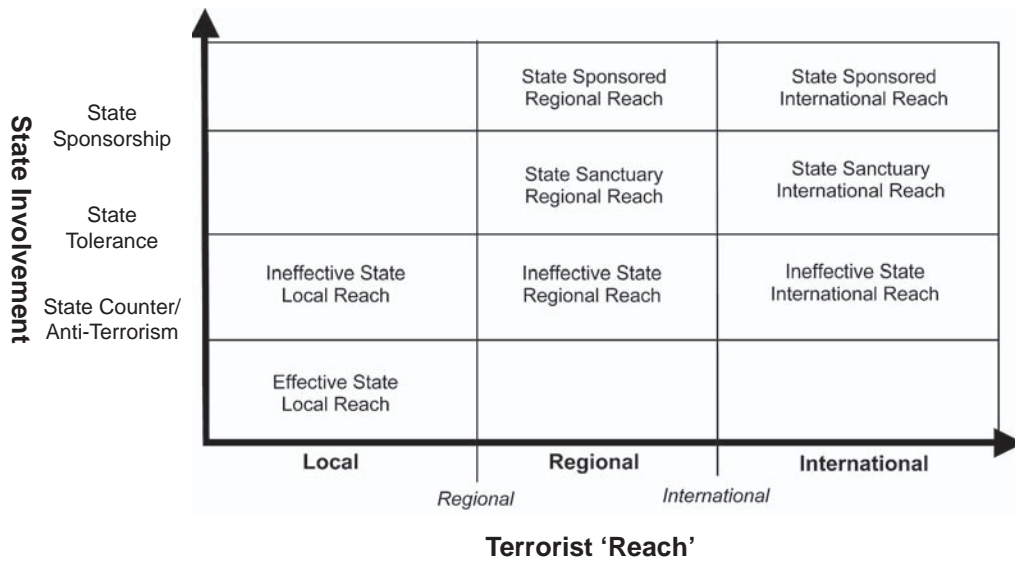


Figure 3: Terrorist Threat Model

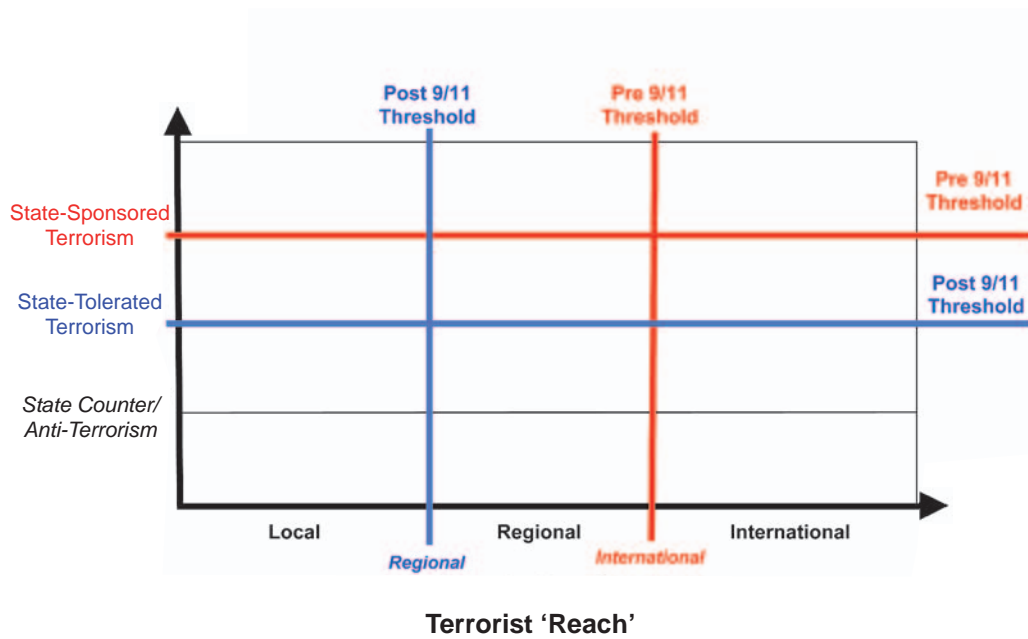


Figure 4: 'Pain' Threshold for Terrorist Threats

This modelling exercise presumes that state involvement, either through active complicity or ineffectiveness, is what makes a terrorist group a dangerous international threat. While this presumption seems valid for terrorist experience up until the current war, al-Qaeda's continued ability to mount highly destructive attacks in the absence of state support suggests that such support may no longer be a critical determinant.¹⁷ If the relationship between state support and an international group's ability to impinge countries' 'pain thresholds' has changed, our model may require modification to better reflect the realities of the post-9/11 world.

If a terrorist group's ability to threaten its target (let's say, a Western nation) is a function of the destruction that it can demonstrate the ability to inflict, then the necessary improvements to our model should better reflect the things that potentiate 'destructiveness'. This is not to ignore the paramount psychological dimension of terrorism by focusing on its physical manifestations: much of terrorists' effectiveness derives from their 'stage management' and use of the media, etc. These qualitative aspects of terrorist tradecraft are unlikely to create a detectable 'signature' until an attack is made, however, and are therefore of limited utility as early indicators. Another well-established paradigm may serve in assessing the destructive potential of a terrorist group.

Conventional metrics for gauging the threat posed by a potential adversary utilise two axes: capability and intent. Adapting these metrics to the assessment of a terrorism group, intent equates to ideology, while capability reflects the degree of destruction of which the group is capable as determined by either the resources available or the destructive means possessed.

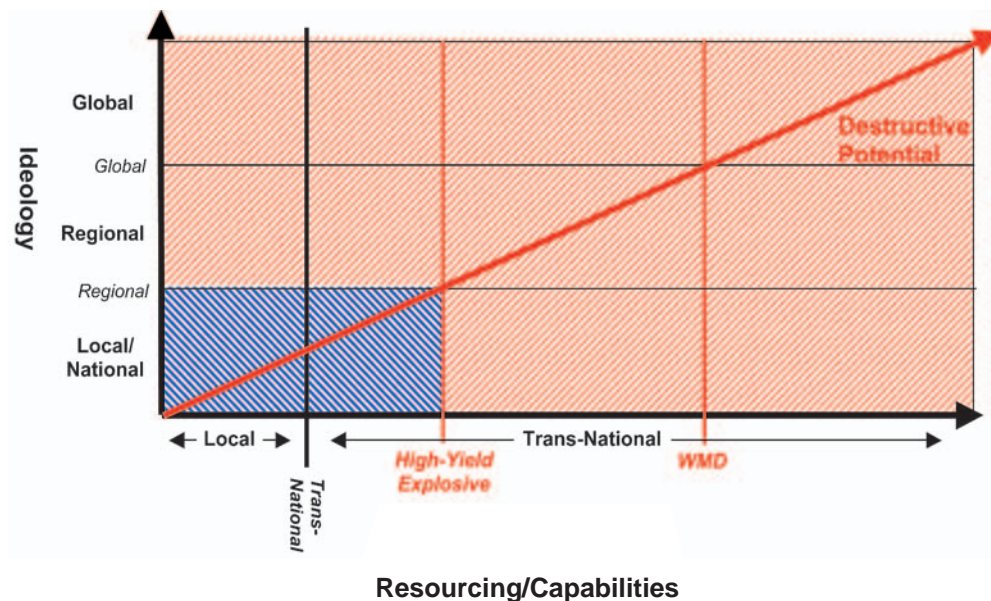


Figure 5: Terrorist Destructive Potential

Figure 5 attempts to show graphically that the destructive potential of a terrorist group is the result of ideology and capability.¹⁸ Ideology determines targeting, the level of violence that the group can justify and the geographical bounds within which the violence is applied—local/national, regional or global. The group’s resources and capability will govern the destruction or violence it can achieve. These are determined by access to finance and weapons, which tend to increase as support moves from local to transnational levels. Capabilities for high-yield explosive attacks or WMD are significant benchmarks in destructive potential. Even groups motivated by local ideologies can achieve transnational resource levels by accessing foreign support, either from state sponsors or sympathetic diaspora.

Using Figure 5, a combination of a global ideology and WMD constitute the highest threat, while a more lightly armed group with a local theatre of operations poses a much smaller problem. By selecting a point along the ‘Destructive Potential’ curve that represents the danger that it is prepared to tolerate, a state can calibrate its national detection threshold by defining the characteristics of terrorist groups ‘of concern.’ By way of example, Figure 5 illustrates a judgement that unacceptable danger occurs when regional ideology coincides with a certain level of transnational resources (the red zone), because after that point there is a real risk that violence will spill across state borders with the sort of destructive potential demonstrated by high-yield explosive attacks. Below these levels of motivation or resources, terrorists’ destructive potential is inherently self-limiting (the blue zone on the model).

A group such as al-Qaeda, for example, would plot very high on the Destructive Potential curve because of its global ideology, significant resources, demonstrated capacity for highly destructive attacks and interest in acquiring WMD.

In testing for certain levels of ideology or resourcing, it would be dangerous to presume that those characteristics are fixed in respect of any particular group. Poor groups motivated by local grievances could be coopted into ‘symbiotic relationships’ by others with more dangerous international agenda and greater resources—some proponents claim that this phenomenon operates in respect of the ‘global Islamist insurgency’. This possibility suggests that both the ideological and resource characteristics of terrorist groups are dynamic, necessitating long-term monitoring and periodic updating of assessments.

The resource implications of maintaining a long-term, world-wide, high-resolution scan for potential terrorist threats are significant. To do so cost effectively requires, to borrow again from the jargon of ISTAR, a form of strategic ‘broad area surveillance.’ This involves sensors with wide fields of view and just sufficient resolution to detect changes that warrant investigation by more precise (and expensive) methods. Those changes are the ‘triggers’ mentioned earlier. In terms of the strategic hunt for groups of concern, the triggers sought should be features common to any such group: that is, evidence of a violent, transnational ideology and commensurate resources. Specific indicators might be apocalyptic rhetoric on websites or at gatherings, a certain level of finance, attempts to source particular types of weapons or explosives or involvement in special types of training. In states that maintain functioning national security institutions (police forces, intelligence agencies, customs services and financial regulation), these sorts of clues should be detectable by relatively simple techniques, such as internet keyword searches, monitoring of financial transfers and analysis of police reports. Once detected, triggers can be investigated by higher-resolution sensors—in ISTAR terms, this amounts to ‘focal area’ surveillance or even ‘reconnaissance’.

Given the human complexity of the environments within which terrorist indicators must be found, 'focal' interrogation of those indicators may require highly specialised sensors, such as location-specific human intelligence (HUMINT) capabilities. These take time to develop and can be highly perishable. Maintaining global coverage with such capabilities may be a practical impossibility for any single country. This imposes a premium on early detection of signs of trouble, to enable time to re-tune intelligence capabilities so that potential problems can be investigated before they coalesce into dangerous threats. This might involve establishing new HUMINT capabilities 'in house' or forming new strategic relationships with countries that have the necessary capabilities. Even with well-developed and vigilant intelligence systems, some attacks will escape detection (as the London transportation system attacks of 7 July 2005 demonstrate). Maintenance of sound broad and focal surveillance capabilities nevertheless offers the best prospect for cost-effective prevention of terrorism.

Fighting for information on terrorists

While there are obvious benefits from increasing the sensitivity of our terrorist sensors, reliance on that sensitivity alone is an essentially passive approach to terrorist target acquisition. The conventional ISTAR paradigm also contains a concept of 'fighting for information': that is, manoeuvring in ways that force the adversary to reveal information that enables targeting. In a conventional setting, at the tactical level, this challenge is simplified somewhat by the need of adversaries to occupy ground somewhere. In the case of terrorism, manoeuvre at all levels is made more difficult by the ability of terrorists to 'disappear' into the human environment. Nevertheless, experience from current operations in Iraq suggests some possibilities.

In Iraq, the single most lethal insurgent tactic is the use of improvised explosive devices (IEDs).¹⁹ The characteristics of IEDs make them ideal for deployment below the detection threshold of conventional forces. Coalition forces have employed a number of techniques to lower the detection threshold, most of them associated with improved ISTAR capabilities—ranging from increased patrol activity to better technical sensors and post-blast 'forensic' exploitation capabilities. While these measures have, as expected, led to increased detections of IED activities, still other detections were the serendipitous results of unconnected Coalition actions.

As well as improving its ability to detect the current forms of IED activity, the Coalition has also responded by increasing the amount of armoured protection provided to vehicles operating in IED areas. This has markedly reduced IED effectiveness, leading bomb makers to explore ways of restoring the lethality of their weapons. One early approach was to increase the size of explosive charges used in roadside IEDs. This simple design change increased the signature of IED preparations and the IEDs themselves. Combined with enhanced sensor performance, this led to increased detections. Naturally, an adaptive adversary was able to change tactics to sink back below the detection threshold,²⁰ but the Coalition nevertheless enjoyed increased success for a time. The increase in armoured protection was, in this case, a form of 'manoeuvre' in the IED battlespace and the experience suggests that adroit, unconventional manoeuvre remains a way of 'fighting for information' in complex situations. Tactical commanders must continually look for such ways to force opponents to 'pop' above the detection threshold.

While the IED battle in Iraq indicates that, at the tactical level, forces may be able to fight for information on terrorists, it does not follow automatically that the same approach will translate to the operational or strategic levels. Nevertheless, the potential benefits suggest that it is worth a try. The threat characteristics model depicted in Figure 5 may offer some insight into the possibilities available.

Given that a key characteristic of a dangerous terrorist group is a violent, transnational ideology, exposing such ideologies could usefully guide intelligence activities. One means of doing so might be an aggressive information campaign promoting a contradictory ideology. This could prompt potential terrorists to compete for popular support by amplifying their public rhetoric, exposing their ideology more clearly and possibly revealing the personalities behind it. This information would allow focused analysis of motivations and cue the investigation of resources and capabilities, enabling a comprehensive assessment of the threat posed by the group.

In a sense, the West's experience with Islamist terrorism since the late 1980s demonstrates this type of ideational 'reflex control'. Many commentators, as well as some Islamist rhetoric, claim that the current wave of Islamist violence is a response to perceived threats of cultural extinction by the West, represented by the US. According to this view, the pervasiveness of Western (US) cultural messages constitutes an aggressive attack on fundamental Muslim values: the increasing identification of US-aligned Western powers as 'crusaders' illustrates this point. The prodrome of the current Islamist insurgency may therefore have been played out in Mosque sermons, the Islamic press and other fora well before fears crystallised into an intractable commitment to high-level violence. If this interpretation of events is accepted, then clearly the West missed these indicators and failed to take early corrective action, allowing the situation to spiral into the current problem.

The preceding argument suggests that strategic 'sounding' for dangerous opposing ideologies is a constant side-effect of the information age: telemedia, films and the internet allow dominant economies to export their ideologies readily, even unintentionally. This may provide all the ideational 'manoeuvre' necessary to expose competing ideologies, but could also be dangerously hit or miss. Given the stakes involved, a more deliberate and nuanced approach might be appropriate.

Deliberately projecting a challenging ideological message, however, will be highly risky: a clumsy effort could backfire, playing into terrorists' hands by catalysing popular resentment. Strategic 'manoeuvre' of this sort will require sophisticated cultural awareness, good local engagement and deft information operations if such results are to be avoided, but these same capabilities will be essential to early 'non-kinetic' responses to problems. Fighting for terrorist information at the strategic level is thus extremely challenging and could be impractical, but even small successes would justify the risks and costs involved.

Seizing the initiative: Pre-crisis operations

Experience at both the tactical and strategic levels supports the counter terrorist truism that 'prevention is better than cure': it is better to stop a terrorist act (or campaign) from being

launched than to try to defeat it once it has begun. This suggests that both tactical and strategic efforts need to focus on the preparatory phases of terrorist incidents or campaigns, rather than on their crisis phases.²¹ As the preceding discussion has shown, this requires investment in appropriate sensors and cunning manoeuvre, at all levels.

At the tactical level, pre-crisis operations need to focus on the preparations that terrorists make for individual attacks. To return to the example of the Iraq IED problem, these are all the activities undertaken prior to emplacement and arming of a device: sourcing of components, their transportation, assembly and 'warehousing', the acquisition of expertise, the recruitment of emplacements, etc. Each of these activities has a signature that is detectable by appropriate sensors.

In many cases, it will only be possible to determine the indicators of terrorist attack preparations by analysing the last attack. By exploiting the physical evidence recovered in the consequence phase of an IED attack, for example, the design of the device involved can be determined and its individual components identified.²² Where these features recur through a number of IED incidents in a particular area, patterns emerge which can be used to cue other intelligence resources; for example, the deployment of tactical HUMINT teams to seek clues on component suppliers or focused surveillance in the likely areas of bomb factories or caches. By identifying and analysing indicators of IED preparations, targets can be identified (for example, bomb makers and/or their 'factories') that can then be prosecuted by pre-planned raids or even police searches. Using this approach, counter-IED operations use information obtained in the consequence phase of an attack to move into the preparatory phase of the IED 'life cycle', reducing the risk to friendly forces and promising much greater effectiveness by 'taking out' an entire source of supply (a bomb maker or his 'factory'). This contrasts starkly with 'classical' forms of counter-IED operations, which are concentrated in the crisis phase and consist of hunting individual devices when they are armed and at their most dangerous.

The exploitation of evidence obtained in the consequence phase, as a means of directing pre-crisis operations, does not elevate readily to the strategic level because:

- It is important to avoid altogether the consequences of a terrorist campaign (as distinct from an individual tactical incident). The opportunity to re-tune intelligence sensors on the basis of specific, demonstrated terrorist strategy presumes a disastrous failure of strategic prevention.
- In any event, the life cycles of terrorist **campaigns** do not repeat so often as those of individual attacks.

An emphasis on pre-crisis operations nevertheless remains valid at the strategic level, as it offers the same 'prevention is better than cure' benefits. Early detection of indicators of dangerous terrorist potential can cue actions to prevent a campaign of violence from emerging. Such pre-crisis operations will be mainly non-kinetic, applying 'soft' power through things like aid programs, education and information campaigns or even trade and export controls to restrict the movement of finance and weapons. The analogy of 'target acquisition' is still relevant to these efforts, as such policies require clear objectives in order to be effective.

Conclusions: Redefining the threshold of pain

None of the approaches discussed above—tactical or strategic—is earth-shattering in its novelty or technical demands. Arguably, all have been within the capacities of most Western states for some time. Some of those states have even gone some way to adopting them—the UK, for example, has developed significant tactical ‘pre-crisis’ capabilities in response to 30 years experience of Irish Republican terrorism. The motivation to re-focus national defence efforts—and to maintain a new focus—naturally derives from perceptions of credible threat.²³ Until 9/11 and its aftermath, few Western countries’ experience of terrorism warranted the concentration of national effort needed to invest heavily in strategic surveillance and remediation programs, or even to re-cast conventional military capabilities in an ‘unconventional’ mould.

The fundamental question now is whether the perception of international terrorist threats is sufficiently credible or enduring to make states create and maintain the sort of sophisticated, long-term strategic intelligence and soft power projection capabilities that will be necessary to detect the incipient stages of future international terrorist causes and prevent them from evolving into violent crises. The historical track record of national ‘attention spans’ is not good: as in Beowulf’s day, people still tend to drop their guard when times are pleasant. There is, however, some hope that the current war on terror will teach some enduring lessons.

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NOTES

1. Seamus Heaney (trans) *Beowulf*, New York, Farrar, Straus, Giroux, 2001, p. 9. I am indebted to Major Kyle Warren US Army, for bringing this parallel to my attention.
2. US-led, the 'war' is being prosecuted to differing degrees by a significant number of state actors. See George W. Bush, Address to a Joint Session of Congress and the American People, 20 September 2001.
3. The 'statehood' of Taliban-governed Afghanistan can be debated. Its de facto statehood is accepted here on the basis that the US chose to negotiate with the Taliban regime prior to commencing military operations, that it respected the territorial sovereignty of that regime until the communicated ultimata had expired, and that when it commenced hostilities they were directed against the sovereign forces of the regime.
4. The reviews of intelligence 'failures' prior to the September 11 attacks in the US, and the legislation subsequently enacted to improve the associated processes, are an example of this effort.
5. *Complex Warfighting*, Future Land Warfare Branch, Army Headquarters, Australian Department of Defence, Canberra, 2004. This paper deals with the idea of 'complex terrain' in considerable depth: it is beyond the scope of this article to analyse it further.
6. For example, Philip Bobbitt in *The Shield of Achilles*, Penguin, London, 2002.
7. Several terms have emerged to describe the large-scale violence that has tended to characterise international terrorist incidents since the 1990s. This term was put forward by Clive Williams at the University of Adelaide's *Exploring Asymmetric Warfare* forum, Adelaide, 1 October 2003.
8. The US Intelligence Reform and Terrorism Prevention Act, signed into law on 17 December 2004, provides a good example of the comprehensive reforms to intelligence institutions and practices that many states are now pursuing.
9. This applies especially to urban terrain: while it is foreseeable that jungle canopies will eventually become 'transparent' to remote sensors, cities and towns pose enormous problems that are unlikely to be solved in the next several decades. Brigadier Justin Kelly, *Complex Warfighting: The Land Force Response*, Address to the Royal United Services Institute of the Australian Capital Territory, 1 June 2005.
10. A.J. Smith, 'Combating Terrorism', *Military Review*, Leavenworth, LXXXII/1, January–February 2002, pp. 11–18.
11. Here, I resort to the jargon of ISTAR, under which information on targets is refined according to a hierarchy of resolution. 'Detection' is the lowest level, with resolution being progressively increased through the stages of 'localisation', 'recognition', 'identification' and 'targeting'.
12. In the case of the US, for example, problems affecting the intelligence community prevented the production of actionable intelligence even though both the data and the analytical tools (or technological potential) to process them did exist. *Report of Joint Inquiry into Intelligence Community Activities before and after the Terrorist Attacks of September 11*, US Senate select Committee on Intelligence and US House Permanent Select Committee on Intelligence, Government Publishing Office, Washington, 2002, available at: <<http://www.gpoaccess.gov/serialset/creports/911.html>>, accessed 5 March 2005.
13. The strategic 'threshold of pain' may also have been quite specific to each nation. For example, during the late 20th century three groups conducted terrorist campaigns that are conventionally

acknowledged as having caused in the vicinity of 30,000 deaths each without becoming the focus of a Western counter-terrorism 'war effort' (FARC in Colombia, the Liberation Tigers of Tamil Eelam in Sri Lanka and the Kurdistan People's Party in Turkey). Each of these was fairly disciplined in restricting violence to its own country or those immediately adjacent, while the media probably did its part by not overplaying these campaigns in the Western news. In other words, the West was only minimally affected by this violence, despite its scale, and hence the Western 'threshold of pain' was not crossed.

14. The sarin gas attacks mounted by the Aum Shinrikyo (Aleph) sect in Japan in 1994–95 provide another example of an adjustment of a national counter-terrorist posture in response to an event 'trigger.' Two significant pieces of data support this assertion. The first is the timing of the US Defense Against Weapons of Mass Destruction Act of 1996 (establishing the 'Nunn–Lugar–Domenici Domestic Preparedness Program'). Although this was coalescing in the sponsors' minds earlier, the Aum attacks triggered its activation. The second datum is provided by conducting a simple search for documents related to terrorist use of WMD. This reveals an 'explosion' in the rate of publication of such material post-1995. My inference is that the Aum attacks drew the terrorist WMD threat across an invisible 'credibility threshold,' stimulating more attention to the problem.
15. See *DCI Counterterrorist Center* available at: <<http://www.cia.gov/terrorism/ctc.html>>, accessed 5 March 2005.
16. I am indebted for this model to Major Kyle Warren, US Army, and his unpublished paper 'Terrorism, the Obscure Threat: Profiling and Targeting Today's Enemy,' submitted in partial satisfaction of the requirements for Course A579 (Terrorism), US Army Command and General Staff College, Fort Leavenworth, 2002. The top left-hand box of this matrix table could also be filled, to cover 'State Sponsored, Local/Internal Reach', thus bringing into consideration the contentious area of 'state terror'. Although terror by a government against its own people actually provided the historical origin of 'terrorism' in the English language (the term first appeared in 1795, referring to the French 'Terror' of 1794: *Oxford English Dictionary*), state terrorism is one of the ideas that has confused the modern 'definitional' debate about terrorism. As it is not the purpose of this article to resolve that debate, the category has not been included in the matrix. In any event, localised internal terror is much less likely to produce terrorist threats to other nations than it is to generate demands for humanitarian intervention.
17. This is not to ignore the significance of state sponsorship, which some commentators argue is still a dangerous enabler of terrorism. For example, see Boaz Ganor *The Counter-Terrorism Puzzle: A Guide for Decision-Makers*, Transaction Publishers, New Brunswick, 2005, pp. 79–92.
18. Boaz Ganor proposes, similarly, that terrorism is the sum of motivation and capability. While this is a valid construct for managing terrorist threats within a particular nation, it differs from the one proposed here in that it does not seek to identify a point after which one country's terrorism problem becomes another's. Ganor, *The Counter-Terrorism Puzzle: A Guide for Decision-Makers*, 2005, pp. 41–44.
19. Weapon lethality in Iraq is difficult to gauge accurately from open source material, which requires considerable filtering to produce a reliable data set. The available data, as at early July 2005, covers 917 US fatalities reported since the end of 'major combat operations' on 1 May 2003, whose cause of death was a specified form of enemy action. Of these, IEDs exclusively account for 445 or 48.5%. This compares with a total of 247 (26.83%) for the next three most lethal techniques: small arms, rocket propelled grenades and indirect fire. Source: US Department of Defense casualty releases, available at: <<http://www.defenselink.mil/news/>>.
20. One new technique is the employment of shaped charge IEDs able to penetrate vehicle armour. Lieutenant General James T. Conway, Director of Operations, J-3. DoD News Briefing, 16 June 2005, available at: <<http://www.defenselink.mil/transcripts/2005/tr20050616-3061.html>>, accessed 20 June 2005.

21. Here, I revert to the 'generic' terrorist incident lifecycle depicted in Figure 1.
22. In Iraq, this has involved the establishment of a bomb scene investigation capability more similar to a police forensic service than to a traditional military intelligence function. Establishing this capability and learning to employ it took time, during which the IED problem escalated.
23. For a useful discussion of this concept, see Michael Ignatieff *The Lesser Evil*, address to Boston University, replayed on ABC Radio National 'Background Briefing,' 24 April 2005, available at: <<http://www.abc.net.au/rn/talks/bbing/stories/s1254582.htm>>, accessed 12 May 2005.

BIBLIOGRAPHY

Books

Bobbitt, P., *The Shield of Achilles*, Penguin, London, 2002.

Ganor, B., *The Counter-Terrorism Puzzle: A Guide for Decision-Makers*, Transaction Publishers, New Brunswick, 2005.

Heaney, S. (trans) *Beowulf*, New York, Farrar, Straus, Giroux, 2001.

Articles

Smith, A.J., 'Combating Terrorism', *Military Review*, Leavenworth, LXXXII/1, January–February 2002.

Papers

Complex Warfighting, Future Land Warfare Branch, Army Headquarters, Australian Department of Defence, Canberra, 2004.

Warren, Major K., 'Terrorism, the Obscure Threat: Profiling and Targeting Today's Enemy', US Army Command and General Staff College, Fort Leavenworth, 2002 (unpublished).

Williams, C., 'Macro Terrorism', *Exploring Asymmetric Warfare* forum, University of Adelaide, 1 October 2003.

Internet Resources

Conway, Lieutenant General J.T., DoD News Briefing, 16 June 2005, available at: <<http://www.defenselink.mil/transcripts/2005/tr20050616-3061.html>>, accessed 20 June 2005.

DCI Counterterrorist Center, available at: <<http://www.cia.gov/terrorism/ctc.html>>, accessed 5 March 2005.

Defense Against Weapons of Mass Destruction Act of 1996, available at: <<http://www.fas.org/spp/starwars/congress/1996/pl104-201-xiv.htm>>, accessed 5 March 2005.

Ignatieff, M., *The Lesser Evil*, address to Boston University, replayed on ABC Radio National 'Background Briefing,' 24 April 2005, available at: <<http://www.abc.net.au/rn/talks/bbing/stories/s1254582.htm>>, accessed 12 May 2005.

Report of Joint Inquiry into Intelligence Community Activities before and after the Terrorist Attacks of September 11, US Senate Select Committee on Intelligence and US House Permanent Select Committee on Intelligence, Government Publishing Office, Washington, 2002, available at: <<http://www.gpoaccess.gov/serialset/creports/911.html>>, accessed 5 March 2005.

US Department of Defense casualty releases, available at: <<http://www.defenselink.mil/news/>>.

Intelligence Reform and Terrorism Prevention Act of 2004, available at: <<http://www.house.gov/rules/s2845confrept.pdf>>, accessed 5 March 2005.

Addresses

Bush, G.W., *Address to a Joint Session of Congress and the American People*, 20 September 2001.

Kelly, J., *Complex Warfighting: The Land Force Response*, Address to the Royal United Services Institution of the Australian Capital Territory, 1 June 2005.

The Health and Wellbeing Consequences of Military Deployment

Lieutenant Colonel Scott Kitchener

Introduction

In October 2004, the Centre for Military and Veterans' Health conducted a Think Tank entitled 'The Health and Wellbeing Consequences of Military Deployment'. The purpose of the Think Tank was to inform the development of policy and research with respect to the health and wellbeing of veterans following military deployment. The aim of the paper is to summarise the discussions of the Think Tank, including foundational issues, as well as the perspectives and experiences of the participating nations. A number of conclusions and recommendations were made which potentially impact on the Australian Defence Force (ADF) and the Department of Veterans' Affairs (DVA) regarding post-deployment health and wellbeing of Service personnel and veterans.

Foundation Concepts in the Consideration of Post-Deployment Health and Wellbeing

The Think Tank acknowledged that several foundation concepts were essential in considering the health and wellbeing of veterans following deployments. Broadly these were that post-deployment health outcomes are potentially positive or negative and commonly indeterminate, ill-defined and characterised by concurrent psychological and somatic consequences.

The Think Tank also identified definitional issues around the term 'deployment' which impact on the consideration of post-deployment health and wellbeing. The ADF undertakes activities including warlike and non-warlike operations, peacekeeping and peace monitoring operations, non-operational overseas exercises, domestic exercises and humanitarian assistance operations both in Australia and overseas. It was agreed that the scope of the considerations of the Think Tank would be warlike and non-warlike overseas military operations, including humanitarian assistance operations.

Differences in the focus of existing providers of health care following deployment must be also recognised. The Department of Veterans' Affairs addresses the long-term health support of eligible veterans determined to have health problems related to military service. The Health Service Branch of the ADF, while providing care for veterans remaining on full-time service, is primarily directed towards maintaining health standards for re-deployability. Entry to the ADF and deployment on operational service implies fitness; however, this cannot be assumed and therefore pre-deployment health status is an issue in determining a baseline for deployment-related health consequences. Further, in the current climate of operations supported by the ADF, multiple deployments are common. This creates complexity in determining the pre-deployment health of previously deployed veterans and the health consequences of subsequent deployments. Such complexity is not readily managed with the detail captured in existing health information systems in the ADF and information is not readily carried forward for utilisation by the DVA or other health providers after ADF service. Health data management was identified as a key aspect to be addressed.

Current post-deployment health and wellbeing research and the provision of post-deployment health care in Canada, the UK, and the United States were summarised at the Think Tank. Also presented and discussed were the findings of the Australian Gulf War study, studies of the health of other Australian veterans, and studies into the health care of the ADF more generally.

Post-conflict themes and experiences

The body of research around post-conflict adverse health syndromes lacks systematically collected data (Dandeker et al. 2003). The reasons for this perhaps arise from the nature of research bias inherent in studies attempting to attribute causality of any single disease to the exposure of warlike conflict. Biases include the absence of control populations, poor exposure data and reporting biases (Hyams et al. 1996).

Post-conflict syndromes have followed wars since at least the United States Civil War (Hyams et al. 1996) and the Boer War (Jones et al. 2002). From conflict to conflict, these syndromes have not differed greatly, with variations more related to the era in which the war was fought. In the 19th and early 20th centuries debility syndromes were identified. Somatic syndromes appeared more after the First World War and the neuropsychiatric syndromes arose following the Second World War and conflicts since up to the Gulf War of 1991. Medical science, the nature of war and contemporary cultural aspects influence the nature of syndromes reported (Jones et al. 2002). Focus upon the psychological and physical ill health of veterans in the United States became acute following the Vietnam conflict when the first five years after separating from the military was associated with an increased risk of dying from motor vehicle accidents, suicide, homicide and accidental poisoning (Anon 1987). Psychological problems including depression, anxiety and combat related post-traumatic stress disorder, were also more common among Vietnam veterans (Anon 1988a). Among Australian Army veterans of the Vietnam conflict, combat exposure was related to increased reporting of health problems, with some chronic physical conditions and psychological problems lingering for several decades (O'Toole et al. 1996a; O'Toole et al. 1996b). Infertility and birth defects were reported as more common among veterans of the era; however, this was not supported by systematic investigations (Anon 1988b).

Investigation of post-deployment health consequences has begun to be addressed as structured iterations of research projects are conducted. The themes evolving from research around recent conflicts such as the 1991 Gulf War are directed towards issues such as the definition of environmental exposures during the deployment and the related health problems (regardless of whether these fit known syndromes); how to provide health care for veterans after deployment; and prevention of adverse health outcomes in future deployments (Joellenbeck and Hernandez 2002). Perhaps a common omission from such research has been recognition of positive health outcomes of military deployment for individuals as identified in the 'Final Report of the Expert panel to review SAS Veteran's Health Concerns' (2003).

US perspectives

In his presentation to the Think Tank, Dr. K. Craig Hyams of the United States Department of Veterans' Affairs (VA) emphasised post-conflict syndromes as expected outcomes. Notably, he presented findings illustrating that veterans returning from recent deployments to Iraq and

Afghanistan were presenting with similar health problems; however, VA health care usage was higher among veterans of the Iraqi conflict. Dr. Hyams further indicated that veterans had presented with a wide variety of conditions but that no specific evaluation or testing lends itself to screening. The VA system has been made available, free of charge, for a period of two years after separation, to any United States Serviceperson returning from the Gulf or Afghanistan, complaining of any health problem possibly related to war service.

The (United States) Research Advisory Committee on Gulf War Veterans' Illnesses recently reported its findings and recommendations with respect to the status of scientific progress in understanding in the area. The report is referred to as 'The Binns Report'. The primary conclusions were that not all mechanisms of ill-health and disease related to deployment are understood, and that therefore more research is needed (Binns et al. 2004). These conclusions are certainly controversial, in that they directly conflict with findings made by the (United States) Institute of Medicine (Joellenbeck and Hernandez 2002), particularly in the causality or otherwise of low dose toxic agent exposure (Fulco et al. 2000) and the existence or otherwise of a Gulf War Syndrome (Doebbeling et al. 2000). In some quarters such contradictions are seen as indicating a lack of impartiality and a failure of scientific process in addressing the problem of ill health arising after this conflict (Deahl 2005).

The United States military response to the difficulties of studying post-conflict health and wellbeing has been the collaboration of the Departments of Defense and Veterans Affairs in founding a large prospective study of Service personnel (Chesbrough et al. 2002). An investigator on this study, the 'Millennium Cohort', Lieutenant Colonel Tim Wells, discussed details with the Think Tank. The research project is designed to evaluate the impact of military deployments on various measures of health over time, including medically unexplained symptoms and chronic diseases such as cancer, heart disease and diabetes. When fully operational, the cohort will develop considerable epidemiological power, ultimately enrolling 140,000 United States Service personnel and following their military careers and beyond using survey questionnaires including questions on demographic characteristics, self-reported medical conditions and symptoms, health-related behaviours and self-assessed physical and mental wellbeing. Computerised health data from the Departments of Defense and Veterans Affairs will augment survey data on health outcomes. Most recently, the study was able to investigate the psychological health effects among military populations of the September 11, 2001 terrorist attacks (Smith et al. 2001).

Canadian perspectives

In 1995, the Canadian Defence Force established a clinic to investigate and manage ill health among veterans of the 1991 Gulf War (Robb 1998). Colonel Ken Scott presented the preliminary findings of an audit of the clinic which functioned up until 1997. The majority of veterans assessed at the clinic were found to have mental health, musculoskeletal and digestive system conditions referred for specialist assessment and management. Approximately one quarter of those assessed were diagnosed with a depressive illness. Notably, depression was far more prevalent than post-traumatic stress disorders in the group seen. In 1997, the Canadian Department of Defence expanded the clinic program to four clinics across the country to cater for veterans of deployments to Bosnia, Somalia and Rwanda, and the Deployment Health Section was established

in the Canadian Forces Health Services Group. The Section has contracted a study surveying over 3000 Canadian veterans of the 1991 Gulf War compared to a similar number of veterans not serving in the Gulf War. Gulf War veterans in this study have been found to have increased disability and reporting of both physical and mental health symptoms which were associated with lower rank, income and service in other operations in other theatres. They also concluded that exposure to biological warfare countermeasures including pyridostigmine bromide and anthrax and plague vaccines were unrelated to symptom reporting. It was concluded that no Gulf War syndrome could be discerned.

In addition to establishing clinical practice guidelines for the screening, investigation and management of post-deployment ill health and medically unexplained physical symptoms, the Canadian Forces Health Services group has begun an enhanced screening process for veterans of current deployments to the Middle East. This includes a general medical questionnaire delivered four to six months after return to Canada and referral for management as required. Preliminary results are that this program has identified many Canadian veterans with potential health problems who would have otherwise been undiagnosed. Other notable findings are that more attention is warranted to divorced, separated and widowed veterans to address adverse events from deployment.

British perspectives

The British experience of service in the 1991 Gulf War has been associated with reporting of lesser health and more symptoms (Unwin et al. 1999), but no particular syndrome has been discerned (Ismail et al. 1999; Everitt et al. 2002). An independent (British) inquiry chaired by Lord Lloyd of Berwick investigated and reported on circumstances of the health of approximately 6000 British troops following deployment to the 'first' Gulf War (Lloyd et al. 2004). The report canvassed evidence from a large number of veterans and a relatively small number of recognised British experts in the field and (only) one medical expert from the United States. The primary finding of this inquiry was that veterans in receipt of pensions were most concerned about their condition being recognised and the effort required to obtain that recognition. The recommendation arising from the inquiry was for formal recognition of illnesses as being related to this deployment. Controversially, the inquiry supported the use of the term 'Gulf War Syndrome' against the evidence and opinion of the lead British expert, Professor Simon Wessely of the Gulf War Illness Research Unit at Guy's, King's and St. Thomas' Medical School, London.

The British experience of post-conflict health issues and the outcomes of collaborative work undertaken by the Gulf War Illness Research Unit, the Ministry of Defence and Royal Defence Medical College were discussed at the Think Tank by Professor A. David. Approximately one-fifth of British veterans of the 1991 deployment to the Middle East believe they have Gulf War Syndrome (Chalder et al. 2001). Sociological and demographic factors were found to be the most closely related to psychological and physical ill health (Ismail et al. 2000). These factors included rank, perhaps as a surrogate for socioeconomic status as reflected in health correlations in civilian populations. Ill health was also observed to be more common among those veterans returning to civilian life rather than remaining in the military environment. Multiple vaccinations were found to have a relationship with ill health, with the concurrent stress of deployment probably contributing (Hotopf et al. 2000). However, no evidence was found of a distinct Gulf War Syndrome

among British Service personnel (Everitt et al. 2002). The investigation of the current deployment of British Service personnel to the Middle East involves a self-reported questionnaire delivered directly or by mail to veterans within two years of deployment conclusion.

Australian perspectives

Associate Professor Malcolm Sim, Monash University, was the principal investigator of the Australian Gulf War Study. This study investigated whether veterans had an increased risk of psychological disorders, and increased prevalence of other medical conditions, chronic fatigue syndrome, other evidence of adverse health effects, or adverse reproductive outcomes, related to their deployment exposure. The study used a combined questionnaire and comprehensive health assessment and compared the findings to the health of Service personnel not having deployed to the Gulf War (of 1991). These veterans were found to report all general health symptoms and some medical conditions more commonly than their colleagues who were not deployed (Kelsall et al. 2004). In particular, these veterans had increased reporting of neurological symptoms, though no physical signs of neurological effects were found (Kelsall et al. 2005). They developed more psychological disorders, were more likely to have persistent psychological symptoms and the risk of these was increased with more adverse military experiences reported on the deployment (Ikin et al. 2004). However, no Gulf War Syndrome was found (Forbes et al. 2004). The psychological health and aspects of physical health of the Gulf War veterans were concluded to differ significantly from those Service persons who did not deploy (McKenzie et al. 2004). Recommendations made following the study included addressing the psychological preparedness and management of adverse military experiences, recording accurately occupational, environmental and iatrogenic exposures and military experiences of the deployment and establishing a system to allow comparison of pre-deployment health status (Sim et al. 2003).

Vaccinations

Both the Australian and British studies of 1991 Gulf War veterans found an increase in reporting of symptoms associated with multiple vaccinations for deployment (Hotopf et al. 2000; Kelsall et al. 2004). Vaccines delivered in association with deployment have been the target of etiological claims related to various post-conflict syndromes; however, adverse event causality from vaccinations assessed in populations does not fully resolve the difficulties in applying cause and effect models to adverse events experienced by individuals. Colonel John Grabenstein illustrated this dichotomy at the Think Tank, by drawing on data from the programs of vaccination of United States military personnel against smallpox and anthrax. To some extent, concerns regarding vaccination as a potential cause of individual harm are not new; however, the paradigm of this association has changed with the change in the military culture. Military personnel are well educated and educated to question, particularly their health for which they have high expectations and a plethora of information to inform their opinions. Serious adverse events from vaccines such as the Vaccinia vaccination program undertaken by the United States Military are not common (Arness et al. 2004). They are not amenable to conventional research methods to produce evidence based outcomes during the development of the vaccine. Instead uncommon and rare adverse events require large surveillance systems which may be effective in determining the prevalence and expanding the understanding of vaccination causality (Grabenstein and Winkenwerder 2003).

Future directions for the ADF

In 1999, the Minister for Defence Science and Personnel announced that health reviews would be conducted for all future overseas deployments of the ADF. Arising from this commitment, a Longitudinal Health Review of deployed ADF Service personnel has entered the planning stages. The aims of the Review are to establish a protocol and process for the long-term surveillance of the health and wellbeing of ADF personnel deployed to overseas operational environments; to test the protocol and processes by conducting a review of personnel deployed during Operations *Warden* and *Spitfire* (East Timor); and to conduct a pilot study on this group to further refine the protocol for the conduct of future studies. The Review defines a framework for the collection of required data for the long-term surveillance of veterans' health which will consist of collation of routinely collected data from periodic medical examinations, a self-administered mailed or directly supplied questionnaire and a review of national morbidity registers; along with a hazard assessment tool for improving the documentation of deployment environmental and occupational exposures. Salient suggestions to ensure the success of this endeavour were to include relevant stakeholders such as veteran representative groups and the veterans themselves. Also recommended was the employment of a scientific advisory group both to monitor and quality assure the research process. Research governance was discussed at length considering the corporate relationship of the Departments of Defence and Veterans' Affairs in the health and wellbeing of veterans.

Toward the development of a definitive hazard assessment tool, the Think Tank acknowledged the risks of cataloguing negative health outcomes of military deployment. Notwithstanding, the members discussed a range of potential deployment-related exposures considered relevant in the ADF. These include the following:

- a) Radiation exposure;
- b) Asbestos exposure;
- c) Diesel exposure;
- d) Laser exposure;
- e) Infectious diseases;
- f) Chemoprophylaxis and vaccination;
- g) Psychological factors;
- h) Heat stress;
- i) Dust exposures; and the
- j) Threat of Chemical, Biological and Radiation agents.

Recommendations of the Think Tank

The Think Tank made the following recommendations:

1. A series of rolling population cohorts should be established to collect prospective health data on ADF personnel, from recruitment, through service-life and after discharge. Governance and resourcing should be with the Defence Health Service.

2. A process of health surveillance must be established for each operational deployment by defining, maintaining and regularly reviewing a linked data set for all personnel deploying on that operation. While the Defence Health Service should have governance for surveillance, funding should be included in operational budgets. Service-related health issues identified by surveillance should then be systematically addressed by conducting a specific health study conducted under similar governance by expert providers. A minimum data set collected from deploying personnel should include:
 - a. Who deployed, including the nominal roll of force assignment and other personnel spending time in the area of operations;
 - b. Where they deployed, anticipated to be fulfilled by unit and sub-unit movement records;
 - c. Why they deployed, documenting roles and other activities;
 - d. How long they deployed for, in each location; and
 - e. Demographic information on personnel deployed.
3. A systematic hazard profile should be established for each operational deployment undertaken by ADF personnel. Such a health profile should draw together information on health threats gained through prospective analysis of health intelligence, field hazard analysis, reports from health issue intervention teams, reports from post-deployment review processes and the outcomes of any operational research conducted. Threats which should be identified include occupational, environmental, operational (including iatrogenic) and psycho-social. The preparation of the hazard profile should be the responsibility of the operational planning staff, with technical governance by the Defence Health Service.

Conclusions

This Think Tank considered evidence collected and available on post-deployment health outcomes to inform development of policy and research on the health and wellbeing of Australian veterans who have served in overseas warlike and non-warlike, peacekeeping and peace monitoring military operations. Both positive and negative health outcomes for veterans exist. The occasionally ill-defined nature of the health and wellbeing consequences of deployments is important in basing future policy and research. Broad categories of deployment exposures considered relevant have been identified. The Think Tank provided advice on the design of prospective research and health care systems to identify and manage health and wellbeing consequences of deployment.

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REFERENCES

- Anon, The Centers for Disease Control Vietnam Experience Study. 'Postservice mortality among Vietnam veterans', *J Amer Med Assoc*, 1987, 257,790–795.
- Anon, The Centers for Disease Control Vietnam Experience Study. 'Health status of Vietnam veterans: I. Psychological characteristics'. *J Amer Med Assoc*, 1988a., 259, 2701–2707.
- Anon, The Centers for Disease Control Vietnam Experience Study. 'Health status of Vietnam veterans: III. Reproductive outcomes and child health'. *J Amer Med Assoc*, 1988a, 259, 2715–2719.
- Anon, Final Report of the Expert panel to review SAS Veteran's Health Concerns, Australian Department of Veterans' Affairs, 2003.
- Arness, M.K., Eckart R.E., Love S.S., Atwood J.E., Wells T.S., Engler R.J., Collins L.C., Ludwig S.L., Riddle J.R., Grabenstein J.D., Tornberg D.N., 'Myopericarditis following smallpox vaccination', *Am J Epidemiol*, 2004, 160, 642–651.
- Binns J.H., Cherry N., Golomb B.A., Graves J.C., Haley R.W., Knox M.L., Meggs W.J., Pellier P.J., Robinson S.L., Smithson S., Steele L., *Scientific progress in understanding Gulf War Veterans' illnesses: report and recommendations*. Research Advisory Committee on Gulf War Veterans' Illnesses, US Department of Veterans Affairs, Washington, 2004.
- Chalder T., Hotopf M., Unwin C., Hull L., Ismail K., David A., Wessely S., 'Prevalence of Gulf war veterans who believe they have Gulf war syndrome: questionnaire study'. *Brit Med J*, 2001, 323, 473–476.
- Chesbrough K.B., Amoroso A., Boyko E.J., Gackstetter G.D., Riddle J.R., Ryan M.A.K., Hooper T.I., Gray G.C., for the Millennium Cohort Study Group, 'Is military service harmful to your health?' The Millennium Cohort Study: a 21-year prospective cohort study of 140,000 military personnel, *Mil Med*, 2002, 167, 483–488.
- Dandeker C., Wessely S., Iversen A., Ross J., *Improving the delivery of cross departmental support and services for veterans*, Department of War Studies and the Institute of Psychiatry, Kings College London, 2003.
- Deahl M., 'Smoke, mirrors and Gulf War illness', *Lancet*, 2005, 365, 635–638.
- Doebbeling B.N., Clarke W.R., Watson D., Torner J.C., Woolson R.F., Voelker M.D., et al, 'Is there a Gulf war syndrome? Evidence from a large population-based survey of veterans and nondeployed controls'. *Am J Med*, 2000, 108, 695–704.
- Everitt B., Ismail K., David A.S., Wessely S., 'Searching for a Gulf War syndrome using cluster analysis'. *Psychol Med*, 2002, 32,1371–1378.
- Forbes A.B., McKenzie D.P., Mackinnon A.J., Kelsall H.L., McFarlane A.C., Ikin J.F., Glass D.C., Sim M.R., 'The health of Australian veterans of the 1991 Gulf War: factor analysis of self-reported symptoms'. *Occup Environ Med*, 2004, 61, 1014–1020.
- Fulco C., Liverman C., Sox H.C., *Gulf War and Health, Volume 1: depleted uranium, sarin, pyridostigmine bromide, vaccines*, Institute of Medicine, Washington DC, 2000.
- Grabenstein J.D., Winkenwerder W., 'US military smallpox vaccination program experience'. *J Amer Med Assoc*, 2003, 289,3278–3282.
- Hotopf M., David A., Hull L., Ismail K., Unwin C., Wessely S., 'Role of vaccinations as risk factors for ill health in veterans of the Gulf war: cross sectional study'. *Brit Med J*, 2000, 320, 1363–1367.
- Hyams K.C., Wignall E.S., Roswell R., 'War Syndromes and their evaluation: from the US Civil War to the Persian Gulf War', *Ann Intern Med*, 1996, 125, 398–405.
- Ikin J.F., Sim M.R., Creamer M.C., Forbes A.B., McKenzie D.P., Kelsall H.L., Glass D.C., McFarlane A.C.,

- Abramson M.J., Ittak P., Dwyer T., Blizzard L., Delaney K.R., Horsley K.W.A., Harrex W.K., Schwarz H., 'War-related psychological stressors and risk of psychological disorders in Australian veterans of the 1991 Gulf War', *Brit J Psych*, 2004, 185, 116–126.
- Ismail K., Blatchley, N., Hotopf M., Hull L., Palmer I., Unwin C., David A., Wessely S., 'Occupational risk factors for ill health in Gulf veterans of the United Kingdom'. *J Epidemiol Community Health*, 2000, 54, 834–838.
- Ismail K., Everit B.S., Blatchley N., Hull L., Unwin C., David A., et al, 'Is there a Gulf war syndrome?' *Lancet*, 1999, 353, 179–189.
- Joellenbeck L.M., Hernandez L.M., 'The Institute of Medicine's Independent Scientific Assessment of Gulf War Health Issues', *Mil Med*, 2002, 167, 186–190.
- Jones E., Hodgins-Vermaas R., McCartney H., Everitt B., Beech C., Poynter D., Palmer I., Hyams K.C., Wessely S., 'Post-combat syndromes from the Boer war to the Gulf war: a cluster analysis of their nature and attribution', *Brit Med J*, 2002, 324, 321–324.
- Kelsall H., Macdonell R., Sim M., Forbes A., McKenzie D., Glass D., Ikin J., Ittak P., 'Neurological status of Australian veterans of the 1991 Gulf War and the effect of medical and chemical exposures', *Int J Epidemiol*, 2005, 34, 810–819.
- Kelsall H.L., Sim M.R., Forbes A.B., Glass D.C., McKenzie D.P., Ikin J.F., Abramson M.J., Blizzard L., Ittak P., 'Symptoms and medical conditions in Australian veterans of the 1991 Gulf War: relation to immunisation and other Gulf War exposures', *Occup Environ Med*, 2004, 61, 1006–1013.
- Lloyd E.J.B., Jones N., Davies M., *Independent public inquiry on Gulf War illnesses*, House of Lords Library, London, 2004.
- McKenzie D.P., Ikin J.F., McFarlane A.C., Creamer M., Forbes A.B., Kelsall H.L., Glass D.C., Ittak P., Sim M.R., 'Psychological health of Australian veterans of the 1991 Gulf War: an assessment using the SF-12, GHQ-12 and PCL-S', *Psych Med*, 2004, 34, 1–12.
- O'Toole B.I., Marshall R.P., Grayson D.A., Schureck R.J., Dobson M., Ffrench M., Pulvertaft B., Meldrum L., Bolton J., Vennard J., 'The Australian Vietnam Veterans Health Study: II. Self-reported health of veterans compared with the Australian population', *Int J Epidemiol*, 1996a, 25, 319–330.
- O'Toole B.I., Marshall R.P., Grayson D.A., Schureck R.J., Dobson M., Ffrench M., Pulvertaft B., Meldrum L., Bolton J., Vennard J., 'The Australian Vietnam Veterans Health Study: III. Psychological health of Australian Vietnam veterans and its relationship to combat', *Int J Epidemiol*, 1996b, 25, 331–340.
- Robb N., 'New clinics will help soldiers deal with the after effects of overseas service', *Canadian Med Assoc J*, 1998, 158:168.
- Sim M., Abramson M., Forbes A., Glass D., Ikin J., Ittak P., Kelsall H., Leder K., McKenzie D., McNeil J., *Australian Gulf War Veterans' Health Study, Volume 2*, Monash University, Melbourne, 2003.
- Smith T.C., Smith B., Corbeil T.E., Riddle J.R., Ryan M.A.K., for the Millennium Cohort Study Team, 'Self-reported mental health among US military personnel, prior and subsequent to the terrorist attacks of September 11, 2001'. *J Occup Environ Med*, 2004, 26, 775–782.
- Unwin C., Blatchley N., Coker W., Ferry S., Hotopf M., Hull L., et al., 'Health of UK servicemen who served in the Persian Gulf War'. *Lancet*, 1999, 353, 169–178.

From the Service Study Centres



In order to keep readers abreast of a wider set of discussions on defence and security related issues we are including reprints of articles from the three Australian Warfare Studies Centres.

The Naval Contribution to Joint Operations

Reprinted from the Sea Power Centre's newsletter, *Semaphore*, Issue 7, May 2005

There are three kinds of lies: lies, damned lies and statistics—Benjamin Disraeli

The Australian Defence Force (ADF) strives to be a seamless joint force, one in which the integration of individual Service capabilities is recognised as a key warfare concept.¹ Within this context it has seldom been more important to ensure that those making or influencing Australian defence policy understand the contribution these Service capabilities bring to the joint ADF effort. Unfortunately, some lobbyists all too often view events through a single-service lens. The distortion inherent in such perspectives usually results in arguments that are misleading, if not fundamentally flawed. To take but one example, a review of the 2000 Defence White Paper assured readers that '...20 of the 22 operations that the ADF has taken part in over the last decade have

ADF Involvement in multinational peace operations	
Operation	Naval Contribution
1. UNTSO-Lebanon/Syria,1956	None known
2. MFO - Sinai, 1993	None known
3. UNIIMOG - Iran/Iraq, 1988-90	None known
4. UNTAG - Namibia, 1989-90	None known
5. MIF - Persian Gulf, 1990-2000	13 x MFU & personnel
6. DESERT STORM/POLLARD – Kuwait,1991,1999	4 x MFU & personnel
7. MINURSO - W. Sahara, 1991-94	None known
8. UNAMC/UNTAC - Cambodia, 1991-93	Personnel
9. UNOSOM (I&II) / UNITAF Somalia, 1992-94	2 x MFU & personnel
10. UNAMIR - Rwanda, 1994-95	Personnel
11. SPPKF - Bougainville, 1994	3 x MFU & personnel
12. TMG/PMG - Bougainville, 1997	Various units & personnel
13. INTERFET/ UNTAET -East Timor, 1999	Various units & personnel
14. IPMT - Solomons, 2000	Various units & personnel
Humanitarian relief and evacuation of civilians	
15. UNMCTT - Afghanistan/Pakistan, 1983-93	None known
16. CMAC - Cambodia, 1992-99	None known
17. MCO – Mozambique, 1992-2002	None known
18. Drought/Tsunami relief - PNG, 1997-98	3 x LCH & personnel
19. Drought relief - Irian Jaya, 1998	Various units & personnel
20. Evacuation of civilians – Cambodia, 1997	1 x MFU
21. Evacuation of civilians - Solomons, 2000	1 X MFU
22. Periodic disaster relief and other assistance in the South Pacific	Various units & personnel

Table 1: Selected ADF Operations 1990–2000

overwhelmingly involved land forces'.² The author's contention, based on the experience of East Timor, Cambodia, Bougainville, Somalia and Vietnam, was that land forces — including certain undefined air and naval elements—represented almost the entire requirement for such operations.

The source for the 20/22 statistic was seemingly a map and table in the 2000 White Paper labelled 'ADF Involvement in Overseas Humanitarian Relief, Evacuations, Peacekeeping and Peace-Enforcement Operations 1990–present', which listed the 22 operations reproduced in Table 1.³ The map made no claim to be comprehensive, and included no reference to relative levels of service participation, but it has nonetheless been regarded as authoritative. Certainly, the '20/22' interpretation has become widely accepted, and has since appeared regularly in officially sponsored publications.⁴ The usual aim is to illustrate a perceived paradox between peacetime strategic theory and actual operational practice. Land forces, it is argued, have traditionally 'predominated' in Australia's offshore operations, yet a persistently larger proportion of the ADF's equipment vote and strategic intellectual capital has gone to its naval and air capabilities. The clear, and sometimes stated, implication is that these high technology assets have fallen far short of the land force contribution to making 'Australian policy both credible and effective'.⁵

The resources allocated under Australia's defence policy are beyond the scope of this newsletter, but it behoves those offering advice and analysis to use the best possible data. To anyone familiar with the tempo and scope of joint maritime operations over the last 15 years, the 20/22 statistic and similarly themed statements of relative usefulness make little sense. Not because the ADF's land forces have been under-engaged, but rather because Australia's maritime forces have proven at least equally effective as diplomatic and military tools and, at the unit level, have generally offered more flexible options during crisis planning and decision making.

There is no official list of all ADF operations, offshore or otherwise, but by comparing Table 1 with the SPC-A's database⁶ several features become clear.

First is the crucial nature of each naval component deployed, given that only eight of the operations listed in Table 1 did not include a naval contribution, either in the form of specialist staff or ships. This contribution was often of significant size and in the case of seagoing units invariably critical to operational success. In East Timor, for example, the first ADF assets in theatre in strength were from the Royal Australian Navy (RAN). At its peak the INTERFET naval component included 20 warships and 5000 personnel, briefly outnumbering even the land forces.⁷ As well as ensuring a secure environment for the insertion phase, the naval component provided continuing protection, surveillance and logistic sustainment for follow-on forces. In sum, more than 90 per cent of the cargo entering the theatre moved by sea, while all personnel and equipment movement within the theatre ultimately depended either on amphibious vessels or the ground and aviation fuel provided by naval tankers. To suggest, as one narrative history has done, that other Service support to the land forces was 'fairly minimal', has little in common with operational reality.⁸

Similar assessments may be made about the naval and air contributions to peace missions in Somalia, Bougainville and the Solomons. RAAF aircraft and RAN ships first brought the joint force to the theatre then, in addition to patrol and response tasks, deployed ships offered a tailored combination of local mobility, afloat command & control, and communications, intelligence,

aviation, medical, catering and even recreational support. By projecting power into remote and otherwise inaccessible locations naval units ensured presence over a far larger area than could otherwise have been achieved. The ADF's disaster relief operations, as the most recent events in Indonesia have highlighted, likewise included a large maritime component; simply because mobility in mass can be achieved no other way, and only ships possess the unique capabilities needed when infrastructure either does not exist or has been rendered inoperable. Just as vital, by minimising or removing the need for a footprint ashore naval capabilities place minimal stress on scarce local resources. In view of all these factors, the relevance of emotionally loaded terms such as 'overwhelmingly' and 'predominated' to the joint operational environment is questionable.

The second noteworthy feature is that the listed operations vary markedly in scope, complexity and significance. The land force contributions to the various UN missions in the Middle East involved contingents ranging from 8–15 military observers in UNIIMOG, to 13 in Lebanon, and a 45-strong force communications unit in the Western Sahara. The teams deployed for mine clearance were still smaller, with just two military members serving on rotation in Mozambique and 6–9 in Pakistan/Afghanistan.⁹ These activities were undoubtedly important, but they were also operationally constrained and, as peacekeeping missions, cannot be considered force structure determinants. It further stretches credibility to equate each with the naval contribution made to the Maritime Interception Force in the Persian Gulf. To 2000, this commitment had involved 13 major fleet unit (MFU) deployments and several thousand naval personnel, and has since seen another 21 MFU deployments and two major conflicts. Important in assessing the inherent versatility of naval forces is an understanding that the tasks undertaken in the Gulf regularly changed and ranged right across the spectrum of operations between the diplomatic, constabulary and military dimensions.¹⁰ A third feature is that Table 1 reflects only a selection of the ADF's recent offshore operations. Among those missing are: UNSCOM in Iraq (1991–2000); the Cambodian Maritime Assistance Project (1993–97); the Stabilisation Force in Bosnia-Herzegovina (1997–2004); and at least one disaster relief mission in South East Asia (1991). The first three included specialist naval personnel, while the last involved the crews of two MFUs providing aid after a volcanic eruption in the Philippines. Also absent are at least four operations planned to evacuate Australian nationals during regional civil disturbances, including Bougainville (1990) and Indonesia (1998). Although not always executed, the maritime option was available if needed, and Australia placed up to four major surface combatants and supporting units on high alert for each contingency. Australia has also undertaken a range of long-term maritime surveillance operations in the region, notably GATEWAY (1981–) and SOLANIA (1988–), that are widely recognised as contributing to the security of our immediate neighbourhood. Although these operations are largely dependent on maritime patrol aircraft, they have made regular use of sophisticated naval capabilities. While their absence from the original listing is understandable, this reinforces the White Paper table's limitations as an authoritative reference.

Finally, in assessing the wider dimensions of Australia's security the role of warships in shaping our strategic environment should not be underestimated. Ignoring the argument that every naval deployment is an 'offshore operation', there has been a long-standing Government policy to use the RAN to maintain and enhance regional engagement. Thus major surface combatants, amphibious and logistic units, submarines, patrol boats and hydrographic vessels have kept up a series of rolling deployments in East Asia and the South Pacific. In addition to preserving an

almost continuous high-profile presence and providing a practical demonstration of Australian interest in the region, there have been many secondary benefits. The late Admiral Michael Hudson, when Chief of Naval Staff, put it well when he wrote:

The skills our sailors take with them are highly regarded...and the Navy has been able to provide a great deal of assistance to local communities throughout the region. This aid scheme, often provided by the voluntary efforts of people in the Fleet, is a source of pride and fosters goodwill which could never be achieved through any amount of diplomacy or aid dollars.¹¹

Implementation of Australia's joint strategic vision deserves better than flawed statistics and divisive debate. An assessment of our responses to recent crises might accurately remark: 'Over the past 15 years the ADF has used its diverse and highly versatile naval assets as either the lead units or essential enablers in every major and most smaller offshore operations.' The ADF's professional credibility demands that this contribution is both understood and publicly acknowledged.

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1. *The Australian Approach to Warfare*, ADPP-D.1, Defence Publishing Service, Canberra, 2003, p. 6-1.
 2. J. Hartley, 'A Review of the White Paper', *Asia-Pacific Defence Reporter*, February 2001, p. 29.
 3. *Defence 2000, Our Future Defence Force*, Commonwealth of Australia, 2000, p. 11.
 4. See M. Evans, *From Deakin to Dobb: The Army and the making of Australian Strategy in the 20th Century*, Land Warfare Studies Centre (LWSC) Working Paper No. 113, Canberra, 2001, p. 41; and *The Tyranny of Dissonance: Australia's Strategic Culture and Way of War 1901-2005*, LWSC Study Paper No. 306, Canberra, 2005, p. 75: 'Between 1989 and 1999, of twenty-two offshore operations that the ADF undertook, the Army—the Cinderella service since the end of the Vietnam War—predominated in twenty of them'.
 5. J. Grey, *The Australian Army*, Oxford University Press, Melbourne, 2001, pp. 257-8.
 6. *Database of Royal Australian Navy Operations 1990-2005*, SPC-A Working Paper, forthcoming.
 7. P. Kinghorne, 'OPERATION STABILISE -Naval Participation in East Timor', *Naval Supply Newsletter*, June 2000, pp. 25-6.
 8. Grey, *The Australian Army*, p. 256.
 9. N.F. James, 'A Brief History of Australian Peacekeeping', *Australian Defence Force Journal*, No. 104, January/February 1994, pp. 3-18.
 10. Sea Power Centre - Australia, 'The RAN in the Gulf – two years on', *Semaphore* issue 3, March 2005.
 11. Royal Australian Navy, *Chief of Naval Staff Newsletter* June 1987, Department of Defence (Navy Office), Canberra, 1987, p. 21.

From the Land Warfare Studies Centre

During the mid- to late-1990s, the Australian Army reinvigorated its intellectual efforts toward clearly defining itself—and the environments in which it would operate—for the future. This included establishing the Army's applied research 'think tank'—the Land Warfare Studies Centre (LWSC).

The first two LWSC publications, Working Papers 101 and 102, have their abstracts reprinted below. These documents are relevant nearly a decade after their publication due to the prescience with which they explore concepts such as Complex Warfighting, an Australian joint maritime strategy, and the need for coalition and whole-of-nation approaches to war.

Michael Evans (Working Paper 101) explores the traditional dissonance between declared strategy and operational reality by looking into the tensions between 'continental', 'sea power' and 'maritime' approaches to Australian strategy. He argues that a proper 'maritime' strategy is naturally joint, based on power projection and sustainment, and represents the truth of Australian offshore military operations from Federation to the present day.

Complementing this, Martin Dunn (Working Paper 102), looks into the role of 'strike' and its use in the contemporary battlespace. 'Strike', beyond its narrow associations with air power theory, has utility at all levels of war, with 'Strategic Strike' being the core of rapid dominance. Australia has a long history of 'strike': the operations of Z Special Unit in Singapore during World War Two and the SAS raiding and disruption efforts in Iraq's Western Desert in March 2003 being but two examples. The ADF is considering strike options that will increase its capability beyond Special Forces and F111s including Uninhabited Aerial Vehicles (UAVs), Joint Strike Fighter and cruise missile technology.

Importantly, both these papers contain theoretical and historical examinations. By grounding their arguments in the reality of Australian military history, the topics remain relevant to today's debates.

These and other hardcopy publications are available from the LWSC, or can be downloaded from the LWSC website: <www.defence.gov.au/army/lwsc>.

The Role of the Australian Army in a Maritime Concept of Strategy

Working Paper 101, July 1998.

Michael Evans

This paper examines the role of the Australian Army in a maritime concept of strategy. It does so against the background of new trends in post-Cold War international security and, in the light of the publication in 1997 of *Australia's Strategic Policy* (ASP 97) and *Restructuring the Australian Army* (RTA). It argues that ASP 97 and the 1997 RTA plan are not optimising the

Army's capabilities, force structure and doctrine for tasks which a close reading of the strategic guidance contained in ASP 97 might require. There are two reasons for this development. First, ASP 97 and the RTA are based on the conceptual opposites of navalism and continentalism; second, both documents tend to emphasise deterrence rather than warfighting. These factors have created a strategy–force mismatch which prevents consideration of a more positive role for land forces in maritime operations. A navalist interpretation of maritime strategy and a restrictive land force structure may threaten the Australian Defence Force's ability to meet the full spectrum of warfighting needs, escalation control and conflict termination in modern military conflict.

The paper suggests that the Army should seek a more proactive role by reconsidering both its concept of operations and its force structure imperatives in the context of a broader maritime concept of strategy. It argues that the Army's restructuring scheme, as outlined in the 1997 RTA plan, runs contrary to both the rise of littoral–expeditionary operations in upholding international security and the versatile force structure planning now prevalent in leading Western armies. The paper recommends that the Army should focus less on achieving self-reliance on Australian soil and concentrate more on creating freedom of action to meet a wider range of national interests. Less emphasis should be placed on creating a Total Force Army and more effort spent on devising an agile, concept-driven and capability-based regular force. A twenty-first century Army should be able to execute a strategy involving operational manoeuvre, surprise and flexibility. The paper argues that too much concentration on building continental task forces for single-scenario, low-level contingencies will be counterproductive. Instead, most of the Army's effort should be spent on organising a force structure capable of sustaining versatile land formations across a range of different theatres.

The paper concludes by recommending that Army planners pursue a positive role for land forces in a broader maritime concept of strategy. This role requires an emphasis on land force power projection in regional littoral warfare, the promotion of joint amphibious doctrine, and support for the development of credible amphibious forces. These measures would reinforce the strategic logic of joint operations, improve the development of unified warfighting objectives and contribute to the refinement of a fully integrated Australian maritime strategy.

Redefining Strategic Strike: The Strike Role and the Australian Army into the 21st Century

Working Paper 102, April 1999.

Martin Dunn

This paper considers Strike as a strategic and operational-level technique from two perspectives: historical and theoretical. The historical perspective shows a long record of the land and maritime forms of Strike. The advent of the aeroplane opened new options for strategic strike, but changes in technology and the nature of the state also provided new opportunities for surface forces. Strike by land and maritime forces grew at the same time as air forces were proving themselves.

The theoretical perspective strips away many preconceived notions about Strike. The purpose for which Strike is being used drives the method pursued; and several different objectives are possible. The paper examines the various strike force options, and their different characteristics. The optimum mix depends on the circumstances—particularly the objectives pursued and the nature of the enemy system. Special forces and conventional land forces, with their innate flexibility, are often attractive Strike options. Further, by concentrating on objectives, it is possible to think laterally about the options. The paper argues that unconventional options such as guerrilla warfare, covert action, psychological operations and information warfare should not be ignored simply because they do not coincide with a view of Strike modelled on air attack.

Depending on the target set and objectives, strike forces usually need to be large enough to achieve a critical mass to be effective—and for deterrence to be seen to be effective. The paper argues that they also need to have the preparedness to give a timely and sustained response as circumstances unfold.

It is not possible to draw definitive conclusions about the ideal force structure for Australian Strike because of the ambiguous nature of Australia's strategic guidance—particularly the lack of information on conflict objectives, conflict termination and identification of the threat. This problem is further compounded by the size and diversity of the region, and the capacity for its economic, political and social structures to change rapidly. While some conclusions could be drawn for other roles relying simply on observations from Australia's geography and the limits of regional capability, the Strike role does not permit this. Resources would not allow Strike to do everything, and without a basis for identifying preferred target sets, it is not possible to derive an optimum force mix.

Air Force Experiment Headway – Some Insights

Reprinted from the Air Power Development Centre's bulletin, *Pathfinder*, Issue 28, July 2005

The first formal Air Force experiment, Headway 03/1, took place over the period May–July 2003. The experiment was designed as a preliminary investigation into the characteristics required of a future Australian Defence Force strike capability, with particular emphasis on assessing whether the planned Air Force of 2020 is likely to possess the necessary attributes to mount an effective strike campaign.

The experiment comprised a series of workshops aimed at identifying the more important characteristics for an ADF strike capability. These were then tested in a seminar war game to determine the characteristics with the greatest utility.

The nature and objective of strike operations are changing. Even though a 'deep strike' capability to attack targets of strategic importance will be needed well into the future, the most likely form of ADF strike campaign will be a 'shaping' operation to set the pre-conditions in the battlespace for follow-on action by surface forces. Future strike operations will not only have to contend with high-end active defence systems but also counter the greater emphasis placed on passive defences. In the future, adversary forces will use techniques such as dispersion, mobility and signature management to operate close to or below our battlespace awareness threshold, making it more difficult for air and space assets in particular to detect, identify, track and target the adversary. Furthermore, the adoption of an effects-based approach to operations will require us to expand our understanding of the range of possible strike targets and the spectrum of effects we may wish to create.

These developments have a direct impact on the characteristics required of an effective strike capability.

In the future, good **reach** will continue to be an essential characteristic of an ADF strike capability. Our geography demands it. However, there is a change in the conduct of strike operations. Until now the strike platform was required to penetrate to the target, deliver its weapons and vacate the battlespace as quickly as possible. In the future, it will more commonly be necessary for at least some elements of the strike system to **persist** in the battlespace for extended periods since the adversary will provide only fleeting opportunities for detection and engagement. Both battlespace awareness and engagement assets will have to be on-call in the target area to ensure optimum **response** to these opportunities. This requirement also implies that all platforms operating in this hostile environment must have adequate **survivability**.

The range of potential strike targets, coupled with the spectrum of effects that may need to be generated, will require battlespace awareness and engagement systems to be highly **flexible**, and will place a high demand on the **capacity** of the force to generate and sustain the required rate of effort.

Finally, generating the desired effects against an adversary intent on blending into complex physical and human environments will increase the need for **precision** in terms of target discrimination and avoidance of collateral damage.

Despite their changing nature, strike operations still lend themselves well to the application of air power. Air Force is therefore likely to remain the main provider of both the battlespace awareness and engagement elements of the strike capability. Naval forces could provide a useful adjunct to Air Force's engagement capabilities by providing increased capacity and creating additional effects. The ability of adversaries to hide from air and space based sensors also indicates the increasing importance of human intelligence to provide targeting information. This issue is further compounded by the vulnerability of many battlespace awareness assets to ground fire.

The experiment found that the F-35 Joint Strike Fighter should be able to provide the ADF with a highly capable strike platform, which will possess most of the required characteristics. However, its flexibility and precision may be impaired by limitations in available weapon options. The effects generated through the application of 'soft kill' options are difficult to assess and led to this option not being considered to be sufficiently effective. The availability of alternate platforms for strike operations, such as the multi-mission maritime aircraft, was largely limited due to concurrent tasking requirements.

Long-range stand-off weapons have excellent utility against large fixed targets but lack the flexibility for use against a wide range of targets and their time-of flight limits their effectiveness against fleeting targets of opportunity presented by a highly mobile, dispersed adversary. Their prime purpose is as a 'first strike' weapon that will make the battlespace more accessible to other platforms and weapons.

General purpose, direct attack munitions such as the small diameter bomb are likely to find the greatest utility in future strike campaigns, particularly in urban environments. Indeed, an even smaller weapon that would enable greater numbers to be carried by the JSF may have even further utility.

The air force strike capability of the future will have greater reach and persistence, particularly in the realm of battlespace awareness, with the advent of long-endurance unmanned aerial vehicles. However, the ability of the engagement elements to meet the persistence and reach criteria will often be contingent on the Air Force's ability to mount high intensity combat operations from an off-shore forward operating base—even with support from air-to-air refuelling. This type of operation will have implications for combat support, logistics and force protection that need careful examination.

Lack of adequate capacity was seen as the greatest weakness of the future ADF strike force. The adversary could employ strategies that attempt to extend the duration of the operation, to test the ADF's sustainability. Of course, this implies that the adversary would have the capacity to sustain operations for the period required.

In conclusion, although some weaknesses were highlighted throughout the experiment, it was found that with sufficient effort in realignment of capacities and strategies, Air Force of 2020 will be able to deliver the necessary strike capability.

Professional Research Notes

To enhance the *Journal's* intention to inform and promote discussion on important issues of national and international defence and security matters, we devote this section to publicising current research on defence and related topics being undertaken around Australia. Each individual research note has four parts, as follows:

1. *ADFJ* Index Number comprising the relevant *ADFJ* Issue Number and the number assigned to each research note;
2. The title or brief description of the research;
3. Brief research notes; and
4. Contact details.

By the inclusion of researchers' contact details, we hope to provide a forum for dialogue and debate. We encourage all those who wish to publicise their research to forward details to the Editor at <publications@defence.adc.edu.au>.

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The factors influencing the employment of the Australian Defence Organisation (ADO) in homeland security roles since 11 September, 2001 (9/11).

Colonel Andrew Smith is undertaking a PhD on the above topic, with the project being conducted through the School of Humanities and Social Sciences within the University of New South Wales at ADFA. The thesis supervisors are Associate Professors Anthony Bergin and Hugh Smith.

For the purposes of this project, 'homeland security' refers to the protection of Australia's domestic environment from threats of violence: as a consequence, there is an emphasis on threats from terrorism. The research methodology involves defining the pre-9/11 history of ADO involvement in homeland security, focusing on the period 1978–2001 (the 'status quo ante') and the reasons for it. The ADO's involvement post-9/11 is then defined and, again, the reasons for it determined. The ADO is considered in its broadest sense, to include organisations such as the Defence Science and Technology Organisation. The work includes a detailed case study of ADO support to the security of the Sydney 2000 Games.

Contributions to and inquiries about the project should be directed to Colonel Smith via e-mail: <andrew.smith10@defence.gov.au>.

168/2

Australian Maritime Doctrine Review

The Sea Power Centre – Australia (SPC-A) has commenced the first review of Australian Maritime Doctrine (RAN Doctrine 1-2000).

Australian Maritime Doctrine (AMD) is the Royal Australian Navy's (RAN's) principal work of philosophical doctrine about operations in the maritime environment. AMD concentrates on the broader strategic issues that can be paraphrased in the questions: what utility do armed forces have in the maritime environment, and why? At the operational level, RAN

Doctrine 2–2005, *The Navy Contribution to Australian Maritime Operations*, sets out the RAN's application doctrine that examines in greater detail how the RAN organises, prepares for and conducts operations in accordance with its philosophical doctrine.

AMD brought together for the first time, in an Australian context, the key concepts and themes of maritime power, and outlined in strategic terms the contribution made by the RAN to operations as a component of a joint and integrated Australian Defence Force.

The past five years have seen significant changes to the global maritime environment. For example, changes to the nature and scale of potential threats to Australia and its interests have caused similar changes to the type and tempo of RAN operations. While Australia's geographic realities and maritime dependence remain, our terms of trade have altered and we have claimed a large Exclusive Economic Zone and Extended Continental Shelf off Antarctica. In our region, growing concern over shipping and resources security has seen a renewed focus on constabulary operations. More broadly, the threat of maritime terrorism has altered commercial and military operating practices. The long-term significance of all these changes must be assessed and their relevance to the RAN's principal doctrinal publication determined.

Contributions to and inquiries about the review should be directed to the Senior Research Officer at the SPC-A, Lieutenant Andrea Argirides, RANR, via e-mail: <andrea.argirides@defence.gov.au>.

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Australian National Internships Program

The Australian National Internships Program (ANIP) was established at the Australian National University in 1993, and currently involves about 90 students per year. The Program is open to Australian and overseas students from a variety of disciplines and universities; some are graduands but the majority are undergraduates. The core of an ANIP internship is a placement for eleven weeks, either with a Member of Parliament, a parliamentary committee, a government department, a peak industry body, or a major community organisation.

The Sea Power Centre – Australia (SPC-A) is currently hosting an ANIP intern, Ms Caroline Morrison. Ms Morrison's research report—provisionally titled *Power, Control and Denial: Australian Maritime Strategy and Australia's Oceans Policy (1997–2005)*—aims to research the issues arising from Recommendation 11 of the Joint Standing Committee on Foreign Affairs, Defence and Trade's 2004 report on Australia's Maritime Strategy. Ms Morrison is particularly investigating and analysing the possible links between maritime defence strategy in Australia and Australia's Ocean Policy, in order to assess the role of the Australian Defence Force in policy enforcement, both institutionally and operationally.

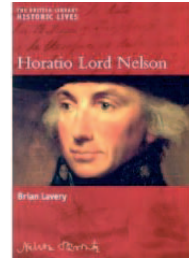
Ms Morrison is currently conducting interviews with subject matter experts to investigate the links between Australian maritime and defence strategies and the Oceans Policy. The institutional supervisor for the intern is the Director of SPC-A, Captain Richard McMillan, RAN, and the academic supervisor is SPC-A's Senior Research Officer, Lieutenant Andrea Argirides, RANR.

Any inquiries about or offers of assistance to this research should be directed to either Captain McMillan via e-mail: <richard.mcmillan@defence.gov.au> or Lieutenant Argirides via e-mail: <andrea.argirides@defence.gov.au>.

Book Reviews

HORATIO LORD NELSON

Brian Lavery
New York University Press, New York, 2003
ISBN 0-8147-5190-3



Reviewed by Tom Lewis

For any student of the world of Nelson and the age of fighting sail there might be two essential books on the shelf: *The Wooden World*, by N.A.M. Rodger, and *Nelson's Navy*, by Brian Lavery. Both are authoritative works of impressive research, and give the technical background to the world of sea battle brought with equal skill to life in the fictional works of Patrick O'Brian and C.S. Forester. There is a renewed interest in the world of Nelson: *Master and Commander* has been responsible for some of that, and the 200th anniversary of the decisive battle of Trafalgar this year brings more attention. Lavery's *Horatio Lord Nelson* will therefore be a welcome read for many.

Of course, there have been biographies of Nelson written before—Lavery himself has penned two minor variations—and it is instructive to pick up the works of Robert Southey and Geoffrey Callender, both written nearly 100 years ago, as a comparison. Today Brian Lavery is writing in a much more direct style, which is well-suited, perhaps, to the majority of readers, although those who love Patrick O'Brian's prose, so reminiscent of Jane Austen, might find it too straightforward. Indeed, Lavery plunges in where many might fear to tread, and there are capable and useful comments on Nelson, given some modern interpretation. For example, he acknowledges that the judges of the general public today might well not approve of the abandonment of Nelson's wife for Lady Hamilton in the same way that many, at least of the mob, did nearly 200 years ago.

The overall structure of the book sees a series of precise vignettes which take us from the early days of peacetime with a practical education for the young naval officer, to the days of combat in the War of the American Revolution. Then it is on to the conflicts with Spain and France, which would dominate—and end—Nelson's life many years later. The essential battles of St Vincent, the Nile and Copenhagen are well documented, so too the essentials of seaboard life, and Nelson's personal battles, including the shocking injuries which these days—losing an arm and an eye—would see him pensioned off from a modern force. The illustrations—almost one on every two page opening—are comprehensive and add well to the text, with a mixture of paintings, graphics and sketches.

Overall, there is nothing new here, but that is not the aim of such a work as this. Rather, for one who has an interest in the great man Nelson and his achievements, and who does not

possess Howarth's *The Nelson Touch*, or the biographies by Southey or Callender, this would be a very good encapsulation of the special blend of strategist, tactician and man-manager that this best of naval officers was.

THE CRUEL LEGACY: The HMAS VOYAGER Tragedy

Tom Frame
Allen & Unwin, 2005
ISBN 1 7411 44213



Reviewed by Commander Warren Milfull, RANR

The value of this book includes its contribution to the Australian Defence Organisation as a 'learning document' which provides further analysis of how the Royal Australian Navy and the Commonwealth Government struggled with the management of the *Voyager* disaster in the late 1960s. The book highlights the importance of ensuring that the composition of a Board of Inquiry and its Terms of Reference are carefully crafted. In addition, it clearly demonstrates the importance of the engagement of good legal counsel for all personnel involved in an inquiry as well as the potential impact of promotions within the legal profession during long inquiries. Finally, the ever present role of individuals' personalities on the way business is carried out is most evident.

Has the ADF improved in its handling of inquiries since then? On the surface it appears the ADF has improved its management of the conduct of similar inquiries. Unfortunately, the need for major boards of inquiries will always stay with the military, and ongoing improvement in the management of them is an ideal which must be pursued. The engagement of a non-Australian Defence Organisation member of the board is a very sensible step in gaining increased confidence from the public. At the same time however, we should also remember to learn from the experiences of others. In this respect I commend the report on the inquiry on the Columbia disaster, the Columbia Accident Investigation Board (CAIB). The follow-up article in the *Atlantic Monthly* (November 2003) where a journalist captures the thoughts of the Head of that BOI about its procedures is also an enlightening read.

The improvement in the conduct of boards of inquiry is one thing, but management of the outcomes or findings of the inquiries has also improved in Australia. The approach adopted following the F-111 Deseal-Reseal Inquiry has been a fundamental driver for change in the RAAF, while the impact of the HMAS *Westralia* and RAAF B707 inquiries on the management of training and standard operating procedures should not be underestimated.

When reading this book I was intrigued by the very obvious change in approach which occurs from about page 190. Prior to that, the book is very much a detached analysis of events, but from then on it becomes more of a personal narrative. I struggled with the basis of this transition for some time, and eventually concluded that perhaps this was an illustration of the evolution of Tom Frame's views since his first *Voyager* book in 1992. That book was based on a thesis being prepared by a young Naval Officer with a great deal of potential for a lot

of things. Since then he has penned a raft of books on a wide variety of topics including a semi-autobiography, naval history, and a history of Mt Stromlo. Furthermore, he has changed vocations and joined the Anglican Ministry where he has flourished. Along this journey, and as mentioned from page 190 onwards, he has been intimately involved in various hearings where *Voyager* collision survivors have sought compensation. Hence this more personal involvement also reflects how an individual's approach can move with time and experience, and sometimes for most unexpected reasons.

THE SOMME

Gary Sheffield
Cassell Military Paperbacks, 2004
ISBN 0 3043 6649 8



THE WESTERN FRONT 1916–1918

Peter Cochrane
ABC Books, 2004
ISBN 0 7333 1280 2



Reviewed by Wing Commander (Retd) John Steinbach

The resurgence of interest in the Great War around its 50th anniversary in the 1960s, has never abated. Today, analyses have moved well beyond criticism of the diplomatic blundering that brought it on, to a more objective study of its conduct. New angles, new foci, reassessments and new themes are giving a later generation of historians—apologists, revisionist, neo-revisionist and otherwise, the opportunity to cut their teeth on what has become one of the most researched and argued event in the history of human misery, and with luck, maybe uncover new ground and offer some original insights.

For its part in this scheme, *The Somme* stakes its claim for attention on the notion that without the Battle of the Somme, the Allies would not have won the First World War; that it was neither futile nor a defeat, but that it provided much needed experience. Perhaps. Apart from that, there is little therein that has not been said before. The battle narratives are taken from the British official histories, which anyone wanting to capture the flavour of trench warfare should read, although the casualty statistics need to be taken with a grain of salt. Whilst *The Somme* is useful as a quick read, the claims about the battle's importance to the final outcome of the war are not particularly persuasive, largely because of a lack of argument and more importantly, detail, of how the British actually learnt from their mismanagement and adapted the lessons to its fighting doctrine to gain the upper hand. What staff processes were at play? Who fought hardest for change and who resisted? Whatever, that the same mistakes would be repeated suggests that not everyone shared in the introspection or zeal for reform. Did the battle cause the Germans to change their strategy, and fatally so? Undoubtedly, but more likely, it was in the knowledge of the apparent British readiness to sacrifice so many men, that the Germans with limited resources realised they could never match the manpower attrition, and thereupon changed tack, to unrestricted submarine warfare hence bringing about American entry into the war. A revisionist thesis setting out to overturn long-held and more orthodox views of the significance of the Somme battles needs more than 168 pages to be convincing.

The last chapter which tries to put the battles into some sort of historical context, and to justify that it was so essential to Allied victory, includes a discussion of British generalship, to wit who could have done the better job as C-in-C. Sheffield is clearly a Haig admirer, but he does concede there were two men who could have been rivals because later in the war they would display the highest standards of professionalism, and be outstanding commanders: John Monash and Arthur Currie (a Canadian). However, the chances of either securing high command were negligible given that both were colonials, neither was a professional soldier, and that in any case, in 1916, both lacked experience and were too junior. That these outsiders rapidly came to a better appreciation of trench warfare says more about the quality of leadership the system was engendering than the failures of the British to develop the study of warfare as a rigorous intellectual pursuit in place of the on-going consolidation of experience of dubious relevance to what the Western Front had wrought.

Orders of Battle of the BEF and the German Army on the Somme are included as annexes and there is quite a good bibliography. As a battle narrative, this book like many others of the genre, suffers from distance between text and corresponding maps. A paperback will not long stand up to pages flicked backward and forward to keep up with a battle's progress. The maps appear to be gray-scale versions of coloured originals, and are not all that easy to read, while the photographs are from the standard Somme stock.

Not so with those in Peter Cochrane's book, a record of the AIF on the Western Front based on photographs in the Australian War Memorial collection. It is also a history of the photographers and their work. There had been no censorship at Gallipoli; in fact, due to the shortage of pressmen and photographers, the soldier-cameraman made the greatest contribution to the photographic legacy of the Gallipoli campaign. On the Western Front, however, that would not initially be the case, at least officially, as the British Government banned the taking of any images, even sketching, but by the time the AIF was arriving, for propaganda purposes, two English photographers were appointed by the British Government to cover the lives of the two million men under arms. Charles Bean, the official Australian war correspondent who had been arguing for an Australian photographer, was told he could borrow the two Englishmen temporarily. Thus the only official photographic record of Australians at Armentières, Pozières and Mouquet Farm are due to them. In November 1916, Bean got another English photographer attached for full-time duties, but when he fell ill to dysentery, two Australians were appointed to replace him, Frank Hurley and Hubert Wilkins. Both were former polar explorers, tough and courageous, and the scope and quality of their photography would be outstanding. Hurley was eventually posted to Palestine but Wilkins stayed, and in the course of his duties, would be awarded a Military Cross and Bar. The Australians were exceptionally well served by them and their successors as the record shows.

Despite the ban, many Australian soldiers had taken their 'Vest Pocket' Kodaks along, which with lightweight roll film, were more accessible and reliable than the cumbersome and fragile glass-plate negatives used by the 'officials'. In the main, Australian officers did not enforce the prohibition on cameras and as a result the largest number of photographs from the First World War are from 'unofficial' sources. As Cochrane explains, there is an ongoing fascination with images of war: be it for the artistic renderings of Hurley who often doctored his images, by making up composites for dramatic effect, Wilkins' photographs taken under fire, posed studio takes or the simple shots of ordinary soldiers in the trenches, on leave or amongst the

French; so much so that nine editions of *The Photographic Record* (the 12th volume of Bean's history) were sold out before 1939.

Cochrane's is a unique anthology of photographs of the Australian experience on the Western Front as well as a tribute to Charles Bean, his official photographers, the soldier-cameramen and the officers who turned a blind eye to the picture taking around them. Anyone with an interest in the Australian forces and their achievements in northern France needs to look into those strained but cheerful faces amongst the rubble, the corpses and the unspeakable squalor to understand why this war did so much to shape the identity of the digger.

KOKODA COMMANDER: THE LIFE OF MAJOR-GENERAL 'TUBBY' ALLEN

Stuart Braga
Oxford University Press, Australia, 2004
ISBN 0 1955 16389



Reviewed by Captain Reuben R.E. Bowd

As the title suggests, this book is about the life and times of one of Australia's most important, yet historically contentious military leaders, Major-General Arthur Samuel Allen, affectionately known as 'Tubby' to his soldiers and fellow officers. Allen's name became inseparably and unenviably associated with one of the most controversial events in Australia's wartime history, when General Blamey relieved him of command of the 7th Division in October 1942, at the height of the Kokoda campaign. The book is obviously the result of painstaking research and it is complemented by solid documentary evidence. It is well illustrated and tells a colourful story about a truly amazing life.

Stuart Braga portrays an Army at war on two fronts, simultaneously fighting both the Japanese and the enemy within its own high command. Amid this turmoil stands 'Tubby' Allen, portrayed at times uncritically, as a largely innocent and misunderstood victim of wartime politics, characterised at the most senior levels by deep seated jealousy, disloyalty, subversion and petty rivalry dividing officers of the permanent and militia forces. Allen's own personality and seemingly unrestrained opinions of other officers, especially superiors with whom he struggled to relate and was often at odds, helped to foster the conditions that brought about his demise. Regardless, he is pictured as a commander of considerable capacity, with sound situational awareness and a keen regard for the welfare of his troops. More broadly, the book provides an insight into Allen's family life, civilian career and military service spanning two world wars.

History has dealt Australia kinder and less turbulent years since those days, and has provided an opportunity to reflect on the past with the benefit of hindsight. What should be drawn from Allen's example is that in war solidarity of command must be complete if victory is to be won. Perhaps his being stood down was justifiable because unity at the top is more important than any one individual, regardless of whether history eventually validates a particular decision or course of action. However, it is acknowledged that in armies, like any hierarchical

institution, personalities and ego sometimes have as much a part to play in decision-making as commonsense ever does. The Australian Army's high command may have dealt Allen a 'raw deal' in 1942, but Braga's book has done a great deal to restore his reputation by providing an insight into a brilliant man and military leader who helped shape our nation and ensure its way of life.

I recently shared a beer in Canberra with a former 'Rat' of Tobruk (who also served in the New Guinea Offensive) and thought it an ideal opportunity to gain a first-hand opinion of 'Tubby' Allen. The high esteem with which this old soldier held his one-time General became immediately apparent and reinforced Braga's judgment.

Kokoda Commander is a highly recommended read that provides an insight into the many challenges faced by senior commanders in war, whilst also demonstrating practical leadership concepts of relevance to all members of the profession of arms. One of the many themes I drew from the book was that the privilege of senior command comes at a price, and at times can be an incredibly lonely, complex, unfair and frustrating experience. Stuart Braga's book constitutes a valuable contribution to Australian military historiography.

WHEN I WAS A SOLDIER: ONE GIRL'S REAL STORY

Valérie Zenatti

Bloomsbury Press, Great Britain, 2005

ISBN 1 5823 4978 9

Reviewed by Captain Reuben R.E. Bowd



Meet Valérie Zenatti, she's 18 years old, just finished her final year of school and has embarked upon the unknown—two years of compulsory military service in the Israeli Army. Set in the late 1980s, this book seeks to recount one girl's experiences in the service of her nation, shared in common with generations of Israeli women. By its nature, the book is unique and demonstrates a female perspective on Service life through the eyes of a young girl who is still very much an outsider (having emigrated from France at the age of 13), a virtual newcomer to the country she is now risking her life to serve.

Female soldiers in Israel are restricted to non-combat roles, yet Zenatti is proud to draw comparisons between herself and her male counterparts. She completes her basic training and is eventually appointed as a signals intelligence operator monitoring enemy aircraft transmissions. However, by virtue of her rank (a corporal), and the secretive nature of intelligence duties, the reader is only given a brief taste of Zenatti's contribution to the bigger picture with very little being revealed about her work. This makes much of Zenatti's National Service seem somewhat uneventful with only a handful of pages devoted to her work once fully qualified as an intelligence operator. Instead, the book focuses on the impact of National Service on a young girl's existence and her subsequent transformation and awakening to the realities and responsibilities of adult life.

Although many Australians undertook National Service between 1951 and 1972, it is a foreign concept to the current generation of young people. What is even more difficult to appreciate from an Australian perspective is that the state of Israel is surrounded by declared enemies, locked in a battle for nothing less than national survival. As a young girl, Zenatti plays her small part in this commotion, attempting to define her own identity whilst confronting tough political realisations regarding the occupation of Palestine and the wider Arab–Israeli situation amid a conflict dominated by propaganda. Many of her opinions contradict the status quo whilst demonstrating the futility of the conflict, the wrongs inflicted by both sides and common ground not realised.

Any person, male or female, who has experienced induction into Service life will be able to relate to Zenatti's emotions and experiences—the novelty of wearing the uniform for the first time, weapons training, the food, 'rolling reo's' (re-inspections), early mornings, strict adherence to timings and routine, the initial feeling of homesickness and a gradual realisation that your experiences are not easily communicated to civilian friends. Zenatti is at times unashamedly frank about her emotions, romantic insecurities, perceptions of herself and others, and her attempts to manipulate the military system to her benefit.

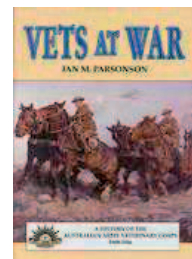
Zenatti tells her story through engaging narrative supported by diary entries. Large typeface, complemented by generous line spacing, makes the book a quick and easy read. I found it somewhat disappointing that the publication was not illustrated to allow the reader to associate names with faces, and a location map of Israel would also have been useful.

Interestingly, Zenatti now lives in France, where she has chosen to establish her immediate family in an environment far removed from the troubled Jewish homeland, and where compulsory National Service has been abolished.

VETS AT WAR: A HISTORY OF THE AUSTRALIAN ARMY VETERINARY CORPS 1909–1946

Ian Parsonson
Australian Military History Publications, 2005
ISBN 1 8764 3994 7

Reviewed by Major Michael Tyquin



Vets at War is a long awaited addition to works of Australian military history, but sadly this reviewer found it wanting. Despite the presentation of the book, its photographs and fine maps, Parsonson fails to bring any passion to his subject. But perhaps the most unpardonable error is the almost total neglect of primary sources with which he could have added either to the narrative or to what little analysis he applies to his subject matter. It also lacks the colour of other books written about the role of animals in warfare.

Still, *Vets at War* contains many facts of interest for those wanting to know more about this forgotten aspect of 20th century warfare. The author begins with the genesis of veterinary science in the Australian colonies. He reveals that the Melbourne Veterinary College was

established in 1888 and that its courses, at four years, were the longest in Western scientific education. Despite the almost total dependency on agriculture, Australia could only count 75 veterinary surgeons practising in Australia in 1910, the same year that the University of Sydney opened its Veterinary School.

The connection between veterinary science and the Australian military began in the 1860s with the start of the export of thousands of horses to India for the British Army. Subsequently during the 1880s veterinary surgeons, like doctors and engineers who were attracted to various colonial militias, gave their services free and it was not until 1886 that a Veterinary Department was established in Victoria with 'vets' being given honorary rank. Other colonies soon followed suit. There is an informative, albeit brief, chapter on the influence of the British Army's veterinary system on Australian practice. The chapter on the Boer War is disappointing, although the author may have been restricted by a lack of extant primary documents. But there is little mention of individual soldiers' attitudes to their horses, the problems of maintaining horses aboard troopships and the impact or otherwise of veterinary health and logistics on mounted operations in that theatre.

The Australian Army Veterinary Corps was established in 1909, lagging behind other Service corps that had superseded their colonial antecedents closer to federation. Prior to 1914, veterinary officers were required to train and instruct farriers and NCOs (both groups largely ignored throughout the book) in shoeing, first aid and the management and administration of veterinary hospitals. By the outbreak of the Great War there were 84 militia officers and five officers and five NCOs in the permanent Veterinary Corps. The war would see a number of officers in the Corps awarded the DSO or the MC.

There is a comprehensive discussion of transport and management of horses that accompanied the first AIF to Egypt, with few casualties. There are brief but clinical descriptions of the daily grind for the men of mucking out stables between decks and feeding the horses four times a day, in addition to grooming and exercising them. But nowhere do we hear the voices of these men or their attitude to their mounts. In 1916 we learn of an extensive reorganisation of the veterinary service and of the growing lack of officers as the war progressed.

The chapters on the Middle East campaign are the most lively, and, given the mobile nature of these operations, are the best in the book. There are several examples of Australian ingenuity in managing animals and illustrations of some of the difficulties Australian troops had in dealing with their mounts in the Imperial Camel Corps. Much more could have been made of the impact of the supply and care of mounts and draft horses on the success or otherwise of desert operations. There are also other revelations, including the severity of horse casualties as a result of enemy aircraft bombings, but the curious inclusion of a few pages about T.E. Lawrence seems out of place. Accounts of the part veterinarians played on the Western Front are given with almost no reference to animals other than draft horses. Nothing is said of the dogs and pigeons, for example, employed by the signals corps, no word about army mascots and little about the unique problems faced by horse-drawn artillery.

There is a two-page 'chapter' which deals with the interwar years, but it makes no reference to a series of British Army veterinary monographs published between these years and which were certainly used in Australia. Then, after a brief discussion of the Second World War (but

with no reference to *The Veterinary Manual for War in Australia 1939*) from the perspective of the Corps, the history comes to an abrupt end. Parsonson does not analyse how or why the Corps was disestablished and he makes no mention of any support the Corps had given to farmers over its history, the connection, if any, between the military and civilian teaching institutions nor the contribution of both world wars to veterinary science. The biggest omission is the almost total absence of primary sources, including dozens of personal diaries and over 20 veterinary unit diaries from World War I—readily available in the Australian War Memorial. To conclude, *Vets at War* is a useful reference but this reviewer found it unbalanced and poorly researched. Its potential as a comprehensive history of this subject is left unfulfilled.

News and Events

Royal Australian Navy – Sea Power Conference 2006

The fourth biennial Royal Australian Navy Sea Power Conference will be held at the Sydney Convention and Exhibition Centre over the period 31 January–2 February 2006. The conference is being organised by the Sea Power Centre – Australia, and will again form a part of the prestigious Pacific 2006 International Maritime Exposition. The RAN Sea Power Conference has become a significant event in the national and international maritime and security communities for its discussion on topical naval and maritime strategic issues, and approximately 700 delegates are expected to register for the 2006 conference.

The broad theme of Sea Power 2006 is Challenges Old and New. Its aim is to review permanency and change in the maritime environment and the underlying key drivers of the conduct of maritime operations.

Admiral Chris Barrie, AC, RAN (Retd) will present the keynote address at the conference. Conference sessions include:

- Challenges for Australia
- The Long View: Challenges from History
- Challenges and Responses:
 - Technology
 - The Maritime Environment
 - Procurement and Support
 - Today's Navies
 - The Royal Australian Navy
 - The Indian and United States Navies
 - Royal Australian Navy Panel

The full conference program and speakers' list is available on the conference website at <www.seapower2006.com>. Conference registration is also available on the conference website, and an Earlybird Registration rate is available for all who register and pay before 30 November 2005.

For more information, please contact the Sea Power Conference organisers as follows:

RAN Sea Power Conference 2006

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