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Chairman's comments

Welcome to Issue No. 188 of the *Australian Defence Force Journal.*

For this edition, the Board had before it 16 prospective articles, around double the number required, which is a very encouraging development. While it had not been planned to theme this edition, the Board decided to include six articles of relevance to the 2013 Defence White Paper (DWP13) and two on the important and enduring subject of professional military education, deferring the remaining articles to a later edition or other publication avenues, such as the Australian Defence College website.

As a lead-in to the DWP13-related articles, the *Journal* is pleased to feature a recent speech by the Chief of the Defence Force, in which he specifically outlines some of the challenges that the White Paper will need to address. We then have two articles assessing strategic issues, one by Major Cameron Leckie, another by a Canadian officer, Lieutenant Nick Deshpande. The two provide an interesting juxtaposition, although our readers no doubt will contemplate a number of other issues, such as the proliferation of nuclear and other weapons of mass destruction, and the implications of a continuing 'Arab Spring'.

Major Tom McDermott, a recent UK graduate of the Australian Command and Staff College, then analyses the implications for Australia of the latest US Quadrennial Defense Review. Colonel Mick Ryan, recently returned from a fellowship at John Hopkins University in Washington, assesses the strategic competition between India and China, two countries of immense importance to Australia's future, and both central to the Government's forthcoming White Paper on 'Australia in the Asian Century'.

We then have a timely article by Brigadier Marcus Thompson on the cyber threat to Australia, followed by an article from Commodore Saboor Zaman of the Pakistan Navy—a fellow graduate of the most recent Defence and Strategic Studies Course at the Australian Defence College—on the very topical subject of Australia's policy response to 'boat people'.

The edition concludes with two articles on professional military education. Geoff Peterson's article titled 'Nurturing the Australian Military Mind'—which also wins the $500 prize for best article—compares senior professional military education in Canada, US, UK and Australia, arguing that while our approach is appropriate for Australia's current circumstances, there are a number of matters that need further consideration. The second article by Philip Keller—again an interesting juxtaposition—provides a very useful overview of China's approach.

We are hoping that the articles in this edition, particularly relating to DWP13, will stimulate debate and encourage further contributions on what is obviously an extremely important topic for the ADF and Defence more broadly. We will welcome articles, shorter opinion pieces and letters to the Editor for the November/December issue, ideally but not necessarily on DWP13 and professional military education, by mid September. Submission guidelines are on the *Journal* website www.adfjournal.adc.edu.au

As usual, we also have a selection of book reviews in this edition, with an additional number in the on-line version. We remain keen to hear from readers wishing to join the list of reviewers, who are sent books provided to the Editor by publishers. If you are interested, please provide your contact details and area of interest to the Editor at publications@defence.adc.edu.au

I hope you enjoy this edition and I would encourage your contribution to future issues.

Craig Orme, AM, CSC
Major General
Commander, Australian Defence College
Chairman of the Australian Defence Force Journal Board

The ADF: set for success

General David Hurley, AC, DSC, Chief of the Defence Force

I am pleased to have this opportunity to talk about the challenges facing the ADF.

Thinking about the last decade, I would like to make a point about change. In the year 2000, we did not foresee that the ADF would spend much of the next decade fighting in Iraq and in Afghanistan, redeploying to East Timor and deploying to the Solomon Islands. Following the recent NATO summit in Chicago, the transition of forces in Afghanistan has begun and will be completed over the next few years. Over the next 12 months, we will cease operations in East Timor and the Solomon Islands.

In 2012, therefore, we look at the high probability that operational tempo will decline in the next few years and that we could relive the 'great peace' of 1972 to 1990. These changes will bring new challenges to the ADF, challenges compounded by the increasing pace of change in our neighbourhood and the budgetary constraints that we face.

Others have said it but it is worth emphasising that we live in a period of great change, a period of profound transition. I would like to set out some of the dimensions of the changes that we are facing and discuss some of the implications for the future development of the ADF.

In coming years, we need to build a defence capability capable of supporting our national security interests in a neighbourhood that is growing more complex and more dynamic. At the same time, we need to accommodate constraints on the resources we have available to do this. Balancing the imperatives of maintaining capability, growing capability and resource constraint is our strategic challenge. As always, we need to get more capability out of each Defence dollar, which means we have to be more efficient but also, more importantly, more thoughtful in the choices that we make about the nature of the capabilities that we develop.

As you are all aware, the Government has commissioned the development of a new Defence White Paper. It is possible to see the dimensions of the challenges that this White Paper will need to address.

Australia has always been blessed by geography and this blessing continues. We live in one of the most dynamic parts of the world, the Asia Pacific region, the location of much of the world's future economic development. One only has to contemplate the countries that make up our neighbourhood; Indonesia and the other ASEAN countries, the countries of the Southwest Pacific, then further north and northwest—Japan, the Republic of Korea, then China and India—and, of course, the US, a global power with a Pacific presence.

The Pacific and Indian Oceans are emerging as a single strategic system that is straddled by the Southeast Asian archipelago. This is our neighbourhood; a neighbourhood which is

undergoing massive change at a fast rate. These changes are transformational and will create a world very different to the one we live in now. It is a world with many opportunities for mutual prosperity and economic growth. But interwoven with this, it is also a world with significant security challenges.

There are many ways to describe the change that is occurring but let me just mention a few statistics to give a sense of the scale of change rather than to highlight any specific issue. In 1990, only 20 odd years ago, Australia's economy was as big as China's, bigger than India's and bigger than ASEAN's put together. In 2012, China's economy is four times Australia's. By 2030, it is projected to be nine times Australia's and, by 2050, twenty times Australia's. By 2030, Indonesia is projected to be the world's seventh largest economy and, by 2040, the world's fourth largest economy.

Straight line extrapolations are almost certain not to be what happens, however, it is very likely that whatever the trajectories of growth, many developing Asian nations have the ability to grow at rates faster than the developed world (which includes us). This means that while we are still growing and seeing ourselves as getting bigger, relative to the broader Indo-Pacific nations, we are getting relatively smaller. This will be important in coming decades.

In 2011, ASEAN's and East Timor's population was 602 million. By mid-2050, it is projected to be 796 million. In Melanesia, population growth will be between 50 and 60 per cent—from 8.8 million now to over 14 million by 2040. PNG's population will grow from about 6.8 million now to about 11.5 million by 2040. These are just the statistics but they are also markers of a very profound change that is taking place in Australia's position as a country in relation to our neighbourhood.

We can see some of the features of the world that is emerging. There will be greater economic interdependence. There will be increased levels of communication at both an official level and between populations. There will be more travel. But with growth and increased economic inter-dependency come challenges. There will be more coastal development, greater urbanisation, increasing pressure on resources and increased competition for resources. Natural disasters will have a greater impact, both because of greater coastal development but because they will be more visible due to the media. And there will be challenges to sovereignty in the form of territorial disputes, made more intense as a result of resource pressure and competition.

As new strategic actors and a more competitive multipolar system emerge in the Asia Pacific, there will need to be adjustments to the regional order. China and the US will need to continue working hard to develop the cooperative elements of their relationship while minimising areas of competition.

As countries grow economically they tend to develop their defence forces, so we are seeing regional nations undertake broad-based military modernisation across the spectrum of capabilities. This is particularly relevant to the maritime domain. Some capabilities are disruptive and we will need to ensure transparency of capability development. Familiar problems such as refugees, piracy, terrorism and proliferation will not diminish.

These challenges are regional and we need to build regional capacity to respond to them. This means strengthening existing alliances and relationships, and building new ones, both bilaterally and multilaterally.

We have seen great progress in the evolving regional architecture within forums such as the East Asia Summit, the ASEAN Regional Forum and the ASEAN Defence Minister Meeting Plus (ADMM Plus). These are important means to build regional capacity and address regional challenges. I would highlight, in particular, the ADMM Plus which has a mandate for practical cooperation and secures the constructive engagement of all the key regional powers—the US, China, Japan, India and Indonesia.

This forum will enable the ADF to exercise with all our key regional partners against the critical common security challenges facing the region such as maritime security, humanitarian assistance, and disaster relief operations and peacekeeping. Multilateral cooperation allows open and transparent information sharing and builds confidence. Defence will look at ways to enhance our contribution and involvement in these forums as they provide very effective means for Australia to work with other countries in the region and build regional capacity to address shared security challenges.

There is plenty of work to do. We know, sadly, that there is likely to be a need for disaster response in the future. It is also likely that there will be a need for capabilities that can support stability in countries that are experiencing governance challenges.

We have seen recent US policy place greater emphasis on engagement in the Asia Pacific, and the emergence of patterns of engagement that are likely to emphasise increased multilateral activities. This continues the traditional role of the US in underpinning the strategic order in the Asia Pacific region and a focus on building partners' capabilities. But it is also a contemporary response to the security demands of our neighbourhood because it recognises that the emergence of a community that has a sense of shared strategic and security interests is most likely to occur through shared activity. This is very different from US engagement in our region in the past; it is no longer dominated by the 'hub-and-spokes' system of alliances established following the Pacific War but is instead structured around communities of interest in the region.

Last month we welcomed the first rotation of 250 Marines to Darwin for a six-month deployment. Over the next few years, the intent is to increase this rotational presence to a Marine Air Ground Task Force of around 2,500 personnel. Over the next few years, we will also see an increase in the levels of cooperation between our air forces.

This increased US presence builds on a well-established schedule of combined and joint exercises. But expanding US engagement in our region will provide tangible benefits to Australia through enhanced ADF training opportunities and improvements in interoperability with US forces. In particular, increased opportunities for combined US/Australian training exercises will allow ADF personnel to draw on the Marines' amphibious experience as we train and prepare for the introduction of our new Landing Helicopter Dock ships in 2014. We need to be positioned to step onto HMAS *Canberra* when she arrives, confident that we can realise her full potential. Applying the lessons learned by our US allies is key to achieving this objective.

The US engagement will also give us opportunities to work with our primary ally and regional partners to build regional cooperation and capability.

Australia, like many other countries, is facing financially stringent times. A strong economy is one of the foundations of our security. You will be aware that in the last budget, the Government sought a contribution from Defence to support its fiscal policy objectives.

This resulted in major spending cuts to our Defence budget. Support to operations remains my highest priority, after Defence people, and there will be no impact on our current operations, including the provision of equipment for our deployed forces. Key capability projects identified in our last White Paper in 2009 including the acquisition of two Landing Helicopter Dock ships and new submarines will continue. We will receive our first two Joint Strike Fighter (JSF) aircraft as planned in 2014/15. However, the 12 additional JSFs will be deferred for two years—consistent with the decisions in the US on the broader JSF program.

A number of capability projects have been deferred by one or two years, with a small number cancelled where they have been superseded by alternative capabilities. We need to be astute in our planning for the introduction of new capability and mindful of the risk of creating capability shortfalls, either temporally or qualitatively. Other capability and facility programs will be subject to re-scoping. A range of administrative and minor capital equipment savings will also be made.

The US alliance will continue to be crucial in assisting the ADF to maintain the capabilities it will need. Through the alliance, Australia benefits from access to US intelligence systems and advanced military capabilities that we could not afford to develop on our own. We welcome the commitment of the US Administration to continue to place a priority on investing in advanced defence technologies to ensure that the US and allies such as Australia can maintain a qualitative edge.

Our budget outcome also means changing the way we think about our business as part of our cultural and broader reform programs. The organisation we have now will need to change to support the ADF of the future. As the 'Pathways to Change' program says, building our organisation is as important as delivering on operations. Our speed, discipline and clarity on operations need to translate to all domains of our work. In particular, we need to ensure that our investment in future capability gives us the capability that we need. This means ensuring over time that we get the balance right between resources devoted to the present and investment in the future. We need to manage that transition from the current to the future force. Defence will need to have a hard look at its reform activity, including structure and processes, to ensure that it is as agile, lean and efficient as possible without hollowing the organisation or the ADF.

The two questions that we must continue to ask—and must never be complacent about—are what is our best contribution to the security and stability of our neighbourhood, and what sort of ADF will best support that? But just as we ask those questions, we must always keep in view the reality that our primary obligation is to support our own security and to provide for the capacity to defend ourselves. These are not easy questions and the answers tend to change as strategic circumstances change over time.

There is a lot of public focus on what capabilities—platforms and weapon systems—Defence acquires. We recognise that how we use these systems and platforms—that is our posture—is critical for shaping Australia's security environment.

Australia regards strong international engagement as a significant strategic asset. Our engagement will continue to focus on the Indian Ocean and the Asia-Pacific region through a cooperative, multilateral approach to challenges such as terrorism, natural disasters, piracy and smuggling operations. However, noting the rate of change in our neighbourhood as a whole, including the continuing development of countries close to us, it is likely that the nature, depth and scope of our regional engagement will need to change. The next White Paper gives us an opportunity to look at the way we conduct our regional engagement and, in particular, the way we link with other government activities in our region to develop a more coordinated and whole-of-government engagement posture.

As we work more closely with regional countries across the spectrum of economic, cultural and security activity, we need to ensure that we speak and act in a cohesive way and that our security and economic objectives are in harmony. We will also need to accept that cooperation with the region will be increasingly on a multilateral rather than a bilateral basis and that the communities of countries that we work with might be different depending on the issues and interests involved. This will be challenging and require careful and innovative thinking and action, and a new level of flexibility.

More broadly, we need to work to ensure that the security architecture continues to be adaptive to the dynamic nature of our neighbourhood to support the development of a community that understands its common security interests and is able to manage them in a way that strengthens that community.

The experience of the last 20 years has taught us that we do not know what the future will bring. There are many opportunities in an economically dynamic and growing Asia Pacific region. However, history teaches that the world can change in ways inimical to our strategic interests and do so quickly. A major function of the ADF is to provide a hedge and an insurance against unforeseen challenges that can emerge from an unpredictable future.

We also know that regional influence is assisted by having credible capabilities in a professional Defence force. These are the reasons why we will continue to need high-end warfighting capabilities across the ADF and why in the future we will need a more capable and harder hitting ADF than the ADF of today. In this respect, the Government has indicated that in developing the next White Paper we will continue to pursue the acquisition of the Joint Strike Fighter and new submarines.

I am optimistic about the future of the ADF. We face big challenges, some of the dimensions of which I have outlined. But they present us with big opportunities—opportunities to develop capabilities relevant to our security needs and opportunities to work more closely and more effectively with our major ally, the US, and also in close partnership with other countries in our neighbourhood.

As our neighbourhood develops and changes, so will Australia and, with it, the ADF. Over the next few months, as we adjust to a new budgetary reality and develop the 2013 Defence White Paper, there will be an opportunity to explore some of these ideas and their implications in more detail. I look forward to engaging with you in this conversation.

General David Hurley graduated from the Royal Military College, Duntroon in December 1975 into the Royal Australian Infantry Corps. He served in the Royal Australian Regiment and, early in his career, as the exchange officer with the 1st Battalion Irish Guards (British Army). On his return to Australia, General Hurley served with the 5th/7th Battalion.

In 1989, General Hurley served a posting as the Mechanised Infantry Adviser, Australian Army Project Team Malaysia. As a Lieutenant Colonel, he assumed command of 1 RAR, which he led during Operation SOLACE (Somalia) in 1993.

Following his command appointment, General Hurley attended the US Army War College, returning to a posting as Military Secretary to the Chief of Army. He was promoted to Brigadier in January 1999 and assumed command of the 1st Brigade in Darwin.

From 2001-03, General Hurley served as the Director General Land Development, Head Capability Systems and Land Commander Australia. At the end of 2003, he was promoted to Lieutenant General in the role of Chief of Capability Development Group and, in October 2007, was appointed Chief Joint Operations Command.

General Hurley was appointed to the position of VCDF in July 2008. He was promoted to General and assumed his current appointment as CDF on 4 July 2011. In 2010, General Hurley became a Companion of the Order of Australia. He was awarded the Distinguished Service Cross for his service in Somalia during Operation SOLACE. General Hurley holds the academic qualifications of Bachelor of Arts and Graduate Diploma in Defence Studies.

NOTES

1.   This is a slightly edited version of a speech presented at the Lowy Institute for International Policy's 'Distinguished Speaker Series' on 30 May 2012.

Dangerous Assumptions: Australia's defence posture

Major Cameron Leckie, Australian Army

> After a long history of wrong thinking, they could not afford to be mistaken. The more events proved them to be wrong, the stronger their defences became against admitting this to be the case.
>
> Norman Dixon, *On the Psychology of Military Incompetence*[1]

Introduction

On 15 February 1942, 138,708 British, Indian and Australian soldiers in Singapore surrendered to the Imperial Japanese Army.[2] Some 15,000 were Australian, 7,000 of whom would die as captives before the war's end.[3] In less than a week, the supposedly impregnable 'fortress Singapore' fell to a significantly smaller Japanese invasion force. The fall was one of the worst defeats in the annals of British military history, with significant strategic and political impact. How could such a calamity have occurred?

While a vast amount of literature has been published on the reasons why Singapore fell—and fell so rapidly—many unrealistic and, in the end, incorrect assumptions were major contributing factors. The assumptions included a number of 'pearls', such as that the Japanese would not invade—and if they did the US would assist, that the Japanese could not fly at night, that the Buffalo fighter aircraft was 'quite good enough' for use against the superior Japanese Zero and Oscar fighters, that the Japanese would not use tanks, that the jungle of the Malay peninsula was impenetrable to an army, and that the north-east monsoon would prevent any landings until March 1942.[4] Most, if not all, of these assumptions could have—and arguably should have—been disproven well before the Japanese invasion on 8 December 1941.

Contemporary defence planning remains similarly challenged by the unassailable fact that we cannot predict the future and need to plan in the absence of complete information. Hence assumptions continue to form the basis for much of our strategic planning, as demonstrated in significant documents such as the 2009 Defence White Paper[5] and the ADF's 'Future Joint Operating Concept'.[6]

Assumptions must be made in the preparation of such documents. Some are stated, others are unstated. And they are typically framed based on factors such as cultural background and previous experience. For example, the underestimation of the Japanese by Western military and civilian analysts prior to the invasion of Malaya was largely the result of a culture that erroneously viewed Europeans as superior to Asians.

This article will argue that some of the key assumptions supporting current defence planning are likely to be just as erroneous as those made prior to World War Two. In the fullness of time, such assumptions have the potential to result in outcomes equally calamitous as the fall of Singapore in 1942. This being the case, rethinking Australia's defence posture is a prerequisite to correcting the 'wrong thinking' visible in documents such as the 2009 Defence White Paper and the Future Joint Operating Concept.

The dangerous assumptions

A critical reading of the 2009 Defence White Paper and Future Joint Operating Concept reveals three crucial assumptions which could be labelled 'dangerous'. The first, albeit unstated, is that economic growth can and will continue indefinitely. The second is the role of the US as the world's 'most powerful and influential strategic actor over the period to 2030'.[7] The third is the reliance on technology and the belief that 'the rate of technological innovation will continue to accelerate'.[8]

These assumptions are dangerous for two reasons. The first is that Australia's defence policy and posture would be significantly undermined if any or all of them proved to be false. The second is that there is a significant risk that all of them are likely to be proven false in the period to 2030. The implications could include a failure to meet strategic policy aims, unnecessary military casualties, political embarrassment or even instability, and economic loss or mal-investment.

Dispelling these dangerous assumptions is critical to avoiding such outcomes. In *The Logic of Failure*, Dietrich Dörner identifies a number of reasons why humans make poor decisions.[9] One of the reasons he cites is 'methodism', which he defines as seeing new situations in terms of old, established patterns of action.[10] Methodism may well be part of the reason that these dangerous assumptions have been made—and why they may lead to decisions which will be inappropriate to meet our changing circumstances.

After examining each of the assumptions, some alternative assumptions will be provided in this article which arguably would form a more robust basis for future defence planning.

Can economic growth continue?

Typically, government policies world-wide are predicated on the belief, or perhaps hope, that economic growth will continue indefinitely. Indeed, there is often a structural requirement for continued growth, because of the nature of the financial system where money is loaned into existence as interest-bearing debt.[11] However, whether economic growth can continue is a question that appears increasingly likely to have an undesirable answer.

When taking a short-term view of human history, planning on continued growth seems a reasonable approach, as evidenced by global growth over the last two centuries. A longer-term examination of human history, however, suggests that a growing economy is only one of several states in which an economic system can exist. The long-term economic decline of the Roman Empire and Mayan civilisation are two well known examples of socio-economic systems that have grown and then contracted. There are also examples of socio-economic systems that have existed in a sustainable, largely unchanged state for thousands of years, such as Tonga, Tokugawa Japan[12] and the highland tribes of Papua New Guinea.[13]

Before considering whether the global economy is approaching—if it has not already passed—the 'limits to growth', a theoretical model is required. The model that will be examined is that proposed by John Michael Greer, further developing the ideas of E.F. Schumacher, one of the 20th century's most influential economists.[14]

Greer's model splits the economy into three distinct but interdependent parts. The 'primary economy' consists of the goods and services provided by nature, such as the hydrologic

cycle providing freshwater and geologic processes that yield minerals. Schumacher argues that primary goods are the precondition for the production of all secondary goods.[15] The importance of the primary economy has been highlighted by a study which concluded that the value of ecosystem services (provided by nature) was at least twice global GNP.[16]

The 'secondary economy' is where humans use the inputs of the primary economy to create secondary goods and services. The secondary economy is that part of the greater economy which we are most familiar with and includes agriculture, mining, factories and retail outlets. The final part of the economy, the 'tertiary economy', consists of monetary goods and financial services, the purpose of which is to facilitate the distribution of primary and secondary goods.[17]

The evidence that the global economy's 'limits to growth' have been reached is significant and mounting. Threats to the primary economy include water stress in large parts of the world, desertification and degradation of agricultural lands, collapse of bee colonies vital for pollination, and a changing climate resulting in numerous detrimental outcomes, including more frequent extreme weather events, acidification of the oceans and changing weather patterns.

Many of the problems facing the secondary economy are due to the exponentially growing extraction of finite non-renewable resources. Oil production, for example, has increased exponentially for around 150 years, literally fuelling economic growth over the same period. It is now increasingly recognised that global conventional oil production has passed 'peak production' and is likely to commence a terminal decline within the next few years.[18]

Some would dispute that, arguing that total oil production has increased slightly over the last few years. However, the apparent growth in liquid fuel production is deceiving, with virtually all of the increase coming from bio-fuels and natural gas liquids.[19] Moreover, the alternatives to crude oil provide less net energy, because of the energy required in their production (notably tar sands and bio-fuels); provide a smaller range of uses (notably natural gas liquids); or have lower energy content than crude oil (such as ethanol).

The net result is that more of the resources and energy available to society are required to obtain energy, leaving less available for other economic activity. And as high quality energy becomes increasingly scarce and expensive, the ability to extract other resources will become increasingly difficult, particularly as mineral ore grades around the world continue to decline, resulting in an increased demand for resources and energy in their production.[20]

As concerning as the threats to the primary and secondary economy are, the most immediate threats to our current economic system reside in the tertiary economy, which has grown out of all proportion to the underlying primary and secondary economies. Arguably, the root cause has been the ever-increasing abstraction of the concept of money.[21] As a result, money has become confused with (and is often seen as) wealth. In reality, money is only a measure of wealth, with all real wealth residing in the primary and secondary economies.

From this point of understanding, the financial woes of the global economy since 2007-08—and the impotence of government and central bank responses—can be clearly seen. Virtually all responses to the 'global financial crisis' have focused on the tertiary economy. However, if the primary and secondary economies—the source of real wealth—are no longer growing, then the only way to resolve the debt crisis (noting that the total debt of Western democracies is over 280 per cent of GDP) is to restructure the debt.

This implies that 'there may only be painful ways out of the crisis'.[22] If this proves to be the case, we can expect economic instability, falling asset prices, rising unemployment, increased civil unrest and political instability throughout the global economy. Indeed, these and other findings were the conclusion of a recent Bundeswehr (German Army) report on the implications of peak oil.[23] Economic contraction could well continue until the tertiary economy realigns itself with the real wealth that the primary and secondary economies can provide; a process that will take decades or more to achieve.

For Defence, this suggests that current budgets are 'as good as it gets' and are likely to decline (potentially significantly) in the future, as the global and Australian economies contract. Thus a defence posture predicated on growing, or even stable, budget allocations will no doubt disappoint.

Whither the US?

The 2009 Defence White Paper assumed that the US will maintain its position as the world's 'most powerful and influential strategic actor over the period to 2030'.[24] Indeed, much of Australia's defence policy and posture is predicated on this assumption. This dependency has been acknowledged in the White Paper, which identified that 'any diminution in the willingness or capacity of the US to act as a stabilising force' would require a fundamental reassessment of planning assumptions.[25] This begs the question; can the US maintain its economic, political and military position for the next two decades and beyond?

The US has achieved its current position through two major and intertwined mechanisms; military and economic power. The military might of the US is perhaps its most outward sign of power. It spends more on defence, and by a significant margin, than the rest of top ten military budgets combined.[26] It has more than 850 military bases in dozens of countries.[27] Combined with the formidable technological advantage provided by carrier battle groups, precision munitions and stealth aircraft, this military strength provides the US with a unique ability to influence events around the world.[28]

The true strength of the US, however, rests not with its military but its economic power, which can be traced to the Bretton Woods agreement of 1944. This agreement saw the US dollar emplaced as the world's reserve currency, a position of 'extraordinary privilege' in global economic affairs.[29] This arrangement, which allowed governments to redeem currency for gold at a fixed rate, ended in 1971 when President Nixon abandoned the gold standard because other governments were losing faith in the US dollar, largely because of the budgetary impact associated with the Vietnam War.

This led to governments converting their currency holdings to gold, resulting in the gradual decline in US Government gold reserves.[30] The high oil prices of the 1970s resulted in OPEC's oil-exporting nations having surplus 'petrodollars' to invest. Combined with central banks virtually abandoning gold as their reserves, this led to an enormous demand for US dollars. This, in turn, paved the way for the US Federal Reserve to expand the money supply and create credit unfettered by any restrictions imposed by the Bretton Woods agreement.[31] These arrangements have provided the US with unprecedented economic power which, to this point, is yet to be seriously challenged.

The military, economic and political power exercised by the US has led many commentators to suggest that the US is an 'empire'. While the US Government would deny such a claim, historian Niall Ferguson, among others, makes a very convincing argument that the US is an empire in all but name.[32] Yet the history of empires suggests that they follow a certain trajectory; they are born, they rise in power and extent, and sooner or later they fall. William Bonner identifies 53 such empires that have risen and—bar one notable exception, the US—have fallen.[33] While many Americans consider the US to be an 'exceptional' case, the historian of empires would consider that it is only 'as exceptional as all the other … empires'.[34]

Another recurring lesson of history, and one that should be of serious concern for Defence planners, is the speed with which empires can disappear. The 2009 Defence White Paper focuses out to 2030, less than 20 years from now. Many empires have collapsed in less (and some in much less) time, including the Incas, Ming dynasty, Ottoman Empire, British Empire and Soviet Union. While the collapse of the US 'empire' might seem an unlikely prospect, it is worth remembering that virtually no-one predicted the disintegration of the USSR in the early 1990s. Dmitry Orlov has identified many similarities between the US and USSR, similarities that suggest the US is at risk of following in the USSR's footsteps.[35]

Similarly, Joseph Tainter, in *The Collapse of Complex Societies*, argues that over time societies get to the point where they must incur very high costs just to maintain the status quo.[36] Through this prism, we can catch a glance of why the US is at risk.

The first risk factor, and 'the single biggest threat to national security' according to the Chairman of the US Joint Chiefs of Staff, is the fiscal position of the US Government.[37] There is a fundamental structural mismatch between US Government expenditure and revenue, with annual deficits running at well over US$1 trillion and a total government debt of over US$15 trillion. This situation is forecast to continue deteriorating, with US Government debt likely to approach 190 per cent of GDP by 2035, from around 70 per cent now.[38]

As warned by influential commentary, the scale of this ever-growing debt creates doubt about the US Government's ability to repay and the future value of the US dollar.[39] Historical precedents suggest that any unwillingness by creditor nations to continue purchasing US Government debt, or a demand for higher interest rates, is likely to result in a 'hard landing' for the US, with highly unpredictable consequences for the global security situation.[40] And if, as previously discussed, the global economy is approaching the limits to growth, it may well be only a matter of time until the fiscal position of the US becomes untenable.

A second risk factor is the inability of the US political system to address the challenges that the country faces. Indicators are widespread and cover a diverse spectrum of government business, including:

- the misleading use of unemployment statistics to create an optimistic jobs situation;[41]
- the suspension of certain accounting rules to protect financial institutions that are insolvent;[42]
- the increasing 'zombification' of the economy, where non-productive sectors (such as finance, health, education, security and government bureaucracy) expand at the expense of productive sectors;[43] and
- the unrestricted right of corporations to influence the political system.[44]

The result of such actions is that the distribution of wealth and power in the US is highly concentrated among a tiny proportion of the population. A recent study by the respected Economic Policy Institute suggests that this inequality has been designed into the economic and political arrangements of the US, and that it is only the wealthy and politically powerful whose wealth and power have increased, while wages for the working class have eroded since the 1970s.[45] The study concludes that the US has declined as a result of the policies supporting this 'design'—and that it will continue to do so unless they are changed.

A third and final risk factor is that of 'blowback.' This term was developed by the CIA to describe the unintended consequences of US Government policies, largely kept hidden from the American people. The bombing of Pan Am Flight 103 over Lockerbie and the September 11 attacks are two often cited examples.[46] It would not be going too far to say that US policies since the end of World War 2, which for the Western world have resulted in relative peace and economic prosperity, have also produced for the US many enemies and competitors, including both state and non-state actors.

While none as yet seems capable of ousting America from its sole superpower role, those who have challenged US hegemony have been dealt with firmly. The prime example was the 2003 invasion of Iraq, which William Clark suggests in *Petrodollar Warfare* was primarily motivated by the need to protect the US dollar's extraordinary privilege as the world's reserve currency, after Saddam Hussein had commenced selling oil in Euros.[47] If the concept of 'blowback' is valid, it is highly likely that any weakness or perceived weakness by the US will result in the emergence of further competitors and adversaries.

In that regard, Iran arguably poses the next obvious challenge to US power. While the US Government has publicly been careful not to accuse Iran of trying to develop a nuclear weapon,[48] much of the Western rhetoric is focused on such an outcome. However, another factor has been Iran's ambition to abandon the sale of oil in US dollars in favour of other currencies or even gold. While Western nations have supported sanctions on Iranian oil imports, it is difficult to see how these will be effective when Iran has strong ties with nations such as China, Russia and India, while countries such as Japan and South Korea are heavily dependent on Iranian oil.[49] Perhaps Iran will become the American empire's equivalent of the 1956 Suez moment, when the once mighty power of the British Empire was finally realised as having passed.

Given the scale of the challenges facing the US, the enormous costs of maintaining its global agenda, and the difficulties it has created for itself, both internally and externally, some would argue that it will only be a matter of time until the US relinquishes its role as a global superpower. Whether that will transpire, who or what would fill the resulting power vacuum, and the implications for Australia's defence posture, all constitute serious questions. And they are questions best considered well ahead of time.

Man or machine?

The incredible advances in technology over the last two centuries are, both in scale and timeframe, unlike any previous example in human history. However, they have also facilitated the impression that technological progress only goes in one direction and that it will continue indefinitely. The 2009 Defence White Paper seems to incorporate this view, asserting for example that 'superiority in combat …. will hinge on continual advances in military technology'.[50]

However, a longer-term view of human history show that technological advancements can retrace to lower levels of technology or disappear entirely. Examples include the Easter Islands losing their ocean-going canoes, used for fishing, as a result of deforestation;[51] the virtual disappearance of wheeled transport and road networks in Europe during the Middle Ages;[52] and the significant deterioration in the quantity and quality of pottery produced during this same period. A military example is the disappearance of chariots from military service towards the end of the Bronze Age.[53]

There are a number of factors which suggest we may see a reversal of current trends in technological advancement in coming decades. The ones considered in this article are the focus on maintenance, the economics of technology, and the fragility of supply chains.

Maintenance is obviously vital to the longevity and operational status of infrastructure and equipment. Perhaps the best way to understand why we are approaching a maintenance crisis is through the second law of thermodynamics, also known as the law of entropy. Entropy is a measure of the level of disorder in a system. Over time, entropy always increases. We witness the effects of entropy on a daily basis; for example, metals corrode, roads become pot holed and weeds invade.

Maintenance is an ultimately unwinnable battle against entropy. It requires the allocation of resources and concentrated energy. As the limits to growth are approached and subsequently passed, there will be insufficient resources and energy available to maintain current levels of complexity, as explained by John Michael Greer's theory of 'catabolic collapse'.[54] For the ADF, in the absence of an existential threat against Australia, it is quite likely that—at some point—the Government will be forced to redirect resources away from the military to other areas, leading to an inability to maintain current levels of capability (which some might argue we are currently seeing in the Federal Government's recent cuts to the Defence budget).

The second factor is economic. Since the Industrial Revolution, it has made economic sense to replace expensive human labour with technology, powered predominantly by cheap energy provided by fossil fuels. This has resulted in a relentless drive to increase productivity through technological advancement, and the associated transition of labour-intensive industries to developing nations, because of their lower labour costs. This trend will likely reverse as the global economy contracts. As argued by Greer:

> In a world where everything but human beings will be in short supply, it makes no sense whatever to deploy increasingly scarce resources to build, maintain, and power machines to do jobs that human [labour] can do equally well.[55]

As unthinkable as this view may currently be, over coming decades—as economies contract—the current economic case for advanced technologies and increased labour productivity is likely to reverse, leading to an adaption of simpler technologies and an increased demand for human labour.

The final factor has been described as 'a paradox of military technology', namely that the advantage provided by the increased complexity of a military capability increases the vulnerability of that same capability to systemic collapse, because of its reliance on complex supply chains.[56] A number of recent events arguably highlight that this paradox is becoming an increasingly real threat to advanced technologies in general. They include the Japanese

tsunami of March 2011 and its impact on international automotive supply chains,[57] the 2011 flooding in Thailand and its impact on computer manufacturers,[58] and persistent, world-wide shortages in medicinal drugs.[59]

The combined effects of these three factors imply that over the course of this century, as the limits to growth constrict the global economy, many of the high technology items currently taken for granted will be gradually abandoned. There will be two major stages in this abandonment process; economic abandonment and systemic abandonment.[60]

Economic abandonment will occur through a combination of factors, including budget cutbacks, cost of living pressures and falling disposable income, resulting in both falling sales of high technology items and their use. Initially, the items that will be abandoned will be discretionary in nature; however, as time progresses, the items that are abandoned will be those that are currently considered central to our way of life and have a correspondingly greater impact.

Some early indicators of economic abandonment are already occurring, both in a civilian and military context. For example, a significant decline in US oil consumption since 2007[61] indicates falling motor vehicle usage (the rapid timeframe of this decline indicates that this is because of economic contraction rather than increased vehicle fleet fuel efficiency[62]) and there is anecdotal evidence that items such as cars and mobile phones are being abandoned by the unemployed in Europe, who can no longer afford them. Military forces are not immune to this either. Details of budget cuts, delays to acquisition programs, reductions in the quantity of equipment being acquired and a reduction in personnel numbers from defence forces around the world have become regular features in Jane's *Defence Weekly*.

Economic abandonment will eventually lead to systemic abandonment. Systemic abandonment will occur when a technology is physically no longer capable of being operated because of the failure of its supply chain or shortages of key inputs (such as fuel), or simpler technologies becoming more economic to operate. Of course, the process of abandonment of technologies will vary significantly in timing, scale and region, depending on many factors. Some items may disappear rapidly, while others may be used for many decades or centuries to come, albeit on a significantly reduced scale. Attempting to predict the fate of individual technologies would be an impossible task. However, as a general rule, it is likely that the more complex the technology, the more vulnerable it will be to abandonment.

The predicament facing Defence is achieving the balance between current capability and maintaining a capability edge over potential adversaries, while preparing for a future where advanced technologies will become increasingly difficult to maintain. Given the scale of Defence's capability acquisition program and current in-service equipment, this is an area which requires serious consideration well before it becomes a pressing issue.

Conclusion

The economic and political upheaval since 2007 suggests that the world is entering a transitionary phase, from a period of prolonged economic expansion to a period of prolonged economic contraction. The changes that this transition will bring are unlike any that most humans alive today have ever experienced.

Importantly, now is not the time for 'methodism', for extrapolating past trends into the future. To do so only encourages further 'wrong thinking'—wrong thinking that invites the potential for epic failure, such as the fall of Singapore. Yet the analysis in this article concludes that current Defence planning is indeed based on a number of dangerous assumptions, derived from past trends, which underpin such important documents as the 2009 Defence White Paper and the ADF's Future Joint Operating Concept.

Fortunately, most of the potential implications outlined in this article will play out over a multi-decade timeframe. So Defence has the opportunity to adapt and minimise its exposure to future crises, while developing a military force suitable to changing strategic and economic circumstances. But it will need to consider some alternate planning assumptions as the baseline for future strategic planning documents, as follows.

Funding

The global economy is in a transitionary phase from a general trend of growth to one of contraction. The trend towards contraction is likely to last for decades. Defence's budgets will continue to be squeezed, at a time when global instability could well increase. Defence planning based on falling budget allocations, particularly when tied in with the probable future direction of military technology, necessitates an operating concept, force structure and capability acquisition model very different to that currently in place.

The role of the US

The ability of the US to influence global events, politically, militarily and economically, is likely to decline over coming decades. It may progress gradually or events could unfold which trigger a rapid decline. Such a decline is likely to result in a period of global political instability, as other powers position themselves to fill the resultant power vacuum. The US is likely to become more inward-looking as this decline proceeds. The development of Australia's defence policy should be based on the assumption that the ability of the US to influence events in our region will diminish over time.

The direction of technology

The seemingly never-ending trend of increasingly technological complexity could well falter and reverse direction in coming decades. There are already numerous instances of the economic abandonment of technology in militaries around the world. This trend will likely continue and even accelerate as economic activity contracts. Continued contraction will, at some point, see the systemic abandonment of some technologies. Hence, an acquisition strategy based on a continuing acceleration of technological innovation is bound to fail. It requires a cultural change in how we view technology, essentially avoiding seeing it as a panacea to capability problems. Other steps may include prioritising technologies that Defence needs to sustain as budget cuts take effect, reducing the volume and complexity of technologies in use by Defence and selecting more general rather than specific technologies.

These assumptions raise many questions on an enormous array of important topics for Defence planners, such as force structure, readiness levels, capability development and personnel policies. Many of the answers to these questions will be difficult, even unpalatable. However,

in asking these questions, Defence will begin to prepare itself for a future that is likely to be very different to the recent past.

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Seven Sinister Strategic Trends: a brief examination of events to come[1]

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> It is impossible to predict the future, and all attempts to do so in any detail appear ludicrous within a few years.
>
> Arthur C. Clarke (1962)[2]

Introduction

This article considers seven dynamics that will have a significant impact on Canada and allied militaries around the world. These developments—declining American power, cyber warfare, fiscal sustainability, organised crime, environmental degradation, a potential global pandemic, and rising energy consumption—are significant challenges on their own. In combination, they will shape the geopolitical contexts in which Canada and its allies operate, generating a new and highly complex set of realities on which to base suitable strategic policy and posture.

These issues can, both singularly and in virtually any combination, induce strategic surprise, demanding a flexible and robust military guided by transformational leaders. Acknowledging that humans, including defence planners, are seldom proficient at predicting the future, we might also accept a potential lack of preparation for the anticipated strategic surprise arriving on the heels of what I have coined the 'sinister seven'. However, defence planners could direct, manage and wield their respective militaries in a manner that makes them agile and organic enough—across the spectrum of warfare—to enable relevancy across a broad spectrum of scenarios, so that strategic surprises do not significantly undermine their respective governments, societies and the values their militaries are tasked to protect and uphold.

In *Shaping the Future of Canadian Defence: a strategy for 2020*,[3] the authors fortuitously noted that while no-one can accurately forecast what the world will look like in 20 years time, it is vital always to consider key trends and patterns. Further, they advocated strategic planning based on a matrix of future scenarios, in order to establish a reliable and viable roadmap. More recently, General Martin Dempsey, Chief of Staff of the US Army, has discussed preparing for 'moments of change'. He asserts that military planners 'should expect to be surprised more frequently and with greater impact in the future'.[4] With that in mind, the following developments—the 'sinister seven'—are expected to have considerable influence on future planning and subsequent posturing, and they merit examination and consideration.

The decline of the US

Talk of a declining America permeates the media and scholarship, as consensus grows over the realisation that the world is potentially, maybe even likely, on the cusp of a geo-strategic reorganisation. Citing various 'drivers', pundits cast the US in the shadow of decline. And power, according to political scientist Timothy Garton Ash, is no longer concentrated in the West but 'is more diffused, both vertically and horizontally'.[5]

International relations theorist Christopher Layne appears to agree, noting that 'the case for US hegemonic exceptionalism has grown weak'.[6] Given its status over the last century—and its estimated rate of decline—the US will remain a world power for decades to come. But it will increasingly share the stage with others. The obvious question is what will be the impact on Canada and allied militaries when the 'unipolar moment'—generated in the early 1990s with the collapse of the Soviet Union—ends? The answer to this question is clearly linked to the relative growth of other countries.

Counter-hegemonic states, those that directly challenge American dominance on political, economic and military planes, are rising—sometimes in concert. Consider China and Brazil, for example, which have enacted a naval partnership unlike any other. Brazilian navy personnel will train their Chinese counterparts in the intricate and lesser known art of carrier operations; such unique and potentially far-reaching collaboration buoys their relationship well beyond a strictly economic context. And while Brazil can expect improved relations with an Asian giant, for China, cooperation with Brazil is only a part of its larger naval modernisation effort, coupled with significant fleet growth.[7]

Meanwhile, amid the context of maritime influence, India is anticipated to have the third or fourth largest navy in the world in the near term (including the world's second-largest number of carriers).[8] That is to say, it will possess a 'blue water' navy capable of expeditionary operations. But the state of its navy and the associated limits of sea control are certainly not the only barometer of a nation's power. India benefits from accelerated globalisation and a vast export market to wield considerable economic power today, with even greater expectations for the future. This has enabled the world's largest democracy to hike its defence spending by 34 per cent in 2009-10, the largest increase for 20 years.[9]

The steady rise of new powers, some more surprising than others, can be expected to force noticeable change within the world system at a potential rate and salience unseen since the collapse of the Soviet Union. As new markets emerge, millions of persons could be absolved of their impoverished conditions and become accustomed to previously unimaginable higher standards of living. Hence, it seems inevitable that political and military 'multipolarism' will catch up with the economic multipolarity the world has known for almost two decades. And if America tumbles a few rungs down the global power ladder, there is a good chance that Canada will see downward movement as well.

Cyber threats

Will the next interstate conflict begin with a blackout of all components related to power projection, including banking, communications and much of our security apparatus? There is an increasing likelihood that potential adversaries will utilise cyber attacks to disable power and communication networks to disrupt defence networks and the numerous platforms and activities that are reliant on them. US President Obama has characterised this threat as 'one of the most serious economic and national security challenges the US faces as a nation'.[10] The same could be said of Canada and other allied militaries, because of their advanced level of reliance on activities in the cyber realm.

In one of the most significant early breaches acknowledged by the US Government, a foreign power was able to download about 12 terabytes of sensitive military information in 2007.[11]

In yet another incident, a foreign power was able to breach the firewalls of the network belonging to US Central Command and observe traffic for 'several days' in late 2008.[12] Pentagon officials also acknowledged that in March 2011, thousands of documents were pilfered during an intrusion of a defence contractor's system.[13] These acknowledged compromises offer a glimpse of the wider issues at hand, such as the potential impact of large-scale disruptions to major power grids or banking systems.

These days, the functional ability of a modern military force rests, for a large part, on its computer networks. Most communications, the transmission of classified intelligence, the execution of operations in both domestic and foreign theatres, and numerous other routine activities, rely on a vast grid underpinned by only a few central nodes (and kept functioning by a related power grid). This also applies to the government at large.

In 2005, for example, the Canadian Government invested approximately CA$8.5 billion in its information and communication technology infrastructure.[14] As a result, the country is at the fore of 'e-governance.' Unfortunately, Canada's reliance on these networks contributes to its vulnerability to cyber attacks.[15] In February 2011, the Canadian Broadcasting Corporation reported that federal departments, including Defence Research and Development Canada, had been targeted by foreign hackers using unsophisticated 'phishing' techniques.[16] Further attacks of this nature are likely, not least because of the 'soft underbelly' that networked systems represent for relatively advanced nation-states.

Regarding such future attacks, the potential perpetrators are as varied as the targets. Foreign intelligence services, disgruntled or rogue employees, organised crime syndicates or even everyday hackers could damage or compromise the integrity of information systems in a number of ways. Social 'hacktivism' has also come to the forefront lately as groups such as Anonymous and Wikileaks operate relatively unimpeded within the cyber domain. To obscure its involvement, a foreign government could hire the services of criminal syndicates to breach a country's or company's networks to retrieve sensitive data. Likewise, a 'cyber-gang' could itself initiate a breach with a view to selling its findings to a willing buyer.[17]

Indeed, on the cyber warfare battlefield, one of the major challenges is attribution. How does a target entity (nation or company) determine who initiated an attack, especially with the existence of thousands, if not millions, of 'bots' (virtual slave computers to which cyber attackers have access and utilise as proxies to hide their true identities) that are employed to conduct them?[18]

The ability of cyber attackers to enact sophisticated denial and deception techniques further complicates the attribution challenge.[19] The bottom line is that governments must continually focus on safeguarding proprietary information, especially that which is related to vulnerabilities and capability gaps. For most allied militaries, this will likely require a significant investment, something that increasingly may become fiscally, intellectually and practically more difficult in the future.

Fiscal sustainability

There are obvious signs that the global economy has not yet fully recovered from the so-called 'great recession' of 2008. Despite recovery rhetoric in Canada and elsewhere, the more likely reality is an economic future shaped by an ageing population, mounting debt and

uncertainty in global capital markets. As a result, the fiscal arena in which strategic planners will find themselves will increasingly be characterised by restraint (self-imposed) and constraint (imposed by a higher order).

The training and educational system, capital acquisition projects and sustainment programs will be forced to absorb reduced costs. Paying for the armed forces that Americans, Canadians and allied nations have become accustomed to will become increasingly difficult. This is to say nothing of their fundamental and expected ability to execute overseas contingency operations or even to assist civil powers at home. Both endeavours carry enormous costs that the armed forces and their respective governments might not be able to shoulder in 10-20 years.

Consider the ongoing US predicament. Rudolf Penner, the White House Chief of Staff during the Clinton Administration and now President of the Center for American Progress, 'sounded alarm bells' in Washington recently when he opined that America is on 'an unsustainable path on the national security front. We're spending about—in real dollar terms—50 per cent more than at the peak of the Reagan build-up on defense'.[20]

Cindy Williams, at the Massachusetts Institute of Technology, has noted that budgeted costs rarely reflect a military's true costs, arguing that 'covering all the likely costs [for the US military] would require another US$700 billion over the five-year period 2008-12. Yet admitting today to the full costs of the present path would force the nation into a conversation the Administration wishes to avoid'.[21] Given the very real controversy and debates underway in the US as this article is being written, it is a conversation that needs to take place, especially as social security spending is set to rise, both in the US and Canada.

For example, a 2010 report on Canadian debt identified unfunded pension liabilities as representing approximately 12 per cent of the nation's GDP.[22] This does not take into account the costs of long-term health care, which, across most Western countries, will rise with ageing populations. One source estimates that US social security spending could push the deficit to 80-100 per cent of GDP by 2050, with Canada—according to some estimates—expected to reach 100 per cent of GDP by the same date.[23] Given their similar demographic patterns, such as declining birth rates and an ageing population, entitlement spending will likely pose a major challenge to Western nations, which would be amplified by further economic shocks.

The economic reality is that risk is increasingly diffused within the global financial system, resulting in the economies of many nations being forced to accommodate some level of fragility. Nevertheless, it is a near certainty that companies or countries will default on large debt repayments in the near future. The impact of their inability to repay such debts, much like many American homeowners in 2007 and 2008, will reverberate through the tightly interconnected system that is the global economy.

More recently, the end of the 'housing bubble' and other fiscal practices in the US led to the collapse of banks in Iceland, and revelations of structural deficiencies in the Greek, Italian, Irish and Spanish economies. And in Canada and elsewhere, a number of commentators are sounding alarm bells over a likely and troubling commercial real estate 'bubble' and consumer debt load, at a time when global trade governance is shifting precipitously.[24]

Ultimately, mounting debt—in tandem with entitlement costs—has the potential to cripple the fiscal solvency and related government agility of Canada and a number of allied nations. Yet nation states and the private sector are not the only players in the market. The global economy

can be undermined in many other ways, including by organised crime, which increasingly has been able to globalise its endeavours and establish itself in a variety of environs, fostering fear and instability.

Transnational organised crime

From Miami and Vladivostok, to Accra and Yokohama, organised crime is firmly rooted in societies all over the world, including that of Canada. The vast and varied networks within which these entities operate have tentacles that stretch upwards, and also corrupt government officials. These networks also facilitate the movement of people and illicit goods, such as narcotics, small arms and improvised explosive device components.

Organised crime is very much the 'grease' in the machine of many terrorist organisations or insurgent groups, such as the Taliban. Furthermore, criminal syndicates likely represent the greatest threat to post-conflict reconstruction and stability. Such environs are fertile ground for illicit enterprises to spring up and thrive amid the chaos and vacuums of legitimate power. Russia, the Balkans, and even Iraq and Afghanistan, all attest to this process. In turn, criminal syndicates metastasise, much like a cancer on society, to produce stagnant economies and political instability.

Brock Dahl, working for the US Treasury Department, who helped formulate and implement US policy relations to fiscal and macroeconomic environments in Iraq and Afghanistan, has called transnational crime the 'quiet enemy', which has grown in power over recent decades but especially since the collapse of the Soviet Union.[25] According to the UN, the trafficking of illicit narcotics alone is thought to generate approximately US$400-500 billion of economic activity annually, while the smuggling of other goods and people garners another US$100 billion.[26] Estimating the size of underground markets is imbued with uncertainty. Yet according to the US Attorney-General's Office, they are key sectors of the global economy, 'contributing' as much as 15 per cent and likely to grow ever larger.[27]

Down the road, organised crime is expected to wield even more power in the global system and exert greater influence over events. The reach of criminal groups is expanding in tandem with illicit business interests, cementing their presence in North America. Elements of Mexican cartels, for example, have reportedly established themselves in British Columbia, a province already playing host to many other criminal groups. In other countries, similar developments could contribute to doubts with respect to governmental legitimacy. Organised criminal networks have become major players in the global economy, and their influence must be both considered and stemmed.

Environmental degradation and resource scarcity

While hotly debated, the issue of climate change is having very real effects in countries around the world. It contributes to and exacerbates the environmental changes brought about by human activity. Desertification, deforestation, acidification and other environmental changes have a significant impact on agricultural output, national and regional economies and, ultimately, human security. There is an increasing demand for finite resources as the global population grows. By 2025, estimates suggest there will be eight billion people inhabiting the earth, with 90 per cent of the anticipated growth expected to take place in the developing world, where the food and water supplies of certain countries is unreliable.[28]

In 2007, scientific experts in Great Britain identified 46 countries, collectively home to 2.7 billion people, where a scarcity of water is highly likely to agitate violent conflict in the near future.[29] Furthermore, nations with inadequate access to fresh water often make up for this deficit by importing grain, which is considered 'virtual water' because of the water used to produce it and contained within.[30] Unfortunately, in recent years, the world's grain supply has been characterised as uncertain. Increased heat and drought resulted in decreased grain production in at least five of the major grain-exporting nations between 2002 and 2004.[31]

The scarcity of water and other essential resources has the potential to upset conventional norms and to induce instability in many parts of the world. Conflicts that become widespread due to resource scarcity are likely to demand military intervention if they are to be resolved. Given the commitment of Canada and many allied nations to UN operations and other coalition arrangements, their forces can be expected to come face-to-face with the issue of environmental degradation in various theatres. Such engagements will pose complex sustainment issues and demand tightly-configured coordination mechanisms with humanitarian aid providers, among others. Planners should be primed to consider the impact of environmental degradation and resource scarcity as they weigh increasingly diverse effects in future operating environments.

Energy crisis

The 'rising Asian giants' are competing with each other and with the rest of the world for a finite pool of energy resources and raw materials to the meet the requirements of their production-based economies and domestic growth. Today, China is second only to the US when it comes to importing crude oil—and it has worked vigorously to diversify its sources.[32] In 2006, India consumed only 40 per cent of China's share but has since embarked on a 'growth turnpike' that will lead to an accelerated demand for oil.[33]

The global oil market is subject not only to significant demand (approximately 1000 barrels per second) but also to tightly controlled supply, along with the speculation that takes place in commodity investment circles.[34] In this environment, Russia—which would otherwise have a stagnant economy (along with a shrinking population)—has been able to flex considerable geostrategic muscle and influence politics in Europe and beyond.

The 'crisis' aspect simmers below the surface and concerns the finite supply of oil, along with general military reliance on it. There was an amount of writing devoted to energy crises and peak oil during the mid 1970s. The difference now is based on demographics, as well as the technological advances that have since allowed experts to more accurately gauge just how much global oil resources remain. Oil rich fields, such as those possessed by Saudi Arabia, will still yield copious barrels of oil for some time.[35] But newly-discovered caches, according to economist Peter Tertzakian, 'are increasingly smaller in size' and:

> A new oil field containing a few hundred million barrels of reserves is big news. At the current rate of global consumption, such fields would be drained in days if we could turn on the spigot. Moreover, many of these new reserves are located in geographically and politically inhospitable regions, generally the last places on earth to be mapped in great detail.[36]

The International Energy Agency, the body charged with keeping the pulse of global supply and demand patterns, would likely agree. In late 2009, its chief economist, Faith Birol, asserted that 'the output of conventional oil will peak in 2020, if oil demand grows on a business-as-

usual basis'.[37] This assertion—and many others like it—are cause for consideration of the strategic impact of the lack of oil as a key energy resource.

Furthermore, problems of accessibility—based on the infrastructure needed to extract, refine and transport oil—are making it increasingly more difficult to meet increasing demand. Unless these problems are resolved, many of the mechanisms on which society relies (such as transportation, industrial processes, the generation of electricity, and the manufacture of numerous goods) could become redundant or practically impossible. It is a potentially fatal burden that militaries will be unable to escape, likely forcing them to operate very differently.

It is little wonder then that the US military and others have invested significant dollars in alternative energy sources, such as 'biofuels' for wheeled fleets.[38] Canada has undertaken similar initiatives, through its educational institutions, from which it stands to benefit. Ultimately, trans-national cooperation between countries on alternative energy resources will likely be necessary to overcome the challenges presented by scarce oil.

Global pandemic

The possibility that a global pandemic will sweep the world has grown over the last decades, especially given the rapid rate at which goods and people travel. Thus far, the world has had to confront viruses that are either highly transmissible and/or scarcely pathogenic (swine flu) or vice-versa (avian flu), ensuring that death rates have remained relatively low. Even the 1918 Spanish influenza pandemic killed only three per cent of the world's population. Yet it was enough to significantly impact the regional and global economies and governments of the day.

Recent experiences have demonstrated that the world's pandemic preparedness is 'patchy' at best.[39] Neither SARS, which originated in China, nor H1N1, which originated in Mexico, were adversarial in nature. They occurred naturally. Other scenarios of concern involve less benign versions. And the barriers that may have hitherto prevented or slowed terrorist acquisition of certain biological weapons are no longer as robust or potentially as successful, given the availability of knowledge, expertise and cheaper technologies. This increases the probability of use of either genetically-modified biological weapons or genetically-targeted biological weapons.

The first could involve, for example, the artificial combination of avian influenza (H5N1) with swine influenza (H1N1), harnessing the lethality of the former and the transmissibility of the latter toward a human vector, while maintaining the requisite pathogenicity to create either a new super-virus strain or sub-type.[40] The second could involve rogue scientists leveraging the available genetic code of human beings (or another animal species, livestock or crops) to identify a specific genetic marker that makes a segment of that species unique from the rest of the population. They could then, theoretically, produce a weapon designed to explicitly target that segment, such as males or bovine stock.

For years, scientists have engaged in similar biotechnological innovation to create disease-resistance wheat. Fortunately, the possibility of either case remains remote in the near term, yet—given the strategic environment in which actors that desire to employ such weapons operate—the likelihood continues to increase, in concert with more broadly available technologies. Should either of the previously-described scenarios occur, a pandemic would likely ensue, the sheer scale and implications of which would be impossible to predict.

Whether a pandemic were to be man-made or naturally occurring, the implications are serious. There are scarce resources to treat influenza on a massive scale. Public health officials and emergency workers would certainly be among the sick, regardless of what preventative and protective measures are in place. Migration patterns would be suddenly and significantly altered. And certain resources, such as food and oil, could become impossible to access. Yet within the next 20 years, medical experts expect avian flu, for example, to mutate in such a way that it will be transmissible between humans.[41] Should a pandemic occur, it will be particularly difficult to isolate and it may necessitate the domestic or international deployment of armed forces.

Conclusion

An appreciation of these trends and others will not result in a great measure of certitude about future events, nor is it designed to do so. Rather, it could provide a breadth of consideration as a point of departure to allow defence planners to better prepare and plan for possible eventualities. The true nature, combination or future salience of the trends resides in relative obscurity. There is no guarantee of when or if they will manifest to their full individual or collective potential. There are, however, some developments that can be assessed with greater certainty; transformation will continue to be a way of life, and fostering the requisite leadership will be essential if militaries are to remain relevant and effective.

And by no means are the seven trends the only strategic concerns. Failing and failed states, terrorism, the proliferation of both conventional and unconventional weapons, and numerous other dynamics will also shape the times to come. Furthermore, just as each of these issues bundles a unique set of challenges, they are inextricably interconnected in space and time, given their borderless nature. They are, in essence, a cross-section of the sibling spawn of globalisation.

A financial crisis or pandemic may originate in a single state or region, but it would rarely be confined to it. Criminal syndicates smuggle goods and people across regional borders, and often continents, with impunity. The environmental impact of developing nations—especially those with an eye to challenging the American hold on world dominance—affects the standard of living for each person, and this could lead to widespread scarcity. So also could the impending energy crisis. Finally, cyber warfare will undoubtedly alter the landscape of war and how it is waged.

From the context of uncertainty generated by these dynamics emerges the potential for 'black swan' events in either the sovereign boundaries or areas of interest of Canada and allied nations, each potentially precipitating military involvement. This gives rise to inevitable tension, as demonstrated by the reaction to Freier's 2008 paper articulating the potential domestic deployment of the US military in the event of civil disorder beyond the control of local, state and national authorities.[42]

The 'sinister seven' also speak to the finite and time-limited nature of rule sets. The rule sets that guided us ten years ago will be anachronistic in another ten, just as those that imposed some order during the Cold War are no longer fully relevant today. An awareness of their limited applicability and the constant assessment of major trends and patterns, accompanied by a dose of healthy scepticism, will ensure that Canada and allied nations are better poised to stand prepared for any eventuality.

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The implications for Australia of the US Defense Review[1]

Major Tom McDermott, UK Army

> I will bet you $100 that five years from now, US influence in this region will be as strong if not stronger than it is today.
>
> US Secretary of Defense Robert Gates, 2011[2]

Introduction

The 2010 US Quadrennial Defense Review (QDR) is the current, legislatively-mandated articulation of US defence strategy and priorities. Like all defence white papers, it was designed to achieve a complex and challenging task: in this case, to look into the future, analyse the short-, medium- and long-term threats faced by the US, identify defence priorities, and link 'ends, ways and means' in combating these threats as a critical part of a nation's national security strategy.[3]

The QDR immediately stands out as an indicator of strategic change. For the US military, it was the first review to establish the winning of 'today's wars' as the number one priority, and the first to include an objective of 'preserving and enhancing the all-volunteer force'. These were important changes, asserting how the US Department of Defense, and the President himself, believe that success in current operations is a non-negotiable pre-condition for countering future threats.[4]

However, the bold moves did not stop there. Set in a context of continuing global economic crisis and a plethora of emerging security threats, the QDR attempted to create for the US a financially-viable 'balanced force', best placed to respond to the challenges of the future.[5] And it made considerable and often controversial sacrifices in conventional capabilities, including cancelling the F-22A Raptor program[6] and restructuring the Army's 'Future Combat Systems', in favour of increasingly asymmetric tools.[7]

For the countries that form the 'web' of US defence alliances across the globe, the QDR provided an equally clear message that the US intends to mitigate the rebalancing of its conventional capability through increasingly 'sharing the burden' with its long-term partners. The QDR was unequivocal in its statement that in today's complex and uncertain world, 'no-one, and certainly no one military, can do it alone'.[8] Indeed, the importance of reliable allies and partners, and robust burden sharing, is a 'golden thread' through the review. For Australia, the QDR (and the policy that followed) has significant implications.

The aim of this article is to analyse these implications. First, it will briefly check the assumption that the QDR is of great importance to Australian defence policy, particularly as Australia plans for its recently-announced Defence White Paper in 2013.[9] Second, it will examine the QDR's intentions for the Asia-Pacific region. Finally, it will examine three inter-related policy implications for Australia, before suggesting a 'way ahead' for Australia's defence and foreign policy.

The importance of the QDR for Australia

Since 1951, the ANZUS Treaty has been the cornerstone of Australian defence alliances and has shaped the character of Australia's defence policy and its defence force. Particularly in the last decade, the ADF has been optimised for operations with the US. Since 2001, Australian forces have deployed within a US-led coalition to Iraq, Afghanistan and the Middle East.[10] Joint US/Australian exercises (such as the biannual Exercise Talisman Sabre[11]) are signature events on the Australian training calendar. Capability development has been even more markedly influenced, with M1 Abrams tanks, C-17 transport aircraft, air warfare destroyers with the Aegis combat system, Canberra-class landing helicopter docks, the Joint Strike Fighter and the Link 16 communications system all procured—or at least planned—with the aim of increased interoperability.[12]

This is a trend that is continuing. Australia signed the 'Enhanced Defence Cooperation Initiative' with the US in 2007, has commenced the development of a joint US-Australian satellite partnership,[13] continues to support the ABCA Armies' Program[14] and, in 2011, signed a new Australia/US Defence Trade Cooperation Treaty.[15] As stated in Australia's most recent Defence White Paper, 'without access to US capabilities, technology and training, the ADF simply could not be the advanced force that it is today, and must be in the future, without the expenditure of considerably more money'.[16]

Some would argue that a major outcome of this enmeshment has been increased Australian reliance on the US. While Australian Defence White Papers since 1987 have been explicit that Australia must remain responsible for its own defence, outside of an attack by a major power,[17] this 'self reliance' is now somewhat questionable, even at the lower end of the spectrum. By way of example, Andrew Shearer, writing for the Lowy Institute, has asserted that the success of Operation ASTUTE in East Timor was heavily reliant on 'significant US intelligence, communications and logistical support' and the 'lurking presence of a Marine Expeditionary Unit over the horizon'.[18]

It also seems generally agreed that without the 'guarantee' of logistic support provided by ANZUS, Australia would be unable to sustain any extended deployment of the ADF.[19] Moreover, without US technological support, Australia would require vast increases to defence spending to develop indigenous defence capabilities and, as Hugh White asserts, 'Australia has a poor record in developing and maintaining the technological expertise needed to buy, build and operate sophisticated military systems'.[20]

Similar assertions have also been made at the higher end of the spectrum. For example, Hugh White has argued that, even should *Force 2030* come to fruition—which most commentators now consider increasingly unlikely—the target maritime aspiration of sea control will remain beyond the ADF without US support.[21] Along similar lines, Ross Babbage has argued that a genuine independent air deterrent would require 300-400 Joint Strike Fighters, not the 'around 100' currently planned for.[22] It also cannot be ignored that Australia remains entirely reliant on US extended nuclear deterrence for protection against the most consequential of threats[23] and that, without the US nuclear umbrella, Australia would need to fundamentally reconsider a nuclear deterrent of its own.[24]

Some have argued that Canberra seems, at least ostensibly, to be making efforts to downgrade this reliance. In particular, they saw the 2009 Defence White Paper as an attempt to move away

from the traditional centrality of ANZUS, citing its assertions that Australia would meet its alliance obligations 'as determined by the Australian Government at the time' and that ANZUS 'does not mean unconditional support for all the policies of the United States'.[25] Since then, progressive cutbacks in Defence acquisition programs—culminating in further cuts announced in the Federal Government's May 2012 budget—have led some to contend that, regardless of the intent, Australia's diminishing capabilities will pose 'a threat to the US alliance'.[26]

However, any suggestions of 'alliance drift' have been officially refuted. In its joint communiqué following the 2011 Australia/US Ministerial consultations, the alliance was described as 'indispensable to the security of Australia and the United States'.[27] Australia's Defence Minister, Stephen Smith, has since consistently described the Australian commitment to ANZUS as 'unflinching',[28] and Australia has committed to continued cooperation on space, cyber threats and defence procurement,[29] as well as commissioning a 'Defence Force Posture Review' to be undertaken in parallel to the US 'Global Force Posture Review'.[30] And, in outlining the intent of the 2013 Defence White Paper, Prime Minister Gillard asserted that it would not set a new strategic direction but largely update the ideas in the 2009 paper.[31]

QDR and the Asia-Pacific

In the QDR, the Asia-Pacific region is the key focus of its aims of 'preventing and deterring conflict' and 'preparing to defeat adversaries'.[32] Three trends are particularly important for Australia: the 'complex and uncertain security landscape',[33] the implicit rise of China within this landscape, and the development of anti-access/area denial capabilities.

The 'complex and uncertain security landscape' is a major headline of the QDR. It states that 'not since the fall of the Soviet Union … has the international terrain been affected by such far-reaching and consequential shifts', and that the 'rise of new powers … poses profound challenges to the international order'.[34] For the Asia-Pacific region, this explicitly means the rise of China. The QDR establishes China's growing influence as one of the most 'consequential aspects of the evolving security landscape in the Asia-Pacific region and globally'.[35] While it welcomes a 'strong, prosperous and successful' China as a global player, it expresses equal concern as to the lack of transparency regarding China's military intent.[36] It is clear that China's increasing modernisation, and its military decision-making, are a core focus for the US.

Concerns regarding anti-access and area denial capabilities are developed throughout the QDR. First identified in the 'executive summary' as a key feature of the emerging operational environment,[37] these capabilities emerge as a priority for the 'rebalancing' of the US military.[38] And again, most of the ink is reserved for China. The QDR undertakes a frank analysis of China's capabilities and the 'legitimate questions' raised by its perceived lack of transparency.[39] The obvious concern is that anti-access and area denial capabilities have the potential to affect US power projection, calling into question the integrity and effectiveness of US alliances and security partnerships.[40]

The QDR seeks to address these trends (or indeed threats) through counter-measures. Two principle measures have direct implications for Australia and are worthy of examination: alliances and the 'air-sea battle' concept.

Alliances are at the heart of the QDR's approach to the Asia-Pacific region. The review contends that a more complex Asia-Pacific security environment requires a 'more widely distributed and

adaptive US presence ... that relies on and better leverages the capabilities of our regional allies and partners'.[41] This intent has mutual benefit. For the US, an expanded regional 'footprint' supports the continued deterrence of conflict, helps maintain critical access to areas of interest, increases its options in overcoming anti-access and area denial capabilities, and adds to its layered defence against weapons of mass destruction.[42] For US allies, this explicit reinforcement of its military presence in the region dispels fears of a US withdrawal.[43] As Washington's longstanding and most loyal supporter, Australia sits close to the centre of this alliance 'web'.[44]

The development of the 'air-sea battle' concept is arguably equally important to Australian defence policy. This developing doctrine is at the heart of US plans to deter and defeat aggression. It involves air and naval forces, staging from the 'distributed presence' of US forces, and integrates capabilities, from across all operational domains—air, sea, land, space and cyberspace—to counter challenges to US freedom of action.[45] A recent report from the US-based Center for Strategic and Budgetary Assessments (an independent, non-partisan policy research institute), addressing the 'air-sea battle' concept, emphasises a 'tight integration of key allies ... with a concomitant greater rate of effort on their behalf', and mentions Australia specifically.[46]

Policy implications for Australia

Balancing diverging interests

Throughout most of its history, Australia's major trading partner has conveniently doubled as its primary strategic ally.[47] However, since the turn of the century, this has been overturned by the continued and exponential economic rise of China. Two-way trade between China and Australia trebled between 1998 and 2007. In 2009, China overtook the US to become Australia's largest trading partner. It is also the lead trading partner of five other of APEC's 21 members.[48] And while Chinese investment in Australia more than doubled between 1991 and 2006, Australian investment flows into China over the same period increased a remarkable tenfold.

However, it must be noted that Chinese economic influence is not all-encompassing. Japan and the US remain significantly influential on Australia's economy,[49] while the growing influence of India in two-way trade is often overlooked or underestimated.[50] However, what equally cannot be ignored is just how much Australia is benefiting from this growing economic symbiosis. In 2008, with the global financial crisis biting hard, and much of the developed world in recession, Australia's economy still managed to expand by 1.4 per cent,[51] a fact that Australian Treasurer Wayne Swan attributed directly to high Chinese growth levels.[52]

The rural and mining states of Western Australia, Queensland and South Australia have particularly benefited, with a direct link between Chinese investment and a boom in jobs, incomes, tax revenues and corporate profits. Conversely, a recent slowdown in Chinese demand for raw materials led directly to job losses in a number of important Australian sectors.[53] As one commentator noted, 'China is now as critical for Australia's economic security and prosperity as the United States is in terms of Australia's military security'.[54]

It is not surprising, therefore, that Australia has found it challenging to balance its economic and security interests. And China has not been shy in using its economic position to influence

Australian foreign policy. An early example, in 2004, was China's reaction regarding Australia's prospective position in any Sino-US conflict in the Taiwan Straits. By asserting that China could 'cease bilateral free trade talks and use its influence to lock Australia out of emerging regional bodies, economic groupings and political associations', should Australia support the US in any such conflict, Beijing evidenced a willingness to use economic pressure to secure China's interests.[55]

Some would argue that Australia's concern in this regard resulted in the ambiguous language used in the 2009 Defence White Paper, contending that Canberra was attempting to somewhat distance itself—at least in relation to Taiwan—from the overwhelming centrality of the ANZUS Treaty.[56] Regardless, the QDR's frank analysis of China's military modernisation, its open intent for a more 'distributed and adaptive US presence' and the development of the 'air-sea battle' doctrine are all explicit challenges to China's military growth. Indeed, the study by the Center for Strategic and Budgetary Assessments, mentioned earlier, states that 'air-sea battle' is 'specifically designed to deter and if necessary defeat Chinese attempts to deny the US access to the Western Pacific theatre'.[57]

That view seems generally shared by Australian commentators. The Australian Strategic Policy Institute (ASPI), an influential think-tank on defence and strategic policy, has contended that the US and Chinese militaries are now explicitly in competition, and that the 'air-sea battle' concept is a 'clear expression of plans for a future military engagement of Chinese forces'.[58] The bottom line for Australia is that the balancing of its economic and security interests is likely to become increasingly more challenging and more complex, particularly should the Sino-US relationship decline.

Burden-sharing and the ADF

The QDR also has implications for the posture and future development of the ADF. The review states that the US will 'increasingly [need to] rely on key allies and partners if it is to sustain stability and peace'.[59] As illustrated by NATO's recent experience in Libya, the share of the burden will increasingly fall on America's longstanding friends to maintain stability in their region, and to support the US footprint.[60]

Following President Obama's visit to Darwin in November 2011, Australia agreed to upgraded 'burden-sharing' by allowing 2500 US Marines to train in the north of Australia by 2016.[61] As recently as March 2012, Canberra and Washington further agreed to expand this initial arrangement, agreeing in principle to the stationing of US Global Hawk UAVs in the Cocos Islands and the upgrading of facilities at HMAS *Stirling* in Perth for use by the US Navy.[62] According to an ASPI report, joint facilities on Cocos (or Christmas) Island would provide, *inter alia*, a capability (as part of any 'air-sea battle') to blockade the Malacca or Lombok straits.[63]

Needless to say, Australia has been very careful—for a range of reasons—to differentiate between allowing US access to Australian facilities and training areas, and the 'basing' of US troops or equipment on the Australian mainland. While support for the US alliance within the Australian public sits at around 82 per cent,[64] there would be far less domestic support for any basing proposal involving combat troops or offensive platforms, not least in terms of sovereignty issues. And Canberra, already under some pressure from China over its relationship with the US, is well aware that it would be hard pressed to explain to regional states why it had agreed to the 'basing' of US forces, other than in terms of concerns about the rise of China.

Australia also faces a conundrum in relation to its force structure, where—even before the recently-announced budget cuts—it contributed a mere 1.23 per cent of the total defence spending of American allies (less than both Romania and Spain).[65] More specifically, it has been argued that *Force 2030*, the future force structure proposed in the 2009 Defence White Paper, is poorly optimised to support the alliance, notwithstanding the increased emphasis on developing a joint amphibious capability.[66] In a rather scathing attack, US Colonel John Angevine argues that by continuing to place the 'defence of Australia' as its primary focus, the ADF is dangerously and damagingly over-hedged towards conventional capabilities.[67] Australia's decision, some nine days after the publishing of the 2009 Defence White Paper, to defer $8.8 billion from the first six years of the *Force 2030* budget would have further eroded US perceptions of future ADF capabilities.[68]

Preventing retrenchment

The QDR is a clear political expression of intent from the US to remain militarily engaged in the Asia-Pacific region. This is reinforced by US foreign policy, where the intent remains to 'sustain and strengthen America's leadership in the Asia-Pacific region'.[69] This has been broadly welcomed by most regional states as a positive move. As Lee Kwan Yew said recently, 'the consensus in ASEAN is that the US remains irreplaceable'.[70]

However, there is no guarantee that the QDR is achievable. Scepticism within the US Congress led to the appointment of an independent review panel, chaired by former Clinton Administration Secretary of Defense Bill Perry. Its report, released in July 2010, is effectively an alternate QDR. And its concerns are many. It speaks of an impending 'train wreck' of block obsolescence within the US equipment fleet.[71] It believes the QDR 'may not allow the US military to fully meet the nation's commitments in Asia due to increased Chinese military capabilities' and calls for increased priority on 'defeating anti-access and area denial threats'[72] and a substantial increase in US Navy ships.[73]

With continuing domestic and international economic issues, and no guarantee of a second term for the current Administration, US predominance in the Asia-Pacific region is by no means assured. Such an outcome would have serious implications for Australia. Without the blanket of a US security presence, Australia would need to consider whether to develop a truly independent military deterrent. That would be extremely expensive and probably technologically unachievable. As a country that has never developed a 'west-coast'[74] view of the world, Australia may struggle to redefine her regional role, particularly within the Asian-centric regional organisations. In the most extreme circumstance, Australia may even be required to rethink its policy towards the ultimate deterrent, that of nuclear weapons.

As then Foreign Minister Kevin Rudd asserted in his impassioned 'case for American engagement in Asia',[75] there is a strong case for Australia to use all its diplomatic power to negate any pretext for US retrenchment. This would include being a good military ally, ensuring the sophisticated use of 'soft power' within regional institutions to develop complementary relationships, and dampening regional flashpoints (such as the South China Sea) to prevent potentially damaging conflicts. Most notably, Australia needs to realise that 'sufficient burden-sharing' by like-minded regional states will be a key driver for continued US engagement in the region.

Conclusion

The QDR was a bold document in a troubling time. It is clear from its intent that the US is not contemplating any retreat from the Asia-Pacific region. Rather, it is planning to develop a more sophisticated, more dispersed 'footprint' of capability, while maintaining a technological edge over any strategic competitor. Most importantly, the US is committed to defeating the capabilities of any who might try to deny freedom of movement in the region. In essence, the QDR is a document designed to deter potential US adversaries and reassure US allies.

In Australia's case, some would argue that the ambiguous language of the 2009 Defence White Paper smacked of 'a US ally struggling to come to terms with a quickening pace of geopolitical transformation within its region'.[76] Others would argue that by 'unflinchingly' reaffirming its commitment to ANZUS, at this critical time, Australia has made its intent very clear. If so—and as seems the political and strategic intent—Australia must put more work into balancing its increasingly divergent economic and security interests, tailor and fund its force structure to meet increasing alliance commitments, and actively facilitate and support the US 'footprint' in the region.

Critical to success will be a holistic and comprehensive whole-of-government approach. Foreign Affairs and Defence particularly will need to work more closely together, set clear aims for the Asia-Pacific region and the alliance, and then complement each other at every turn, rather than what seems to be the current 'stove-piped' approach to the forthcoming 'Australia in the Asian Century' white paper.[77] However, just as important will be realism about the expenditure required to make the alliance work, particularly in relation to force structure capabilities. Only by combining these two tools of close cooperation and realistic funding will Canberra be able to navigate the challenges it faces, enabling Australia effectively to 'walk amongst giants'.[78]

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India-China Strategic Competition[1]

Colonel Mick Ryan, AM, Australian Army

Introduction

General David Hurley recently described the emergence of the Indian and Pacific Ocean regions as a single strategic region straddled by the Southeast Asian archipelago.[2] He further predicted that this region—which is Australia's neighbourhood—would see significant security challenges in the future.[3]

For the first time in more than half a millennium, India and China—key actors in this region—are simultaneously moving upward on relative power trajectories. Over the past three decades, both have leveraged their increased participation in the global economy to increase their economic might and geostrategic influence. By 2030, they likely will have regained their global economic pre-eminence.

Both India and China have a number of domestic linguistic, ethno-religious and politico-economic fault lines that demand careful management.[4] But both possess massive manpower and scientific, industrial and technological bases, as well as large armed forces. They are also nuclear powers and have emerging space programs. Historically, they have also demonstrated the capacity and will to act as hegemons, dominating the security environment of their regions.[5]

The strategic rivalry between the US and China has assumed a central place in many of the recent debates about Australia's future national strategy and its accompanying military posture. However, the growing strategic competition between China and the world's largest democracy also has the potential to impact significantly on Australia's future economic and security well-being. It is an issue that should assume prominence in the 2013 Defence White Paper and those that follow.

The nature of the competition

There is a marked asymmetry in the mutual perceptions of India and China. India merits little attention from China and ostensibly is not taken seriously as a security threat.[6] This indifference is infuriating to India, which has many more experts on China than China has on India, although both nations possess adequate strategies for dealing with each other.[7]

For Australia, this is a unique competition, not previously faced by Australian strategic planners.[8] In this article, it will be examined in three parts. The first is a review of Indian and Chinese strategic objectives. The second is an examination of the strategic cultures of each nation, particularly identifying what they do, as opposed to what they say they will do.[9] Finally, the ability of both nations to realise their strategic goals is assessed, especially the capacity to harness their respective economic, demographic, and research and development (R&D) capabilities. Together, these three parts provide a broad view of the nature of the India-China strategic competition, from which can be drawn a number of implications and conclusions.

Strategic objectives

The view from China

China's equivalent of its 'Defence White Paper' for 2010 describes four national goals: safeguarding national sovereignty, security and interests of national development; maintaining social harmony and stability; accelerating the modernisation of national defence and the armed forces; and maintaining world peace and stability.[10] The document also notes that China continues to implement the military strategy of 'active defence', while maintaining a no-first-use nuclear weapons policy. In essence, China's stated defence strategy is focused on fostering a security environment conducive to China's continuing development.

In the view of many Chinese analysts, India is acknowledged as one of the world's four great civilisations. The consensual view would be that India, once a glorious empire, is now seeking to reclaim its rightful place in Asia and the world after being exploited by imperialism for hundreds of years and then being held back in more recent decades by wrong-headed economic policies. Now, at the dawn of a new century, the economy has been unleashed and its citizens are eager to achieve their country's full potential. Accordingly, India is seen as representing a looming strategic threat to China, albeit not one that provokes the high level of concern that the US or Japan does.[11]

At the governmental level, China continues to allocate India a low priority in its foreign relations and ostensibly does not take India seriously.[12] Underlying this attitude is China's confidence about its own capabilities and its low opinion of India's. The Chinese take pride in their economic reforms and the resulting dramatic growth; they look down on the Indians for their slower growth and continuing economic problems. The one exception is Chinese admiration of India's IT industry, especially its software.[13]

China sees itself as the rightful pre-eminent power in Asia, and India as its major medium- to long-term competitor. In the view of many Chinese strategists, India possesses an ambitious, belligerent and expansionist strategic culture. Of course, there are less extreme views of India. But few, if any, of China's strategic thinkers seem to hold warm or positive views of India. Moreover, Chinese analysts tend to hold *realpolitik* views of the world and view a number of China's neighbours with wariness if not outright suspicion.[14]

China's military posture continues to be overwhelmingly focused on Taiwan and the US.[15] While some Chinese military analysts have recently started paying more attention to India, their ideas do not appear to have had a significant impact on Chinese military planning or policy. China's relationship with Pakistan functions as a critical impediment to the normalisation of China-India ties. While China has indicated a willingness to reduce its military assistance to Pakistan, Chinese officials have made clear that they have no intention of cutting off Pakistan and that it remains a valued ally.[16] Chinese activities in Myanmar exacerbate this problem, with some in India seeing these as part of a pattern of strategic encirclement.[17]

Chinese strategy towards India has five components. First, a continued focus on maintaining a high economic growth rate that generates a larger amount of resources for political-military purposes. Second, a feigned indifference towards India, coupled with denial that India is a potential rival. Third, minimising direct conventional military competition with India, while subtly treating India as a significant nuclear threat. Fourth, maintaining an enduring relationship

with Pakistan while avoiding encouragement of Pakistan's revisionist policies towards India. And finally, bolstering engagement with Southeast Asian states.[18]

This suggests that China does see India as a potential challenger. India's emerging economic strength and location make it relevant to China's long-term security in several ways. India could become a major regional rival for influence in Central and Southeast Asia. India also has a large (and growing) navy, which dominates the sea lanes through which passes most of the oil supplies vital for China's energy security. This is a key asymmetry, as India can affect China's energy supplies but China cannot affect India's supplies to the same degree. Finally, India's location makes it an ideal location for any 'containment' of China by the US in concert with other allies.[19]

The view from India

India has a multi-dimensional foreign policy, evidencing several strategic themes in India's search for its place in the emerging international balance of power, which can be summarised as follows:

   a. Promote economic growth targets and ambitions;[20]
   b. Achieve energy security to guarantee economic growth;[21]
   c. Foster a peaceful regional periphery to accelerate domestic economic development, which includes an emphasis on building networks of inter-connectivity, trade and investment;[22]
   d. Address the challenge of a rising China, which remains a pre-eminent strategic preoccupation for most Indian strategists;
   e. Gain the recognition and respect due a nuclear weapons state, while remaining steadfast in its commitment to the goal of global, universal and non-discriminatory nuclear disarmament;[23] and
   f. Confirm India's due place in the emerging international balance of power, as one of three great powers.

Although China does not figure prominently as a classical enemy of India, a sense of rivalry with China has emerged in recent decades. In antiquity, the Himalayan wall stood in the way of invasions from the northeast. And early Chinese empires were oriented to the great rivers and agricultural resources of central and eastern China, and simply did not have reasons or energy to invade India, nor did they ever threaten to colonise India.[24]

India's core perception of China is that it does not present a clear cut, short-term military threat. But the longer term situation is less certain. Indian analysts believe that over time, China's growing economic influence threatens to fundamentally alter the strategic balance in Asia. They see China as a model to be emulated and a challenge to be balanced. Therefore, China has to be viewed as a potential threat or challenge to Indian interests in the long run.[25]

A second perception is that certain features of China's strategic interests differ from India's, and that the mismatch poses security problems for India. Key among these are the unresolved border dispute between the two and Chinese military assistance to Pakistan. Indian strategic analysts have generally not found Chinese arguments convincing that the flow of assistance to Pakistan is part of regular state-to-state relations.[26]

India sees these actions as China's effort to undercut the natural Indian dominance of South Asia. This forces India to expend additional resources to maintain its pre-eminence within the subcontinent, rather than using them to expand its sphere of influence in areas of greater significance to China.[27] A final perception is the potential for China not to acquiesce to the rise of India as a power having reach beyond South Asia (and eventually as a global power).[28]

Nevertheless, concerns about China are not overplayed in Indian strategic culture. Rather, India's sense of civilisation and antiquity is seen as at least equal (if not superior) to China's, and India has been prudent in seeking a non-confrontational relationship with China, in which trade channels and other forms of exchange are growing and being used to limit China's influence on Pakistan.[29]

Overall, the current Indian strategy for dealing with China is subtle and seemingly has four multi-dimensional elements.[30] First, to avoid picking rhetorical, political or military fights. Second, to improve relations in areas where rapid improvement is possible, such as bilateral trade and fighting terrorism. Third, to protect itself against the worst should relations sour, through such avenues as nuclear deterrence, conventional force modernisation and the development of leading-edge technologies in fields such as IT, aviation, biotechnology and advanced materials manufacturing. Finally, to revitalise relations with peripheral states in Southeast Asia and East Asia.

Strategic cultures

Strategic culture is the context that surrounds and gives meaning to strategic behaviour.[31] Colin Gray asserts that understanding strategic culture can provide an improved capacity for understanding enduring policy motivations and making predictions, as well as better understanding the meaning of events in the assessment of others.[32]

China

Chinese strategic culture is a critical influence not only on why China uses force, but where and against whom.[33] The idea that contemporary Chinese international relations have been heavily influenced by an ancient and enduring civilisation is prevalent.[34] Confucianism provides many of the essential elements in Chinese military thought and conduct of international relations. Confucian thought also has much influence on China's non-expansionist and defensive-oriented strategic culture. However, more recent Chinese history has also played a critical role. Historical events during the 19th and 20th centuries left lasting impressions on the Chinese people, and continue to define China's modern strategic culture. The narrative of the 'century of humiliation' at the hands of imperialist powers is central to Chinese nationalism today.[35]

The manifestation of ancient and more recent history is one of several strands defining Chinese strategic culture and behaviour. Another is the linked concept of surprise and deception. While this can be traced to the writings of Sun Tzu, it is given modern form by China's use of 'trump weapons', which seek to undermine an enemy's ability to conduct combat operations.[36] A further strand has been a shift towards the use of minimum force, if violence is necessary. Linked to the concept of 'limited war', evidence of this can be seen in the 1962 Sino-India war and the 1979 Sino-Vietnam war. It also has an antecedent in Sun Tzu, where long protracted wars are described as harmful to the state.

Yet another strand of Chinese strategic culture is the centrality of the armed forces in society and national security planning.[37] A final strand is the perception that threats to China's national security are very real and domestic threats are as dangerous as foreign threats, with national unification being a traditional core strategic cultural value.[38] Together, these strands have resulted in a strategic culture that blends Confucian/Sun Tzu thought and *realpolitik*. They all exist in the current Chinese calculation of security strategy, however, they are secondary to the ongoing pursuit of national development and material strength.[39]

India

India's strategic culture is also rooted in its ancient cultural and religious heritage. A crucial self perception is that India is a state of major potential and future international importance. It has a great power's world view, even if its international role is currently modest. India sees its interests and values being best served by a multipolar world order in the future.[40]

An element of India's grand strategic thinking is the belief that it must maintain a value (or principle) of strategic autonomy, which it has pursued previously with its policy of international non-alignment.[41] India's founding and subsequent leadership of the Non Aligned Movement came from a desire to avoid the East-West ideological confrontation of the Cold War, and led it to pursue alternative interests that strictly avoided any perceived tilt in either direction. As Prime Minister Jawaharlal Nehru asserted in his speech to the 1955 Asian-African Conference, marking the Non Aligned Movement's founding, 'every pact has brought insecurity and not security to the countries which have entered into them'.[42]

However, it is foreseeable that these traits may be subject to modification in the coming decades. This is because of the emergence of generational changes in Indian leadership less steeped in tradition. It is may also be the result of the rise of new business entrepreneurs in high technology spheres, who operate with a less parochial and more globally oriented paradigm, as well as the impetus of regional political leaders and the upward mobility of lower stratas of society less easily socialised in a 'standard' strategic outlook.[43]

India's strategic culture has drawn selectively from various threads of its past civilisation values and larger political culture. The dominant 'war and peace' elements of India's strategic culture lean toward *realpolitik*, and away from the pacifist themes that gained prominence, albeit temporarily, as a result of publicity about Mahatma Gandhi's influence on the nationalist movement. But both sources of inspiration—a readiness for war and pacifist inclinations—have validity in India's modern-day strategic culture.[44]

The application of national resources

As Bernard Brodie once noted, 'strategy wears a dollar sign',[45] reinforcing that economic growth will determine how much each nation may be able to invest in the future development of their military forces. It is also axiomatic that the effectiveness of this financial investment will be heavily influenced by demographic trends (such as the ability of the Indian and Chinese military to access personnel in the required quality and quantity)[46] and the impact of R&D.

Economic trends

The world's economic balance of power is shifting rapidly, accelerated by the recent and ongoing global financial crisis. China remains on a path to overtake the US as the world's largest economic power within a generation, and India will join both as a global leader by mid century.[47] China and India have sustained the world's highest annual GDP growth rates over the past decade; 9 per cent for China and 6-7 per cent for India.

The two countries have also been among the world's most successful in weathering the challenges of the current global financial crisis. China has accomplished this through a combination of a large government stimulus program and an effective infrastructure-building program. India's similarly successful efforts in sustaining rapid growth have been due to its lesser dependence on exports and an expansion of domestic demand.[48]

There are a wide variety of projections of GDP for India and China for 2025, 2030 and even 2050. A recent RAND study, which examined 27 different economic studies of Indian and Chinese GDP forecasts for 2025 found significant disparities. The range of forecasts for China was US$13-31 trillion; for India, it was US$5-12 trillion.[49] Looking further out, Goldman Sachs has predicted that China's GDP will be US$70 trillion by 2050.[50]

The absolute difference between their respective GDPs is likely to increase in China's favour, because of the differences in starting points. China's 2010 GDP of US$5.8 trillion[51] was about three times larger than India's.[52] By 2030, the difference between their respective GDPs is expected to be as much as US$19 trillion in China's favour.[53]

When reviewing these projections, it must be kept in mind that any number of variables could impact on forecast growth rates. For example, the reduction in China's annual growth rate over the longer term, from its current 9-10 per cent per annum, may lead to societal tensions because of a fall-off in jobs. Conversely, growth may exceed expectations, noting that actual growth in the period 2003-08 was higher than predicted for both China and India.[54]

Military spending trends

It is difficult to obtain reliable data on defence procurement from the official budgets of both countries, although the difficulties are much more acute in relation to China. Additionally, China's published military budget does not include major categories of expenditure, such as foreign procurement.[55] According to information in the Stockholm International Peace Research Institute databases on world military expenditure, China has on average spent 1.97 per cent of GDP on defence between 1990 and 2010, whereas India spent 2.8 per cent.[56]

A recent RAND report gives the 'best' estimate for India's defence spending in 2025 at US$277 billion (in 2009 dollars); the corresponding estimate for China is US$1,258 billion.[57] However, given the data on likely GDP for China—and historical spending on defence of 2 per cent of GDP—a mid-range figure for China of US$440 billion in 2030 seems more likely. If the highest and lowest GDP estimates are employed, China's expenditure could range from a low of US$260 billion to a high of US$620 billion. The same estimates for India suggest a mid-range figure of US$250 billion, with a low of US$140 billion and a high of US$336 billion.

Demographic trends

China and India are the only countries in the world with populations of more than 1 billion. According to US Census Bureau's estimates, there are now 1.189 billion people in India and 1.336 billion in China.[58] India's population is expected to grow to 1.395 billion by 2025, at which point it will surpass China, growing to 1.460 billion by 2030 and 1.656 billion by 2050.[59] In contrast, China's population is expected to decline in real terms from 2026.

Nevertheless, China is likely to continue having a higher GDP per capita than India, which matters more on the world stage than population numbers.[60] In the long term, however, China's prospects may be hindered by its demographics. An ageing population, without an established welfare safety net, will create demands for new types of services (especially health care), reducing the disposable income of the working population through wealth transfers to the elderly and laying claim to the large national savings pool that China has built up during the boom years.[61]

Both countries have, and will continue to have, very large military-age populations and are unlikely to face a shortage of people available for military service. However, underlying social and economic changes may change the internal culture of the people in the military and, by extension, the militaries themselves. At present, most of the conscripts in the Chinese People's Liberation Army (PLA) are the only children in their families and their representation has been increasing, with the entry of the one-child policy cohorts into service, from 20.6 per cent in 1996 to 52.4 per cent in 2006.[62] Officer re-enlistments for only-child personnel are likely to be affected by greater economic opportunity and the need to provide for elderly parents.

India's military will not face the same fertility-induced social problems as China, as India's fertility rate is still above replacement level. However, India will face problems similar to China in officer and highly technical cadre accession and retention, as the broader economy will be more strongly competing with the military for talent. This may even be more acute in India, because the higher levels of income disparity will shrink the available pool of highly qualified candidates, thus increasing the competition and raising the wages that the military will have to offer in order to attract top talent necessary for a military proficient in the full spectrum of warfare.[63]

R&D trends

Scientific research, invention and innovation are key drivers of economic growth, and underpin the development of leading-edge military capabilities. Both China and India have ambitious indigenous research R&D programs.[64]

The Chinese defence R&D apparatus has been undergoing a far-reaching overhaul to overcome serious organisational, managerial and operational problems that have crippled its ability to conduct high-quality work. Developing a robust defence R&D system is a top priority in China's '2006–2020 Defence Science and Technology Development Plan'.[65] China's defence industry, in conjunction with the PLA, has drawn up plans to steer weapons, technological and industrial development, with the aim of attaining the technological level of first-tier global military powers within the next 15 years.[66]

China has identified five areas requiring urgent involvement and funding: material design and preparation; manufacturing in extreme environmental conditions; aeronautic and astronautic mechanics; information technology development; and nanotechnology research. In nanotechnology, China has already progressed from virtually no research or funding in 2002 to being a close second to the US in total government investment.[67]

India's policy is that it should produce 70 per cent of its military equipment domestically by the end of this decade, rather than the current 30 per cent. In January 2011, India took an important step toward realising this aspiration by releasing its first-ever 'Defence Production Policy'.[68] This policy is significant in that it articulates an agenda for supporting a domestic defence-industrial base, rather than couching these intentions in dense procurement documents, as had previously been the case.[69]

The policy is intended to serve as a guide for India to achieve substantive self-reliance in the design, development and production of equipment, weapons systems and platforms; create conditions conducive to private industry taking a more active role; and broaden the defence R&D base.[70] India is working in various areas of military technology which include aeronautics, armaments, combat vehicles, electronics, instrumentation engineering systems, missiles, materials, naval systems, advanced computing, simulation and life sciences.[71]

To realise their R&D objectives, both China and India are increasing their allocation of financial and human resources. China is the third-largest global R&D spender after the US and Japan. Its percentage of GDP spent on R&D has grown annually by 18 per cent since 2000, from 0.25 per cent in 1996 to around 1.01 per cent in 2006. China aims to increase the percentage of GDP spent on R&D to 2.5 per cent by 2020,[72] which is important because civilian research can often have important military applications. In India, military R&D has absorbed approximately 6.4 per cent of defence expenditure over the period 2003-11.[73] It too has a stated goal of increasing the percentage of GDP spent on R&D to 2.5 per cent, although its timeframe is by 2025.[74]

The implications

India-China strategic competition will manifest in many different ways over the coming decades. It will affect not only the dynamic of relations in the immediate Indo-Pacific region, which includes Australia, but also that with key regional actors, notably the US.

Despite fitful improvements, it can be expected that China-India relations will remain competitive. Neither is comfortable with the rise of the other. They also both wish to emerge as major powers beyond Asia, so they are likely to continue competing for leadership in international organisations. The potential for new 'north-south' political, economic and security institutions that challenge extant international organisations is high, given that the existing situation is seen as underpinning Western global geopolitical preferences. Both will likely seek to ensure they are prominent in any such new organisations to prevent dominance by the other.

The continued expansion of the strength and reach of their maritime capabilities will also provide both with further reason to be wary of the other's intentions.[75] Growing concerns over maritime security may create opportunities for multinational cooperation in protecting critical sea lanes. But mutual suspicions regarding the intentions behind naval build-ups by potential

regional rivals or the establishment of alliances that exclude key players would undermine efforts for cooperation. While there is a strong case for cooperation in regional security, distrust is likely to continue inhibiting the translation of this security interdependence into effective and practical cooperative measures.

In addition to competition for influence in Central and South Asia, the relationship is likely to remain very competitive in Southeast Asia. In January 2001, India signed defence pacts with Indonesia and Vietnam. This was part of India's attempt to woo the nations of Southeast Asia under the 'Look East' policy started in the 1990s. A number of territorial disputes also dog the relationship. China still does not accept Sikkim's incorporation into India. China has also held firm on its hold of Arunachal Pradesh.[76] The Chinese also remain concerned about India exploiting the Tibet issue, because they have not completely succeeded in suppressing Tibetan dissent or legitimising their rule.[77]

A localised conflict between China and India—either on their shared border or on the high seas—remains a possibility, with India likely to be able to generate local superiority with conventional forces. Both nations have modernised their doctrine and the conduct of joint operations. China's military has been working for several years to develop the capability to conduct integrated joint operations, a concept that China believes is essential to modern warfare. India is somewhat further behind. China is considerably progressed in developing a range of space-based capabilities, launch capacity, counter-space capabilities and cyber capabilities. India, while also recognising the importance of space-based and cyber capabilities, has developed an indigenous but currently more limited capability.

Regardless of their strategic aspirations, the magnitude of the Chinese economy will ensure an overwhelming superiority in China's favour over India in economic and military realms, at least in the medium term. However, beyond 2030, the Indian economy will start to close the gap as its population increases and its economic growth rate accelerates and potentially outstrips that of China. China will be keen to exploit India's vast market, whose existing middle class of 350 million is likely to double sometime after 2030. Other than China, there will be no comparable market anywhere in the world.

Given China's propensity to maintain a trade balance in its own favour, there is potential for China to gain a hold over India in the economic relationship.[78] While mutual trade is increasing, and is forecast to continue beyond 2030, this has not neutralised the military competition. Both nations continue to modernise their military organisations, with at least part of the rationale (although not the primary one for either) being the need to balance each other in South and Southeast Asia.

In terms of energy competition, China has already secured areas for exploration and development in Central America, Africa, Southeast Asia and Latin America. India lags behind significantly in this regard. India will need to compete vigorously with China to assure itself of sufficient energy supplies through the 21st century. Concerns about assuring future access to energy supplies will foster increased naval competition. Despite the growing number of pipeline projects, China will remain dependent on sea transfers of energy from suppliers in the Middle East.

This raises concerns about the future of maritime security from the Persian Gulf to East and Southeast Asia. India's geography places it astride the key sea lines of communication that are vital for the shipment of Chinese energy resources. This strategic advantage is likely to be

addressed by China through diversification of energy suppliers and routes (using both land and sea), as well as further improvements in the capacity of the PLA Navy to deploy away from its home areas and conduct sustained maritime security (and, if needs be, combat) operations.

Areas for further examination

As the 2013 Defence White Paper is developed, there are several questions that require further assessment. These include:

a. Despite the magnitude of China's lead over India in economic and military fields by 2030, is it likely that India may overtake China at some point beyond 2030 and what would be the implications for Australia?

b. What is the impact of India-China competition on the role of alliances in South and East Asia out to 2030 and the potential for new alliance arrangements fostered by India, China or the US?

c. If the US pursues a more aggressive policy of competition with China in the future, what would be the likely reaction of India and the flow-on effects for Australia?

d. What would be the impact of this competition on other key regional actors, notably Japan, South Korea and Indonesia?

e. How will India-China competition impact on developments in high technology, such at IT, biotechnology and nanotechnology, and what would be the impact on Australia's military strategy given its stated aim to retain a science and technology edge?[79]

f. What impact would the creation of any new Asian-based or 'north-south' economic, political or security institutions have on existing international organisations and the global and regional security environment?

Conclusion

By 2030, the global economy is likely to have regained its momentum, and the outlines of a new geopolitical order will be much clearer. China is likely to have assumed additional global responsibilities. India, while not a global player of the magnitude of China, is likely to be continuing to move in that direction, increasingly broadening its outlook and engagement. Neither country is now, or will be in 2030, entirely comfortable with the rise of the other.[80]

India's improving economy has had a major impact on its aspirations to be a global power. It views itself as an emerging economic power that will soon become the world's most populous nation. China's opposition to India's aspirations and their rivalry in South Asia will affect the tone of the relationship out to 2030. While economic cooperation is growing between these two giants, it is likely by 2030 that there will be significant economic competition, especially as India industrialises and becomes a greater source of a cheap labour pool for the world's corporations.

Short and medium-term stresses have already appeared in the India–China relationship.[81] This will have an impact on Australia's enduring security interests[82] and, indeed, those of every nation in the Indo-Pacific region. Understanding the dimensions and impacts of the India-China strategic competition is critical as Australia undertakes the strategic planning to achieve its national objectives over the coming decades.

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NOTES

1. This article is a substantially abridged and updated version of a paper titled 'India-China in 2030: A Net Assessment of the Competition Between Two Rising Powers', dated 16 December 2011, prepared by the author while a student at the School of Advanced International Studies (SAIS), John Hopkins University, Washington DC. It is published in the *ADF Journal* with kind permission of SAIS. Interested readers may obtain a copy of the original paper, which is a comprehensive assessment of 27K words, by emailing Editor *ADF Journal* at publications@defence.adc.edu.au

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14. Scobell, 'Cult of Defence and Great Power Dreams', p. 342.

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20. Nirupama Rao, 'Key Priorities for India's Foreign Policy', speech given at the International Institute of Strategic Studies, London, 27 June 2011.

21. Pant, *Indian Foreign Policy in a Unipolar World*, p. 19.

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52. World Bank data.

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The Cyber Threat to Australia[1]

Brigadier Marcus Thompson, Australian Army

Introduction

Australia faces a burgeoning security threat in cyberspace, where readily available and inexpensive capabilities can generate an asymmetric effect at a fraction of the cost and risk of traditional methods. According to the Australian Bureau of Statistics, there were 10.4 million active Internet subscribers in Australia in December 2010.[2] Further, almost a third of the world's population uses the Internet—and countless more are touched by it in their daily lives.[3] As noted by President Obama, 'these technologies can strengthen us all' as the full benefits of the digital economy are realised.[4]

When used improperly, however, the Internet is a prodigious tool for a weaker party to attack a stronger conventional foe.[5] A key attraction for malicious threat actors is that cyber attacks can be conducted in an inexpensive and low risk manner, and attribution is particularly challenging 'due to the maze-like structure of the Internet'.[6] This reality was acknowledged in the Australian Government's 2009 'Cyber Security Strategy', which recognised cyber security as one of Australia's top national security priorities, following a significant increase in the scale and sophistication of malicious activities.[7]

Cyberspace is a transnational medium and 'international acts of cyber conflict are intricately enmeshed with cyber crime, cyber security, cyber terrorism and cyber espionage'.[8] During 2010, computer security provider Symantec recorded over 3 billion attacks, using more than 286 million variants of malicious software known as 'malware'.[9] While attributing these activities to a particular individual, organisation or nation state is extremely difficult, there is much public discussion regarding highly-developed state-sponsored cyber capabilities in nations such as China and Russia.

The increasing dependence of the Australian Defence Organisation on cyber capabilities increases the opportunity for threat actors to generate an asymmetric effect against it. The risks are highlighted by Martin Libicki, who argues that 'as long as nations rely on computer networks as a foundation for military and economic power, and as long as such computer networks are accessible to the outside, they are at risk'.[10] The cyber threat to Defence was acknowledged in the 2009 *Defence White Paper*, which announced investment in a 'comprehensive range of expanded and new capabilities',[11] including the establishment of the Cyber Security Operations Centre (CSOC) within the Defence Signals Directorate (DSD).

Cyber attacks against Australian interests gained attention during 2010 with the public opening of the CSOC, and an unrelated exposé by the ABC regarding China's prosecution of a Shanghai-based senior executive of Rio Tinto. The ABC's *Four Corners* program contended that China has an advanced cyber capability that penetrated Rio Tinto's computer networks to obtain confidential information that was then used against the individual in question. This particular event illustrated that the cyber threat is much broader than the ADF, the national security community or even the Commonwealth Government, as it also encompasses commercial entities and public utilities.

The aim of this article is to assess the cyber security threat to Australia and particularly Defence. It defines the cyber threat environment and analyses what the cyber threat may be able to achieve. It then assesses Australia's vulnerabilities and the implications, before analysing the policy responses that Defence should seek to influence.

Technology and the globalisation of security

The Internet was not originally designed with security as a priority; rather, it was intended to facilitate the rapid transfer and free flow of large amounts of information between trusted entities. This fundamental characteristic of the Internet greatly assists malicious threat actors and complicates the task of cyber defence.[12] In this environment, activists, organised crime, commercial interests, terrorists and state-sponsored entities can use the Internet to conduct malicious activities in the contemporary medium known as 'cyberspace'.

Cyberspace is a term with many definitions. First used in 1984 in William Gibson's novel, *Neuromancer*, one recent study discovered 28 discrete definitions of cyberspace.[13] Collectively, they describe cyberspace as a man-made environment of electronic information network connections with global reach. It is important to note that cyberspace consists of technical system components, content and application components, people and social components, and a governance component.[14] A further important characteristic of cyberspace is that it is always growing and its global reach continues to expand.

It is the expanding global reach and the low cost of entry and access that makes cyberspace a truly globalised or transnational concern for law enforcement and national security agencies alike. The international and multi-jurisdictional nature of cyberspace limits the ability of nation states to restrict malicious Internet activity, as the law enforcement, intelligence and regulatory agencies of nation states are typically bound to their particular jurisdiction, which criminals can exploit to their advantage.[15] Identities can be easily and readily concealed or fabricated in cyberspace, and an astute attacker can make it look as if another entity was responsible for an attack.[16]

The ability of users to conceal their identity and location makes it extremely difficult to attribute any hostile actions to a particular user or nation state. Yet the potential for a limited number of actions to generate a disproportionate impact is very high.[17] Computer security company Symantec has reported that the volume and sophistication of malicious activity increased substantially in 2010.[18] Sophisticated techniques, such as electronic jamming, electronic deception and suppression, have been 'used to disrupt information acquisition and transfer, or … sabotage information processing and utilization'.[19] Many of these techniques are not characteristic of amateur hackers and illustrate the magnitude of the threat posed by both nation states and sophisticated non-state actors.

Various forms of cyber attacks occur on the Internet, ranging from virus infections to denial-of-access.[20] Cyber attack may be thought of as hacking with the intent to destroy or disrupt information. This could include the physical destruction of a computer, the deleting or re-writing of files, or causing a network or service to go off-line. Cyber reconnaissance and espionage are tools that have been successfully used by curious hackers, commercial interests and state-sponsored espionage agencies to gain access to information that is not publicly available.[21]

Similarly, denial-of-service attacks have become increasingly common. These are designed to disable networks by sending multiple simultaneous requests and messages from a large number of compromised computers, collectively known as a 'botnet'.[22] A particularly high-profile attack occurred in Australia in February 2010, when an activist group known as Anonymous caused severe disruption to then Prime Minister Kevin Rudd's parliamentary Internet site by bombarding it with 7.5 million hits per second for three days.[23]

While it could be argued that this action merely constituted a nuisance, the apparent inability of network managers to stop the effects of this attack demonstrated its potency. Botnets are available on the black market, with Symantec noting an advertisement in 2010 that offered access to 10,000 botnets for US$15.[24] 'Rustock', the largest botnet observed by Symantec during 2010, was reported to have had well over 1 million compromised computers under its control.[25]

The industrialisation of on-line crime has broadened to include malware not readily detected by traditional anti-virus programs, which is also available for sale on the black market.[26] All an attacker requires is the skills and patience to work the malware from person-to-person until enough machines have been compromised to achieve the desired outcome.[27] The distinction between cyber crime, cyber reconnaissance, cyber espionage and cyber attack is not always clear, as the tools and techniques used in each method can be very similar, further complicating the task of law enforcement and national security agencies.

Types of threats

There are a number of publicly-available reports regarding attacks against the computers and networks of governmental agencies and large corporations.[28] This was recently illustrated when the outgoing CEO of Woodside Petroleum described how his company and other major resource companies were under increased threat of hacking and other malicious cyber activity emanating from China and other countries, and that Woodside Petroleum had 'been attacked from everywhere'.[29]

Given the importance of the mining sector to Australia's economy, this type of industrial espionage illustrates that cyber security is not only an issue of national security but an issue of economic security and national prosperity.[30] Australia's 'Cyber Security Strategy' noted that in 2008, Australia had the fifth highest level of malware infections worldwide.[31] Cyber threats are becoming increasingly pervasive and rapidly becoming the priority means of obtaining economic and technical information of a commercially-sensitive or confidential nature, typically the intellectual property of a competitor or an organisation that would otherwise not want the information freely available in the public domain.

While hackers, industrial espionage and terrorist use of cyberspace attract much media and academic commentary, there is significantly less public commentary regarding the 'constant ongoing background level of cyber attack as part of a holistic, coordinated programme to achieve the political, economic and social aims of nation states'.[32] Continuous attacks on information networks which seek to compromise, steal, change or completely destroy information, especially by nation states, leave the US and her allies vulnerable to the loss of their military technological advantage.[33]

The Australian Security Intelligence Organisation noted this particular threat in its 2010 report to Parliament, stating that:

> Cyber espionage is an emerging issue, requiring considerable attention across Government to address both the criminal and public protection aspects, as well as counter-espionage and other defence elements.[34]

The potential effects of the use of cyberspace to conduct either state-based or commercial espionage were clearly illustrated between 2003 and 2006, when American defence contractors were the subject of a series of coordinated cyber attacks and data theft.[35] The attacks, dubbed 'Titan Rain', specifically targeted US defence contractors and aerospace installations, including Sandia National Laboratories, Lockheed Martin, Redstone Arsenal, the Department of Defense and NASA, to gather sensitive military data, including technical design details of the F-35 Joint Strike Fighter.[36] The UK also reported being attacked by the Titan Rain hackers.[37]

As the propagation of cyber technologies continues and the tools available on the black market become sufficient for a serious cyber attack, the sophistication of non-state threats is likely to continue to grow.[38] The nature of computer networks means that sophisticated cyber threats may often not be identified until after network penetration has occurred and stolen data has already been sent to the entity responsible for the attack.[39] However, the scale, focus and complexity of the overall campaign directed against the US and a number of other countries implies the presence of state sponsorship or support.[40]

While attribution of cyber attacks is problematic, the types of activities conducted and the lack of monetary value of data stolen is a powerful indicator that hacker groups sponsored by, or affiliated with, sovereign states are carrying out cyber attacks in support of the interests of those states.[41] Cyber criminals are more likely to steal data that holds monetary value, such as credit card numbers or bank account details. It is the known theft of technical military information and government policy documents, holding little or no inherent monetary value to criminals, that provides the strongest evidence of state-sponsored malicious use of cyberspace.[42]

Threats typically manifest in the form of 'script kiddies', who are amateur hackers seeking thrills and bragging rights; 'hacktivists', who are activists using cyberspace as a means to make a point or inflict reputational damage; organised crime, which seeks monetary advantage; commercial entities, which employ industrial espionage to achieve a commercial advantage; and state-sponsored entities, seeking strategic, economic, political or military advantage.

Terrorists groups can also use cyberspace for recruiting, fund-raising, propaganda, intelligence collection and to plan and conduct terrorist activities.[43] Some Islamist hackers have promoted the concept of 'electronic jihad', and encouraged sympathisers to attack 'enemy' web sites.[44] However, it is important to note that cyber terrorism, whereby terrorists conduct large-scale computer network attacks, has largely failed to materialise.[45] This could possibly be explained by the significantly greater attention and potential impact of spectacular physical attacks.

This broad range of threat actors generates a diverse and complex challenge for Australian law enforcement and national security agencies.[46] The constantly expanding networks of computers and information systems operated by individuals, governments and corporations are all vulnerable to malicious activity in cyberspace. It is remarkable to consider that the

administrators of target networks may not be aware that their networks were or are the subject of malicious activity until well after the event, if at all. Even if they do become aware of such activity, attributing it to a particular threat actor is extremely difficult.

What the threat can achieve

The Australian Government's 'Cyber Security Strategy' states that attacks on critical government and private sector systems are being actively contemplated against Australian interests.[47] Cyber threats may arise from either intentional acts or accidents, may come from either internal or external sources, and may be directed at the technical system components, content and application components, people and social components, or the governance component. Despite the variety of possible threats, it is the technical components that typically attract the most attention, due to the probable presence of design flaws and the resultant vulnerability to attacks.

Civilian control networks are particularly vulnerable because of the inherently open nature of supervisory control and data acquisition systems, which are the devices and networks used to control energy grids, water valves and financial transactions. This vulnerability is heightened for nations such as Australia and the US, where much of the communication, manufacturing, water, transportation and energy infrastructure is owned by the private sector, as opposed to others where critical infrastructure is predominantly government-owned.[48] An increasing global reliance on communication-based technology creates significant vulnerabilities to cyber intrusions, and the proliferation of laptops, wireless networks, and smart phones, coupled with the desire for immediate access to information, generates significant opportunities for amateur hackers, criminals or state-sponsored entities.

A theoretical worst-case scenario for a major cyber attack was presented in a 2010 publication by Clarke and Knake, who postulated the catastrophic effects of concurrent failures of US military computer networks, control systems for oil refineries and chemical plants, air traffic control systems and multiple power grids.[49] While this scenario may seem more science-fiction than reality, the potential consequences of such an attack generate a considerable risk management challenge, regardless of the likelihood. It becomes even more concerning when one considers that the success of a single cyber attack may encourage others to launch independent or complementary 'copy-cat' attacks.

What does it mean to be secure?

From an Australian Government perspective, cyber security is defined as 'measures relating to the confidentiality, availability and integrity of information that is processed, stored and communicated by electronic or similar means'.[50] This implies that cyber security has a binary nature, where the confidentiality, availability and integrity of information is either retained or not. In an environment where it is not possible to anticipate, prevent or deny all cyber threats, it is important that an organisation's information environment be able to withstand an attack and maintain business continuity such that a realised threat does not exert a lasting negative effect on the organisation.

Where the advantage lies with a pervasive, persistent and constantly adapting threat, it is doubtful that a fully secure, impregnable computer network can actually be achieved. The US's Computer Emergency Response Team has argued that no amount of protection can

make an Internet-facing system invulnerable to attack, despite the best efforts of security practitioners.[51] Remote electronic attacks on computer networks could be prevented, or perhaps merely minimised, if the computer networks were not connected to anyone or anything else, including the Internet.

However, given that the very term 'network' implies multiple and intersecting connections, the utility of such a 'network' would be questionable. Also, depending on the size and nature of a network, full security of an unbounded Internet-facing network against all anticipated and unanticipated cyber events would be very expensive and potentially cost prohibitive. It therefore seems far more appropriate to emphasise resistance, reliability and the ability to recover from an attack as essential aspects of security. These functions are fundamental characteristics of 'resilience', which is considered a more appropriate objective when considering cyber security measures, including the ability to recover quickly following an attack or intrusion.

The seemingly irreversible dependence of modern societies on Internet-based systems is the crux of the cyber security challenge.[52] This dependence is increasing every year as the governments of Western nations continue to drive more of their citizens' and government's business on-line, further reinforcing the reality that vulnerabilities arise as dependencies increase.[53] The imminent roll-out of the National Broadband Network within Australia is likely to further increase the dependence of Australians on cyberspace, potentially leaving information assets precariously exposed to cyber threats. The relationship between dependencies and vulnerabilities is neatly articulated by Libicki's argument that 'organisations are vulnerable to cyber attack only to the extent that they want to be'.[54]

Vulnerabilities within Defence

The increasing dependence of Australian society on cyberspace is mirrored in Defence, which increases the opportunity for threat actors to generate an asymmetric effect against the ADF. However, there is a difference between the perspectives of military and commercial organisations regarding cyber security and resilience. Military organisations will typically require full access to 'normal' systems following a cyber attack, whereas commercial organisations are more likely to focus on business continuity, profit and market share.

Similarly, attribution for an attack is not so important from a commercial perspective but far more important from a military or national security perspective, not least in relation to an appropriate response. However, as military and civilian information and communications technology typically use the same hardware and software, they typically share the same vulnerabilities.[55] Increasing the complexity of military networks by using bespoke systems may diminish the frequency of surprises. But it may also make any surprises all the more unexpected when they inevitably occur.[56]

Classified military networks that are not connected to the Internet are also potentially vulnerable to cyber attack. This vulnerability was highlighted in June 2010 when it became apparent that a cyber virus named 'Stuxnet' had been used to target computer systems at the Iranian nuclear facility at Natanz.[57] What made this attack particularly significant is that the targeted systems were not connected to the Internet, and penetration of the virus was achieved through the use of intermediary devices, such as memory sticks. While the origins of Stuxnet have not been publicly attributed to a particular nation state or group, the complexity and sophistication of the virus suggest nation-state involvement.

Since then, Stuxnet is reported to have infected over 60,000 computers in Iran, India, Indonesia, China, Azerbaijan, South Korea, Malaysia, the US, UK, Australia, Finland and Germany, with more than half of the infected computers being in Iran.[58] The use of intermediary devices to propagate the Stuxnet virus highlights the vulnerabilities presented by the people and social components of cyberspace. However, as was illustrated in the attack at Natanz, personnel can introduce significant vulnerabilities, especially if they fail to act in accordance with information security policies and procedures.

The dynamic nature of the cyber threat clearly demands a highly innovative and dynamic response.[59] The increasing dependence of Australian society and Defence on cyberspace suggests that the response should emphasise resilience and the management of risk to ensure continuity of government, continued generation of electricity, and the capabilities of emergency response services.[60]

Implications for Defence

Information networks are just as important to the ADF as they are to other Australian organisations. Australia's ability to project power is highly dependent on information technology, meaning that from a military operations perspective, dominance of cyberspace is now as essential as air dominance or control of the seas.[61] The size and scope of the conventional military advantage of the US, as Australia's dominant security partner, gives rise to the opportunities presented to generate an asymmetric effect from threat actors who are less dependent on cyberspace than the US and its allies. Information dominance is not incompatible with physical dominance and, like the air, land, sea, and space domains, cyberspace must be protected in order to optimise the potential capability benefits that are available.

MacGibbon argues that there is a growing gap between the magnitude of the cyber security problem facing Australia and the capacity of our national security apparatus to manage the problem.[62] The whole-of-government role and responsibilities of DSD and the CSOC makes Defence the dominant cyber security line agency within the Australian Government. However, any efforts to militarise cyberspace would potentially threaten the great benefits that arise from a single, global, interoperable network that has facilitated not only tremendous economic growth but a vast exchange of information and ideas across cultural and international boundaries.[63] Similarly, the development of offensive cyber capabilities should be carefully considered, as there is no guarantee that an identified attacker will have assets in cyberspace that can be targeted in a proportionate response, meaning that response options may need to include conventional military effects.

The responsibilities of Defence to protect Australian interests in cyberspace are immense. The majority of these responsibilities reside with DSD, in its assigned role to 'coordinate and assist operational responses to cyber events of national importance across government and systems of national importance'.[64] This is an expansive role that includes the use of advanced analytical capabilities and techniques to identify malicious activity conducted by sophisticated foreign hackers against Australian cyber assets, and to proactively and reactively respond to cyber threats.

Yet oversight of the CSOC lies in a public servant at the Senior Executive Service Band Two level. This is relatively junior when one considers that the US Defense Department's efforts in cyberspace are led by the fifteenth-highest ranking official in the Department.[65] The recently-

established US Cyber Command is charged with both offensive and defensive operations in cyberspace and is headed by a 4-star general. In considering the significance and importance of the role of Defence in the protection of Australian interests in cyberspace, it would seem appropriate that the seniority of the individual charged with oversight of this function be reviewed.

A whole-of-nation approach

Military approaches to cyber security are likely to include active or offensive measures. Such measures would require a detailed consideration of the legal basis of activities such as 'hack-back', which is a technologically feasible technique where a retaliatory attack is immediately launched against the entity that initiated an attack.[66] Blackburn and Waters advocate a close affiliation between Defence and industry, noting instances where Defence thinking has benefited from alternate, non-defence, approaches.[67]

Enhancing and maintaining existing relationships with industry would enable Defence to access the great bulk of Australia's cyber expertise, as the primacy of cyber security capabilities and capacity within Australia exists within industry. Such an approach would require a significant review of policies regarding access to internal information, so that industry gained appropriate access to low-end sensitive information to better respond to cyber security events.[68] However, the ability to access and marshal technical expertise in support of Defence roles and tasks would provide significant benefits to Australia's cyber security capability and be a very effective addition to Australia's collective law enforcement and national security effort.

Similarly, greater cooperation with academia would potentially lead to increased research and development of more secure network designs. Achieving more secure network designs that enhance the security of current systems, without stifling or slowing network performance, would be a massive but worthy initiative. A closer relationship with academia is advocated by Carafano and Weitz, who have called for a more concerted national effort to acquire commercial capabilities and services, manage military intelligence and information technology programs, and develop a corps of professional cyber security practitioners.[69] Enlisting the support of both industry and academia could yield a potential whole-of-nation response to Australia's cyber security challenges.

Protecting information

The freedom of action continually exercised by malicious threat actors in cyberspace clearly demonstrates that Defence cannot adopt a 'fortress' approach to securing its sensitive electronic information.[70] In publicly opening the CSOC in January 2010, the then Minister for Defence, Senator John Faulkner, announced that Defence had repelled over 2,400 attacks against its networks and over 200 attacks against other Australian Government networks during 2009.[71] The large number of intrusion attempts suggests that Defence should focus on protecting information, rather than systems, with a focus on the resilience of networks that support essential services.

Despite the apparent success of the Stuxnet virus in bridging air-gapped networks, there should certainly be no connectivity between networks that control critical functions and the Internet. Ultimately, the challenge is to determine what matters, and take all available measures to protect it. Managers, information and communications technology experts, and

custodians of data, should know the location of critical data, identify the characteristics of the systems that carry it, understand the vulnerabilities of those systems, and be able to detect and measure changes in activity that indicate the presence of potential threats.[72]

There are no 'silver bullets' to resolve the cyber security challenge, nor is there any guarantee that malicious actors can be kept on the sidelines.[73] Finding whole-of-nation or even whole-of-government solutions is difficult because the Australian Government has assigned different areas of responsibility to different agencies. The simple truth is that there is a common need to resist, reduce and fight cyber threats and respond to attacks, while not stifling the performance or usability of the network.[74] This will require a capacity to measure and report on the cyber health of government networks, based on criteria determined by DSD, and monitored by Government.[75]

International cooperation

The transnational nature of cyberspace means that cooperation with like-minded international partners is an important element of cyber security for Defence. It is only by working with international partners that Defence can address cyber security in a meaningful way. Defence should work within the international system to 'constrain actors with malicious intent, develop cooperative mechanisms to pursue cyber criminals, limit espionage, and develop norms against the initiation of conflict in cyberspace'.[76] However, it is not clear if all nations will wish to participate in international treaties and agreements regarding cyberspace, especially if those nations perceive that they possess an asymmetric advantage over others.

However, a significant incentive for the participation of any reluctant nations is that they are just as susceptible to cyber attacks, and that the benefits and utility of international cyber security agreements are as great for them as others. It will, therefore, be very important for Australia and like-minded nations to develop a full range of incentives for all nations to acknowledge this mutual susceptibility to cyber attack and to agree to actively pursue cyber security policies and arrangements. International agreements and treaties are more likely to occur as attribution becomes easier, and Defence must be prepared to actively participate to ensure that the optimum cyber security outcome for Australia is achieved.

Policy response

Australia's current policy response to the cyber security threat crosses several Commonwealth Government departmental and agency boundaries, being addressed in policy documents released by the Attorney-General's Department; the Department of Defence; the Department of the Prime Minister and Cabinet; the Department of Broadband, Communications and the Digital Economy; the Australian Federal Police; the Australian Government Information Management Office; and the Australian Communications and Media Authority. This presents a disjointed and, at times, confused approach to policy.

This is because, as has already been discussed, the cyber security responsibilities of the Commonwealth Government span a broad spectrum, from cyber safety through cyber bullying and cyber crime, to national security.[77] The coordination of the efforts of these disparate organisation into a coherent, whole-of-nation effort is further complicated when one considers the additional involvement of State and Territory law enforcement agencies, as well as industry and academia.

The Commonwealth Attorney-General and Minister for Defence announced in June 2011 that a 'Cyber White Paper' would be developed by the Department of the Prime Minister and Cabinet for release during 2012.[78] This will be the first dedicated whole-of-government policy document regarding cyber security since the 'Cyber Security Strategy' was produced by the Attorney-General's Department in 2009. It will be very important for the White Paper to resolve any confusion regarding the cyber security functions and responsibilities of each relevant Commonwealth department and agency, as well as defining the functions and capabilities that the State and Territory Governments must maintain. This might also include the recognition of lead agency status, possibly to the Department of the Prime Minister and Cabinet, to coordinate the Commonwealth Government's response to any cyber security incident.

Defence will need to actively participate in this process to ensure that the White Paper clearly defines and appropriately bounds the Government's expectations regarding the cyber security responsibilities of Defence. In particular, Defence should seek to clarify Government policy regarding DSD's support to the private sector, and the use of cyber techniques and methods by the ADF, and the level of engagement that should be sought with both international security partners and other nations. Similarly, Defence should seek to use the development of the Cyber White Paper to implement a risk management approach that emphasises information protection and network resilience as the primary objectives.

Conclusion

The increasing dependence on cyber capabilities and the subsequent exposure to emerging cyber threats will be a significant challenge to Australian society and Defence during the next ten years. As cyberspace is now the primary domain for global communications and commerce, and is increasingly viewed as a potential domain for interstate conflict, the challenge is likely to grow quickly and continually.

The responsibilities of Defence to protect Australian interests in cyberspace are immense, and have the potential to significantly expand during the next decade. Enlisting the support of both industry and academia would be of significant benefit and potentially lead to a whole-of-nation response to Australia's cyber security challenges. The ability to access and marshal technical expertise in support of Defence roles and tasks would greatly improve Australia's cyber security capability and be a very effective addition to Australia's collective law enforcement and national security efforts.

Similarly, Defence must be prepared to actively participate in international agreements to ensure that the optimum cyber security outcome for Australia is achieved. Such actions will require appropriate policy coverage and Defence should seek to use the development of the 2012 'Cyber White Paper' as an opportunity to achieve that policy outcome.

This article has argued that the threat to Defence in cyberspace is real and that it is Defence's increasing dependence on cyber capabilities, and its potential exposure to cyber attack, that poses one of the most significant challenges for the next decade. Full system security is extremely difficult and, in most cases, unrealistic. The response to this threat, both nationally and within Defence, must emphasise risk management, the protection of information, and network resilience to ensure that Australia and Defence are well placed to reap the full benefits of the digital economy.

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NOTES

1. This article is an abridged and updated version of a paper titled 'What is the cyber security threat to Australia, and what are the resultant implications for the Australian Defence Organisation?', submitted by the author while attending the Defence and Strategic Studies Course at the Centre for Defence and Strategic Studies at the Australian Defence College in 2011. The views expressed in this paper are informed by academic research and are exclusively those of the author, and do not represent the official view of the Department of Defence.

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Australia's Policy Response to Unauthorised Maritime Arrivals[1]

Commodore Saboor Zaman, Pakistan Navy

Introduction

All Australians, except its indigenous people, are either relatively recent immigrants or the descendants of those who immigrated at some time during the past two centuries or so. James Jupp, in his study of Australian immigration, contends that 'without continual immigration, the modern, urbanized and affluent society of today could not have been created'.[2] Yet Australia is an island country, with no land borders, which has made it somewhat difficult for immigrants—whether legal or otherwise—to gain access.

Despite those difficulties, a longstanding concern within Australian society has been the vulnerability of Australia's borders and the perceived threat posed by illegal arrivals. Those underlying fears have persisted and, particularly since the mid 1970s, have translated into popular concerns about border protection, asylum-seekers and illegal migrants. The terrorist attacks of September 2001 added a further dimension to those concerns. During the past few years, the political and public debate on these issues has intensified and has been a cornerstone of recent election campaigns.[3]

The reality is that since the end of the Second World War, Australia has resettled some 700,000 refugees and asylum-seekers,[4] although this number is relatively small compared to the US and Europe.[5] Those under the refugee category are mostly referred to Australia by the UN High Commissioner for Refugees (UNHCR), whereas other humanitarian entrants are settled under the Australian Government's 'Special Humanitarian Programme', which includes both offshore and onshore applicants.[6] While there is not much discussion within Australian society about the offshore component, and those who enter the country legally and then apply for asylum, the onshore component—comprising those who seek asylum after entering Australia illegally—is the focus of often strident debate.

These people generally come by sea and are referred to in popular commentary as 'unauthorised arrivals', 'boat people', 'illegal entrants' or sometimes 'queue jumpers', because they are perceived to be taking the place of more deserving refugees awaiting resettlement in a refugee camp in their country of origin or a transit country.[7] The occasional more alarmist commentary asserts that if the influx is not checked, Australia will be swamped by boat people.[8] Another concern is that unscrupulous people-smugglers are profiting hugely from the trade, and that innocent and vulnerable refugees, especially children, are being placed at considerable risk by being transported to Australia in derelict and unsafe vessels.

The numbers

Table 1 shows the number of boat arrivals since 1976 (noting that the figures from 1989 to 2008 exclude crew, whereas the figures from 2009 include crew).

Table 1 – Boat arrivals in Australia [9]

Year	Number of boats	Number of people
1976	Not available	111
1977	Not available	868
1978	Not available	746
1979	Not available	304
1980	-	0
1981	Not available	30
1982–88	-	0
1989	1	26
1990	2	198
1991	6	214
1992	6	216
1993	3	81
1994	18	953
1995	7	237
1996	19	660
1997	11	339
1998	17	200
1999	86	3721
2000	51	2939
2001	43	5516
2002	1	1
2003	1	53
2004	1	15
2005	4	11
2006	6	60
2007	5	148
2008	7	161
2009	61	2849
2010	134	6879
2011 (to 30 June)	28	1675

The debate over 'push-pull' factors

The statistics in Table 1 show that the numbers have fluctuated significantly over the last 30 years, which can be attributed to a combination of 'push' and 'pull' factors.

'Push' factors are those that force people to leave their homes because of poor security, ranging from financial insecurity to broader social and health conditions in their country of origin.[10] These can include conflict and persecution in the form of human rights violations, including arbitrary arrest, detention, torture, extrajudicial executions and forcible expulsions.[11] Other push factors might be limited or no access to basic needs, such as food, health and education.[12]

'Pull' factors are those that attract people to where they seek asylum, often encouraging refugees to extend their journey to a destination considerably distant from their homeland. A first-world democratic country like Australia, with a strong welfare system, is obviously a pull factor in its own right. The large number of migrants from refugee-generating countries such as Iraq and Sri Lanka, who are already settled in Australia, also acts as a pull factor because it encourages friends and relatives to follow, in what is often termed 'chain migration'.[13] A perceived lenient refugee determination process can also be a pull factor.[14]

Push factors are generally more important and stronger than pull factors, and are also harder for destination countries to control.[15] While it is very difficult to analyse the relationship between push and pull factors, as well as their impact on illegal boat arrivals, successive Australian Governments have been under continuing political pressure to adopt policies that yield immediate results in the shape of fewer boat arrivals.

Legal obligations

It is important to understand the legal obligations concerning boat people before analysing and proposing policies to deal with the issue. The UN's 1951 Refugee Convention, read in conjunction with the 1967 Protocol, defines a refugee as a person who:

> … owing to well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group or political opinion, is outside the country of his nationality and is unable or, owing to such fear, is unwilling to avail himself of the protection of that country; or who, not having a nationality and being outside the country of his former habitual residence as result of such events, is unable or, owing to such fear, is unwilling to return to it.[16]

In contrast, an asylum-seeker is someone who is seeking international protection but whose claim for refugee status has not yet been determined.[17]

An analysis of the Convention reveals that two fundamental provisions impose some limitations in relation to stopping and dealing with illegal arrivals. The core obligation bars a country from sending someone back into a situation of possible persecution.[18] The other important obligation is that asylum-seekers who enter a country illegally should not be penalised.[19]

Another legal aspect regarding boat people, often overlooked, is the application of the UN Convention on the Law of the Sea (UNCLOS) of 1982. Article 2 authorises a state to exercise sovereignty over its territorial seas up to 12 nautical miles.[20] Further articles grant the right of innocent passage, 'so long as it is not prejudicial to the peace, good order or security of the coastal state'.[21] The Convention further specifies that any such passage shall be considered

prejudicial if a vessel is engaged in 'the loading or unloading of any commodity, currency or person contrary to the customs, fiscal, immigration or sanitary laws and regulations of the coastal state'.[22]

Hence, it is quite evident that Australia is permitted under international law to enforce domestic immigration regulations in its territorial sea and contiguous zone (which extends up to 24 miles from the shore) to curb the activities of people-smugglers and police the illegal movement of people.[23]

The current border protection arrangements[24]

The Australian Customs and Border Protection Service (ACBPS) is the lead agency for the detection and deterrence of illegal activities within Australia's offshore maritime areas. Within this agency, the Border Protection Command (BPC) combines and coordinates the resources and expertise of ACBPS, the Department of Defence and other agencies, utilising aircraft, ships and detection technologies, to respond to threats and challenges in the offshore maritime area.

In particular, BPC is responsible to intercept vessels suspected of having illegally entered Australia's contiguous zone. It does this by deploying surveillance and detection assets across the north-western and northern approaches to the mainland and also across a number of historically-used avenues of approach. Given the size of this area, BPC employs a layered and integrated approach, incorporating intelligence systems for the early identification of threats, aerial surveillance to identify threats in high priority areas, and on-water patrol and response assets.

Future policy considerations

Developing a firm, fair, compassionate and legal policy framework on boat people requires a holistic approach. As noted by Mary Crock and Daniel Ghezelbash, 'no single policy—and no government acting alone—can work to stop the boats and/or stop the deaths at sea. Cooperation is the key'.[25] Hence cooperative arrangements, within Australia as well as within the source and transit countries, need to be emphasised for a durable solution.[26]

Such policies are generally categorised into 'containment' and 'deterrence'. Deterrent policies generally deal with the pull factors and are more 'visible' and appear proactive. Containment policies focus on the source of asylum flows, mainly dealing with the push factors. Containment policies typically have two elements, namely stemming the flow of asylum seekers at the source and resettling them in an orderly fashion.

The overall strategy needs to strike a balance between different objectives, while meeting legal obligations and keeping national security paramount. These objectives include dealing with both push and pull factors, border protection, curbing people-smuggling, collaboration with transit countries to check the upstream movement of boats, and maintaining Australia's image and reputation as a compassionate and law abiding country.

The policies that flow from the strategy should aim for a lasting solution to the problem. Hence, while focusing primarily on the push factors, they obviously should not ignore the pull factors. Accordingly, this article proposes a set of policies with emphasis on dealing with the push factors and 'opening the front door wider', while also reducing the pull factors to the minimum possible limits and 'closing the back door even tighter'.

This will require Australia to continue employing a whole-of-government approach and utilise all available means to achieve a positive outcome. It is suggested that a complete overhaul of the asylum system is neither necessary nor cost effective,[27] and that the Government should be able to implement the following proposed policies through minor adjustments and the redirection of available resources.

Policy recommendations

Recommendation 1. Lobby for a review of the 1951 Refugee Convention

Australia should rally international support for reform of the 1951 Refugee Convention to suit the present-day environment. Various statesmen have already spoken of the need. For example, in 2000, then British Home Secretary Jack Straw called for revision of the Convention, pointing out that it 'gives people facing persecution the right to claim asylum, but it does not oblige any nation to admit them so that they can make that claim'.[28] This contradiction, he argued, compels people to resort to people-smugglers to avoid persecution. He advocated an international system offering protection to refugees at their point of departure so as to curb people-smuggling.[29]

However, domestic as well as international opinion would need to be shaped prior to any reform. That might be achieved through convening a group of internationally-eminent persons, comprising legal and foreign policy experts, to analyse the Convention and propose amendments. At the least, the amendments should address the following perceived shortfalls:

a. The Convention does not recognise any right of assistance of the refugees until they reach a signatory country,

b. It imposes no restriction or sanction on countries which persecute their citizens,

c. It does not address the issue of people-smuggling resulting from the framework of the asylum process outlined in the Convention,

d. The Convention gives priority to asylum-seekers on the basis of mobility and affordability rather than those in greatest need,

e. It does not put any restriction on those who move from the country of first asylum in search of a better location, generally known as 'forum shoppers',

f. It does not specify the modus operandi for returning unsuccessful asylum-seekers, and

g. It does not impose any obligation on non-signatory countries.[30]

Recommendation 2. Promote coordinated international action to address refugee issues

At the global level, refugee problems require coordinated international action aimed at an orderly departure from their country of origin or the country of first asylum.[31] As part of this approach, Australia and other developed countries should establish a more comprehensive network of immigration officials to process more people overseas.[32] Besides reducing the number of illegal arrivals, this could also check people-smuggling because, when people believe they can apply for asylum through legal means, they may not resort to illegal means or risk their lives unnecessarily in hazardous journeys.

Recommendation 3. Provide more assistance to countries of origin and transit countries, particularly in capacity building

Marty Natalegawa, Indonesian Minister for Foreign Affairs, noted in 2011 that 'poverty, economic disparities, gaps in labour market opportunities, conflicts and insecurity are the major factors behind the rise in the incidence of people-smuggling and human trafficking'.[33] Australia should therefore continue, along with the international community, to address these root causes of forced migration, including through its existing aid programs. This would include stabilisation and promotion of harmony among various ethnic communities, as well as capacity building in the countries of origin, such as Afghanistan, and in transit countries, such as Pakistan.[34]

The obvious rationale is that if asylum-seekers are dealt with in countries of first asylum, particularly Indonesia and Malaysia, they will not have to embark on a risky boat journey to Australia. Australia should, therefore, work closely with Indonesia and Malaysia to build their capacity to handle and process asylum-seekers expeditiously and humanely. Australia should assist them in the settlement of successful asylum-seekers and their integration into society. Australia should also lobby for more international funding for the UNHCR to process refugee claims expeditiously. This would check the business of people-smugglers and ease Australia's burden of border protection, as well as reducing the costs involved in the detention and processing of boat people attempting to reach Australia.[35]

Recommendation 4. Establish a single border protection agency, with Ministerial responsibility

Currently, there is no single agency to coordinate the protection of Australia's maritime domain.[36] The current involvement of some 28 agencies has complicated the arrangements for management and policing.[37] As noted by the defence commentators Bateman and Bergin, 'failure to achieve a truly integrated approach to oceans management shows that further hard thinking is required'.[38]

Moreover, 'there is often no-one who owns the problem as a whole' and there is no single Government minister directly responsible for policing of the maritime domain.[39] The Australian Government should consider establishing a single agency, with a minister nominated to directly control the agency.[40] One option would be to create this agency as a Coast Guard, with assets drawn from various agencies on a permanent basis. The personnel could be seconded for a specifc period and have wide policing powers. Such an agency would also be able to represent Australia in relevant regional and international fora, including the Heads of Asian Coast Guards' forum.[41]

Recommendation 5. Upgrade the existing assets

A balanced mix of assets is required to secure Australia's maritime approaches, including surveillance, patrol and response. It is, however, important to note that mere detection is easier than providing a response and that physical interception requires considerably more assets and capabilities than surveillance.[42]

Current air assets include RAAF Orion long-range maritime patrol aircraft, contracted Dash-8 maritime patrol aircraft, contracted Reims F406 maritime patrol aircraft and contracted helicopters. Surface assets include Bay-class (patrol) vessels, contracted vessels, Armidale-class patrol boats and RAN major fleet units. While the air assets are arguably adequate, the available surface platforms are not sufficient for effective patrol and response activities, particularly during rough weather. Consideration should therefore be given to the acquisition of more and larger platforms, including ocean patrol vessels, offshore patrol vessels, coastal patrol vessels and inshore patrol vessels.[43]

Recommendation 6. Separate the quota for onshore and offshore asylum seekers

Contrary to the reality, there is a general perception in Australia that boat people are 'queue jumpers' taking the place of more deserving refugees awaiting resettlement somewhere in a refugee camp.[44] This perception stems from having a combined quota for onshore and offshore asylum seekers. Paul Power, CEO of the Refugee Council of Australia, contends that 'the linking of the two programs has undermined support within Australia for our nation's adherence to the Refugee Convention'.[45] He further states that:

> Implicit in this view is that Australia should not be bothered by people seeking protection under the Refugee Convention and that genuine refugees should go to other countries and wait patiently in the hope that Australia may choose to resettle them. What an arrogant view and what an abrogation of the Refugee Convention. How would the governments and people of Pakistan, Syria, Jordan, Chad and Tanzania (to name a few)—who host many times more asylum seekers than Australia ever has—feel about this?[46]

The 'manufactured' notion of queue jumpers has led to unnecessary resentment within the Australian public and certain ethnic communities already settled in Australia, particularly from Afghanistan and the Middle East.[47] It is therefore recommended that the Government de-links the quota for offshore refugees from those seeking asylum onshore.

Recommendation 7. Return intercepted boats to their country of registration

By conducting extensive barrier patrolling in areas through which boats carrying potential asylum-seekers are likely to transit, Australian assets would be better placed to intercept unseaworthy boats in international waters, before rendering assistance and escorting or towing them to their country of registration, which is usually Indonesia. This would not only save loss of precious lives at sea but would also curb people-smuggling, while Australia would be fulfilling its moral and legal obligations to protect the lives of asylum-seekers.

Such action on Australia's part would be justified by Article 98 of UNCLOS, which binds all states to ensure that a master of any vessel flying their flag '… render assistance to any person found at sea in danger of being lost or to rescue persons in distress.'[48] Moreover, the government of a country where the boat or vessel in question is registered is obliged to receive it. There is also international precedence, with the US and Italy having conducted similar return operations within the last decade.[49]

Recommendation 8. Negotiate re-admission agreements with countries of first asylum

The term 'forum shopping' is used by immigration officials for those refugees who look for best quality protection in a country of their choice, rather than the protection immediately available in proximity to their country of origin.[50] In order to curb 'forum shopping', Australia should negotiate re-admission agreements with potential countries of first asylum, including Indonesia and Malaysia, while offering them assistance in terms of financial support, capacity building and generating employment opportunities to integrate asylum-seekers at the community level.

Recommendation 9. Strengthen regional cooperation arrangements

A regionally-endorsed process already exists to address people-smuggling, trafficking in persons and related transnational crimes in the Asia-Pacific region and beyond.[51] Since its inception, the so-called 'Bali Process' has expanded in terms of member countries.[52] Marty Natalegawa, Indonesian Minister for Foreign Affairs, noted at the opening session of the fourth ministerial conference of the Bali Process that:

> Since the issue it [The Bali Process] addresses is multidimensional and multifaceted, the framework should be comprehensive and inclusive. It has to provide solution for all countries affected. It has to accommodate the interests of all countries involved .... We must strengthen cooperation, expand our networks and think outside the box.[53]

It is evident that an aspiration is already present to resolve the problem of illegal movement of people through regional cooperation, while expanding it to include all the countries affected. The Australian Government should therefore seek to further enhance regional cooperation on this issue, including by expanding the Bali Process to all countries affected by people-smuggling and the illegal movement of people.[54] This would lead to a collaborative engagement between source, transit and destination countries to effectively curb the issue.

Recommendation 10. Collaborate more closely with overseas law-enforcement agencies to disrupt people-smuggling networks

Some intelligence-sharing and law enforcement cooperation already exists between Australia and other regional countries.[55] However, there is a need to further strengthen this cooperation, particularly with the countries of first asylum or transit countries, including Indonesia and Malaysia. Utilising the platform of the Bali Process, the Australian Government should negotiate a formal agreement with Indonesia and Malaysia to facilitate closer collaboration between Australian security personnel and the respective local security agencies.

Australia should build the capacity of Indonesian and Malaysian law enforcement agencies and establish an intelligence and surveillance network in these countries to further crack down on people-smugglers. The intelligence network should exploit sources of human intelligence and penetrate to the level of local fishermen, who could provide useful information in exchange for financial incentives.

The Government should also make Australia's 'Criminal Intelligence Fusion Centre' more effective by giving it a broader role to play both in Australia and abroad. The Centre was launched in July 2010, with funding of A$14.5 million, to prevent and detect organised

crime, including people-smuggling.[56] The Centre provides a platform for collaboration and coordination among experts from various agencies, including the Australian Federal Police, the Department of Immigration and Citizenship, the Australian Transaction Reports and Analysis Centre, the Australian Taxation Office, Centrelink, Customs and Border Protection, and State and Territory law enforcement authorities.[57]

Recommendation 11. Develop a media campaign to deter people-smugglers and boat people

Effective policies are not likely to deter potential boat people or people-smugglers if they are not broadcast appropriately to the intended audience.[58] Although there are some obvious practical problems, including translation, illiteracy and access,[59] the Government needs to develop an effective media campaign for creating awareness among potential boat people in the countries of origin, as well as transit countries, about the risks involved in embarking on a lengthy journey in leaky and unsafe boats.

Past incidents involving loss of lives at sea and the unscrupulousness of people-smugglers should be given wide publicity. The potential harsh penalties for people-smugglers,[60] including heavy fines and imprisonment, should also be given wider coverage so as to deter the people involved in this business. Similarly, in order to reduce the pull factor, Australia should make clear that unsuccessful asylum-seekers will be returned expeditiously. As observed by Adrienne Millbank, 'the rapid return of rejected asylum-seekers is the most—perhaps only—effective counter to people-smuggling'.[61]

At the same time, more information should be given as to the process of applying for refugee status through the proper channels. Although there are practical challenges in such a campaign, particularly in a conflict zone, all available means should be tried. Some would argue that people fleeing for their lives will not be deterred by any information campaign. However, it has also been established that such people often do not know about the policies of the destination country and, in some cases, do not select their final destination, which is chosen by people-smugglers.[62]

Recommendation 12. Establish a non-partisan commission to develop a coherent policy towards boat people

While it is understandable that political parties will have different policy approaches to contentious issues, the current political disagreements in Australia over the issue of boat people are viewed negatively by many, both in Australia and abroad.[63] One option would be to constitute a non-partisan commission, perhaps comprising ex-Prime Ministers from all the major parties and retired High Court judges, to develop a consensus on a policy to deal with asylum-seekers.[64]

Conclusion

Australia's outlook as a progressive and fair country, and its international legal obligations, dictate that its policies to deal with boat people should be humane and legally justified. It is axiomatic that no single policy will work in isolation. Rather, a set of broad-ranging policies need to be formulated, in collaboration with the key stakeholders, to address what is clearly a complex problem.

Those policies, such as the recommendations included in this article, need to address both the root causes of the problem, which are generally the push factors, as well as the pull factors, over which Australia generally has more control. The bottom line is that while Australia clearly has a sovereign right to secure its borders, it also needs to develop a more coherent and sustainable policy towards unauthorised arrivals.

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NOTES

1. This article is an abridged and slightly updated version of a paper titled 'How Australia Can Maximise its Assets to Respond to Unauthorised Maritime Arrivals: A Set of Policy Proposals', submitted by the author while attending the Defence and Strategic Studies Course at the Centre for Defence and Strategic Studies at the Australian Defence College in 2011. The original version is available from the Editor *ADF Journal* by emailing publications@defence.adc.edu.au

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18. Article 33(1) of the 1951 Convention Relating to the Status of Refugees. It is, however, pertinent to note that the Convention was designed in and for a different era, and that some academics argue that it does not suit the present security environment, thus resulting in some problems in its implementation. See, for example, Adrienne Millbank, *The problem with the 1951 Refugee Convention*, Department of the Parliamentary Library Research Paper: Parliament of Australia, 5 September 2000, p. 3.

19. Millbank, *The problem with the 1951 Refugee Convention*, p. 3.

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28. Mares, *Borderline*, p. 185.

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30. Millbank, *The problem with the 1951 Refugee Convention*, p. 3.

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47. Mares, *Borderline*, p. 24.

48. Article 98 of UNCLOS.

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59. Koser, 'Responding to boat arrivals in Australia', p. 8.

60. For similar views, see Spalding, 'Stopping the boats', p. 36.

61. Millbank, *The problem with the 1951 Refugee Convention*, p. 12.

62. Koser, 'Responding to boat arrivals in Australia', p. 8.

63. Koser, 'Responding to boat arrivals in Australia', p. 11.

64. For similar views, see transcript of the interview with Heather Ridout, CEO Australian Industry Group by Fran Kelly, 'Industry and business concerns surrounding a possible hung parliament', 24 August 2010: see <http://www.aigroup.com.au/portal/binary/com.epicentric.contentmanagement.servlet. ContentDeliveryServlet/LIVE_CONTENT/Publications/Speeches/2010/Fran_Kelly_24_Aug_10.pdf> accessed 29 September 2011.

Nurturing the Australian Military Mind: an assessment of senior professional military education[1]

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Introduction[2]

The most important function of any government is to safeguard the security and economic prosperity of its people. Preparing and educating the politicians, senior government officials and military leaders who make, and implement, decisions on security matters is therefore of national significance. Yet politicians rarely deliberately undertake education to prepare them to exercise judgment on national security issues. This clearly places further, genuine importance on the preparation of the senior civilian officials and military officers who advise and support them in safeguarding the security of the nation.

This article compares senior professional military education (PME) in Canada, US, UK and Australia. It explores a range of contested ideas as to what PME should seek to deliver and how this is best done. It argues that Australia's approach to the preparation of its military leaders is appropriate, high quality, valid and as effective as those of other nations. However, the generalist nature of the Australian approach has compromises and vulnerabilities. In particular, there are gaps that should be closed, especially in the preparation of warfighting commanders and civilian Defence officials.

This article invites senior educators, practitioners and participants in the national security environment to consider the points raised and to engage in debate on the issues in order to achieve more effective outcomes, particularly among like-minded nations.

A common approach?

In September 2011, staff from Australia's senior PME institution, the Centre for Defence and Strategic Studies (CDSS), 'benchmarked' its Defence and Strategic Studies Course (DSSC) with eight military college counterpart courses in Canada, US and UK.[3] These colleges included the National Security Programme of the Canadian Forces College, the US National War College, US Industrial College of the Armed Forces, the US Army, Navy and Marine War Colleges, the UK Defence Academy, the UK Higher Command and Staff Course and the Royal College of Defence Studies.

The benchmarking visit confirmed that there is no acknowledged 'world's best practice model' in PME. Each college develops strategic leaders and thinkers for their nation's defence and security organisations. Based on government direction—and because each nation's requirement is different—every college has developed its own unique response, and all are articulate and confident about the suitability of their program in meeting their government's needs.

Overall, these responses form a spectrum of delivery options which highlight different views on how to best implement PME. These different ideas should be rigorously debated, as the conclusions drawn shape the learning effects that are sought, the considerable resources expended and, ultimately, the capacity of the officials responsible for national security.

The key questions explored are:

- What are PME institutes trying to achieve?

- Is PME an art or science? Should the teaching focus be on intangible benefits or measurable outcomes?

- Is 'active' or 'passive' learning the better method to develop strategic leaders?

- Who gets to learn?

- Who designs and teaches the courses?

- How best to nurture 'andragogy' (the art and science of facilitating adult learning), self-awareness, judgment and the confidence to decide?

- What are the relative values of 'push' and 'pull' systems in improving PME capability through technology?

There are, of course other issues worthy of discussion, including governance and institutional effectiveness, which fall beyond the scope of this article.[3]

What are institutes trying to achieve?

On the face of it, there is general agreement on the capability effect or 'requirement' sought by senior PME courses. All colleges aim to develop selected personnel to be effective at the strategic level in the joint, whole-of-government and multinational environments. However, beyond this, an analysis of the course aims (see Table 1) suggests there are three overlapping intents, namely to develop a 'strategic thinker', to develop a 'strategic leader' and to develop a senior leader for a specific function or environment. These impact significantly on the student demography, learning methods and course content of the colleges.

The UK's Royal College of Defence Studies (RCDS) is noteworthy for its emphasis on producing strategic thinkers, with little consideration of being a vehicle for promotion or being part of a process.[5] There is little focus on military practice other than its application as an element of national power, and force capability development is not significant in the course content. The course stays global in its considerations so that students maintain a 'grand strategic' focus.[6]

While some other colleges (notably the US National War College, and the US Navy and US Army War Colleges[7]) have quite a deep, academic component in strategy and strategic thinking, the focus of all the colleges, other than RCDS, is on producing strategic leaders. Strategic thinking and academic studies are subordinate in the curriculum to the development of strategic leaders. This explains their much broader curriculum, which generally includes strategic context, statecraft and national security decision-making, the application of military power and the development of force capability to meet national objectives.

Table 1: Collated Course Aims[8]

College	Attendees (who)	Focus (why)	Level (what)
Canadian National Security Programme	Selected military, public servants, international and private sector	Future strategic responsibilities	Complex and ambiguous global security environment
US National War College	Selected military, State department, other civilian agencies	Sharpen analytical skills for whole-of-government and national elements of power, especially diplomacy and military	National level
US Industrial College of the Armed Forces	Selected military and civilians, including a blend of public officials and corporate managers	For strategic leaders and success in developing the national security strategy and evaluating, marshalling and managing resources in the execution of that strategy	National agencies and business
US Navy War College	Selected military and civilian agencies	Prepare strategically minded, critically thinking leaders, skilled in maritime and joint warfighting	Maritime and joint warfighting
US Army War College	Selected military and civilian agencies	To develop, inspire and serve strategic leaders for the effective application of national power … emphasising the development and employment of land power	Joint, interagency, intergovernmental and international environment
US Marine War College	Selected military and civilian agencies	For decision making across the range of military operations in the joint, interagency and multinational environment	Joint, interagency and multinational environment
UK Defence Academy	Selected military, international and civilian agencies	Position the Academy as a Defence capability	National and Defence
Royal College of Defence Studies	Selected military, international and civilian agencies	The development of strategists not promotion or process	Grand strategic, incorporating international and national strategy
UK Higher Command and Staff Course	Selected military, international and civilian agencies	Develop senior practitioners and commanders. Know the politics, use their intellect cleverly and have the emotional intelligence to connect and lead effectively.	Strategic – high operational warfighting
Australian Defence and Strategic Studies Course	Selected military, international and civilian agencies identified for 2- and 3- star rank	Develop the skills to advise policy makers and apply military power and force capability to achieve national objectives	National and strategic

While these are all outcomes, it should not be overlooked that physical inputs such as scale and resources significantly impact on course focus and coverage. Canada and Australia, with only one senior residential course each, have a 'generalist' approach that seeks to address all the aspects of strategic leadership in one 11-month course. That breadth of coverage inevitability constrains the depth at which any topic is pursued. In contrast, in the US and UK where there are multiple PME colleges, the course content of each is narrower but deeper. Collectively, however, they cover the same topics.

In accordance with the US's 'Officer Professional Military Education Policy', all US colleges focus on common strategic and professional issues for roughly two-thirds of the course but have a distinct functional or environmental focus for the remainder of the course. This creates a second overlap, that of producing leaders for specialist functions. For example, the US National War College prepares senior leaders in the national security/policy space but is particularly focused on the diplomatic and military elements of national power.[9]

The focus of the US Industrial College of the Armed Forces is on national security strategy but with a particular emphasis on the economic element and the business management aspects of defence, 'evaluating, marshalling and managing resources in the execution of that strategy'.[10] The three US Service Colleges visited (Navy, Army and Marine War Colleges), all emphasise their service/military environment focus.[11] This focus leads to more emphasis on military practice at the theatre strategic/combatant command level. A similar vertical stretching of focus, to include the strategic–theatre interface, exists in the generalist approaches of Canada and Australia, and at the UK Higher Command and Staff Course.

While the distinction between developing leaders for specialist functions and developing strategic leaders is a nuanced one, it needs to be acknowledged by the colleges and understood by their students. For example, each year a small number of students in their annual feedback survey for the Australian DSSC comment that the course is 'schizophrenic' in its emphasis on producing graduates who are meant to be both strategic leaders and senior warfighters. The DSSC content does try to do both because it is preparing students to lead across the Defence organisation, however, some students question this coverage as it is not focused purely on strategic leadership.[12]

This discussion leads one to question what the PME requirement should be—leader, thinker or environmental specialist? Overall, contemporary practice suggests that PME is for the development of strategic leaders. Strategic thinking, academic studies and mastery of specialist functions are very important but they are only subordinate elements in the preparation of effective strategic leaders.[13]

Is PME an art or a science?

How an institution teaches its curriculum can be as important as what is taught.[14]

Attempts to explain the various college teaching models generally start and end with a discussion of pedagogy (the art, science and profession of teaching).[15] Broadly, debate focuses on how best to both enhance and measure capacity in a student. Are strategic leadership attributes best developed and measured scientifically via tangible proofs, such as assessed written product and observed performance in exercises, activities and class? Or are strategic leadership attributes best developed and measured as an art, through providing the issues, the

thinking and reflection time for the students, and then making a judgment of the individual's capacity? This is an ongoing debate among students and staffs. Again, the DSSC student annual surveys generally include some comment that the focus on written deliverables and 'product' in exercises and activities can curtail valuable student discussion and learning about an issue under consideration.

A pivotal issue is to identify the principal customers of PME. While the instinctive answer is 'the students of course!', that answer is incomplete. There are two main clients who need to be satisfied about the effectiveness of PME: the students being developed as strategic leaders and the security hierarchy on behalf of the taxpayers who are paying. This dual-client reality dominates the approach of all the colleges to PME. The benchmarking discussions revealed that while college staffs exhibited a slight preference toward the importance of 'art', in delivery most colleges have opted strongly for tangible proofs and assessment as part of their curriculum.

This is because each college is resourced and owned by its government and, ultimately, the taxpayer. The colleges are heavily influenced by the need to have tangible 'proofs' that students demonstrate the skills necessary for a strategic leader. Exercises, essays, discussions and learning methods that can produce tangible evidence of these skills are the primary focus of most of the colleges visited. The US colleges, in particular, appear more prescriptive in their emphasis on assessment. This is at least partly due to close Congressional scrutiny of the PME course outcomes and reflects strong guidance that Congress wants tangible evidence of a student's capacity to demonstrate fitness as a strategic leader.[16]

At the RCDS, the discussion was somewhat different. There it was argued that it is more important for the students to have time to reflect and think, and that the course workload be kept as light as possible to allow for this reflection and still deliver quality work to meet post-graduate qualifications. RCDS management argues for intellectual space to allow the students' leadership skills to develop. It also argues for trust in the institution to allow it to judge that its approach is effective. The purity of the RCDS argument is attractive, yet how it will be maintained in an 'age of austerity', where evidence of value for money is a high priority government requirement, is a moot point.[17]

While the debate over art or science is lively, PME courses are ultimately for practitioners and the requirement is to develop strategic leaders who can 'think then do'. This dual requirement explains the need for demonstrated capacity in both quality of thought and the ability to translate that thought into appropriate actions. Thus PME requires a hybrid pedagogy—part 'art' and part 'science'—to satisfy the legitimate needs of both customers, the students and their government.

Is 'active' or 'passive' learning the better method to develop strategic leaders?

The debate over teaching pedagogy resonates in the learning delivery approaches of each of the colleges. In broad terms, the UK, Canada and Australia use a form of cooperation between Defence and an external academic provider, while the US colleges use an internal academic faculty that delivers an internally conferred degree. The former method is lean and cheaper in overhead and staff development costs but is considered by some to provide a more passive

learning environment. The US method is expensive in inputs, with large staff and facility costs, but the US colleges argue that it enables more 'active' learning outcomes.

The US approach involves in-house delivery by academics and military scholars, who also facilitate what is considered to be more active learning through student-led seminars. The emphasis is on students preparing for syndicate discussion by reading 100-125 pages of set text per day and then participating in a discussion of up to four hours in syndicate, facilitated by faculty staff. The intent is to instil a discipline of lifelong learning through reading, consideration and debate. US college syndicate sizes range between 13 and 16 students, much larger than UK and Australian syndicate sizes.

The case for 'active' learning is detailed in a 2010 US House of Representatives' report into PME.[18] In summary, the report confirms a preference for active learning and acknowledges the progress of the US colleges in this regard. While no target ratio is identified in the report nor in the 'Officer Professional Military Educational Policy', the report indicates that active learning percentages that include 'student-centred seminar discussion, case study, simulation exercises and field research' should be above 70 per cent of the curriculum. The report concludes that all the counterpart US colleges employ predominantly active instructional methods above that level.[19]

The alternate approach used at RCDS, the UK's Higher Command and Staff Course (HCSC) and Australian DSSC is a mix of external subject-matter expert lectures, supported by smaller readings and followed by syndicate discussion and activities to explore the issue at hand to achieve the stated learning objectives. In this approach, more time is allocated for individual student reflection. Presenters are external subject-matter experts from high quality non-military academic institutions and senior government, business and military practitioners. This approach promotes contemporary expertise and diverse perspectives, and most practitioners provide their support *pro bono*. That said, this heavier use of central presentations is seen by the US as a more passive learning method. The academic partnership model is also open to concerns, such as those raised recently by Avi Kober in regard to the Israeli PME experience. He argues that reliance on external academic providers can lead to a primacy of academic studies that diverts focus from the military capability rationale for PME.[20]

Having observed both methods, it is fair to say that there is more overlap of active and passive learning in the execution of the different approaches than is initially apparent. For example, in US syndicates, the facilitator will often commence with 20-25 minutes of opening remarks that is essentially a mini-lecture spelling out the key issues. In contrast, half of every DSSC or RCDS presentation is devoted to student-led questioning of the material and exploration of the set learning objectives.

Using the US active learning definitions, the Australian DSSC achieves a 75 per cent active learning standard based on student-led syndicate discussions and reviews, exercises, visits and the student-led question-and-answer sessions associated with each presentation. The DSSC approach has more 'knowledge generation', through central presentations supported by about 60 pages of reading per day, and more time devoted to student research and reflection. This is also suited to the student demographic, as some 40 per cent of the students are from countries that do not have English as a first language.

One distinct difference among the colleges is in regard to the importance placed on student reflection. In Australia, the UK and Canada, college staffs place more importance on allocating specific time for the individual student to reflect on the learning achieved through curriculum activities. None of these colleges has a measure to prove the effectiveness of reflection time. However, the utility of having 'thinking time' is consistently emphasised by professional educators and senior presenters throughout the course.

Johnson-Freese also notes this, stating that unlike training which is more mechanical, 'education … requires thinking and reflection, which takes time'.[21] For strategic leaders, the personal conclusions that students determine through reflection on professional issues are some of the most important takeaways from a PME course. Moreover, consistent student feedback on the DSSC over several years stresses that such time is critical and beneficial to students in their consolidation of the lessons learned from the curriculum. The heavier reading load and syndicate contact time of the US method appears to preclude this approach to student reflection.

In discussions, each of the college staffs exhibited a preference for active learning through syndicate seminars that maximise student involvement. In terms of teaching pedagogy and learning theory, active learning is clearly the preferred method. However, without considering resource constraints, this purist argument is inadequate. For each of the colleges, context and institutional inputs such as scale, resources, historical legacy, the availability of external educational providers and subject-matter experts, and college location are key determinants in the teaching method that has been adopted. Ultimately, the teaching approach of the colleges is decided by what each government is prepared to resource.

For both the RCDS and the UK HCSC, the availability of high quality academic providers has meant that an academic partnership in the provision of PME is their most cost effective option. Similarly, the CDSS does not currently have the scale or resources to have a large in-house faculty to support a reading-based, internal faculty-delivered course. Instead, the availability of quality educational partners, its location in the nation's capital (Canberra) and technologies such as video-conferencing make presentations by external subject-matter experts a viable, inexpensive alternative.

The Canadian National Security Programme (NSP) is a successful hybrid of both academic support and in-house delivery. The NSP has ten academics on site who are also public servants. This approach enables an effective balance between academic educational input and a professional military curriculum focused on generating military capability. In the US, historical legacy has provided colleges with the resources and in-house expertise to have their own faculty. Moreover, the locations of the various Service colleges (Montgomery, Newport, Carlisle and Quantico), distant from the national capital, mitigate heavily against the use of external subject-matter expert presenters or reliance on a local academic provider.

As important as the debate on active and passive learning is, it appears that the approach chosen will largely be directed by the respective government's willingness to fund the institutions. However, for some colleges, the technology of the 'information age' may provide opportunities to overcome these constraints.

Who gets to learn?

Who gets to learn is a becoming a key issue for all the colleges. Traditionally, the student demography was decided by the host nation and the other governments that select and pay for their students to attend. However, two key influences—the broadening of the concept of security and the opportunities provided by technology—may soon open PME to a wider audience. This offers benefits to government by generating a better and broader security capability effect.

The broadening of the concept of security has brought a range of new issues and new customers for PME courses. Consistent among all colleges is the desire to add more inter-agency and international students to their program. Professional mastery at the strategic level is not now conceived in narrow military terms. Instead, the emphasis is on military mastery but within a broader security context that is joint, inter-agency or international.[22]

The curriculum focus for these senior courses is not looking 'down and inside' the organisation but rather looking 'up and outward' to connect with other elements of government and international security and military efforts. This not only influences what needs to be studied but also who needs to be educated. Defence colleges were once a closed preserve with the specific focus of preparing national military officers in strategic leadership. Now, defence colleges are increasingly seen as part of a transparent military diplomacy, where leaders from other nations and other government agencies are encouraged to attend in order to enhance better common understandings and lay the foundations for future cooperation.

While all colleges are moving in this direction, the rate of change varies. As mentioned above, the Australian DSSC has about a 50/50 mix of Australian and overseas students at the Colonel equivalent/06 level. This reflects a focus on building a global cohort of future defence and security leaders with a particular focus on those from the Asia-Pacific. The RCDS 25/75 per cent mix of UK and overseas students reflects the RCDS' focus being more on international strategic issues and less on UK defence issues (and is consistent with the UK's strong tradition of military diplomacy).

In contrast, the remit of the UK HCSC to 'equip its core military students to be future operational leaders',[23] explains its near total UK student composition, consistent with its classified, military planning focus. Yet, even there, the nature of the curriculum has broadened significantly in the last five years to provide a broader 'top-down understanding of the strategic context and the ability to exert leverage with potential partners in the national and international security communities'.[24]

The Canadian NSP aspires to a one-third Canadian military, one-third other Canadian agencies or corporate business, and one-third international student demography.[25] As with all colleges, the NSP struggles to achieve the inter-agency student numbers. This reflects a common challenge for the various colleges that while defence forces are prepared to invest in long residential courses for a few chosen future leaders, this is not the staff development culture of most government agencies.

Generally smaller in scale and therefore resources, and more pressed with domestic functions, other agencies are often only willing to release small numbers of personnel for short courses. This cultural difference requires innovations, such as the modularisation of longer courses

and government leadership by directing agencies to participate. In 2010, the Australian Government established a National Security College at the Australian National University, principally to provide executive development short courses for inter-agency students. This innovation aligns well with the year-long residential DSSC course.

In accordance with the US Congress' *Goldwater-Nichols Act* and other guidance, the US colleges have a legislated student mix of 60 per cent primary service and 40 per cent 'other', mainly at the 05 and 06 rank level.[26] Given the size and scale of the US, and its world-wide responsibilities, the colleges' foci are primarily on developing America's own leaders. Consequently, the proportion of international students across the US colleges is smaller and varies between 9-19 per cent.[27] The smaller numbers of overseas students reduce the language challenge, which in turn also aids student-led seminar-based learning. With slightly more junior students, the focus of the US Service colleges appears to be more towards graduate employment in combatant command headquarters, while the US National War College and Industrial College of the Armed Forces focus is on graduates who will work in national strategic headquarters.

The other evolving challenge is whether the focus of senior PME should be limited to a chosen few. At a recent international conference, the new Commander of the Australian Defence College (ADC), Major General Craig Orme, challenged what he described as 'our industrial age model of learning with … school houses full of instructors who teach and students who learn'.[28] He questioned the applicability of this system of privilege, where he noted that the 'learner has first to be privileged through the process of selection and enrolment, receive the learning we decide they need … [and] then leaves the school house qualified'.[29] He argued that in the 'information age', adaptive military education institutions can exploit better technology to improve knowledge generation and distribution to a wider audience.

His view is shared by others. The US National Defense University (NDU) is actively experimenting with 'taking education to practical warfighters'.[30] Initiatives include the trialling of 'blended' residential courses, where the student mix combines experienced officers of standard seniority and selected officers who are being 'fast-tracked'. The NDU is also partnering with suitable military sponsors to deliver distributed residential education in locations where both a critical mass of students and the need has been established. The US Service colleges and UK Defence Academy have run large-scale, non-residential, distance learning courses generated from their colleges for some time. The non-resident curricula and materials derive from, and closely parallel, that of the respective resident courses.[31]

There is a need to broaden access for all those who need to learn. There is a clear government requirement for the preparation of a select group of future strategic leaders in the security space. But this group should now reflect the new security reality and be joint, inter-agency and international in nature. While the benefit of preparing these leaders through long residential courses is clear and needs to be maintained, the opportunity to provide education to other potential senior leaders should also be seized. These officers will also hold positions of high responsibility within Defence and other security agencies and they also need access to the course content. It is within the remit of the colleges to use technology to deliver their material to this wider audience.

Who designs and teaches the courses?

At most colleges, internal staff design a curriculum that is taught by a mix of suitably qualified academic and military scholars. However, the broadening range of professional and practitioner curriculum content and the opportunities provided by technology are stretching this traditional approach. Also, Defence strategic leadership courses incorporate vocational teaching, coaching, mentoring and development support not required in an equivalent academic strategic studies program. As a consequence, the design and delivery of curriculum in a Defence college requires specialist military education expertise sufficiently broad to cover all aspects of the military capability effect required by both government and the students. The colleges provide a range of approaches in this regard and, again, the key determinant is not so much based on pedagogy but resources.

The most highly-resourced colleges are in the US, some with a faculty of over 400 staff, and staff-to-student ratios in the order of 1:3 to 3.5.[32] At that scale and level of resourcing, an internal capacity adequate to cover the breadth of the curriculum is achieved. Staff design and deliver the curriculum with external academic accreditation of the programs. Most faculty staff have extensive military experience and/or requisite academic qualifications suitable to teach a post-graduate course. Most US colleges (particularly the US Army College) have a developed system of formal training of faculty for their role as facilitators of the student-led seminars. The professional credentials of the US faculties reduce reliance on externally derived coaches and mentors to provide practical strategic level coaching and leadership insights to the students.

Countries with fewer students and considerably less resources have found a range of solutions to cover curriculum design and delivery, and student coaching and mentoring. The Canadian response is a very effective balance of Defence control of design and appropriate academic coverage of the curriculum. Military staff who have an appropriate understanding of the capability requirement develop the curriculum. A specialist PME faculty of 10 resident academic staff, with a mix of academic and military experience and qualifications, design and deliver their respective courses. These academic staff are also Defence department public servants imbued with that ethos. Facilitation, coaching and mentoring is provided via a contracted group of former two-star or higher senior military, diplomatic and inter-agency officials. These contractors have the practical insight and gravitas to perform this important strategic leader development function.[33]

The UK RCDS and HCSC have leveraged off world-class civilian educational institutions and appropriate external presenters to address their curriculum needs. Their curriculum is broadly designed to UK Ministry of Defence requirements in partnership with Kings College, London. Course delivery is largely through the academic provider, overseen by a small Defence and military staff. While the provision of academic services is by contract, the long established relationship has led to a mature understanding on both sides of the capability requirement and the strengths and limitations of the relationship.[34] Particularly for the HCSC, sourcing of specific Defence-related practitioners by the military staff, where appropriate, reduces the cost of the programs and provides a level of contemporary senior practitioner insight not readily available in academia. At RCDS, facilitation, coaching and mentoring is provided by a very small number of two-star serving military officers or equivalent Defence personnel, supplemented by Kings College academics.[35]

Least resourced of all the colleges, the Australian DSSC has adopted the most distinctive and leanest model. There is no academic faculty, although there are several staff with senior academic qualifications. A small instructional staff of 11, for 45 students, has both a command and planning function and a facilitator and delivery capacity. The curriculum is designed and coordinated internally in accordance with guidance from a senior Defence committee. Subject-matter experts are contracted on a fee-for-service basis from a pool of some 300, including around 100 academics, 125 senior government and Defence practitioners, and 75 senior business executives. Presenters from government and many from the corporate sector provide their services free-of-charge. This 'virtual' faculty is sourced globally to achieve a world-class level of subject-matter experts. Technology, particularly video-conferencing, is used for many presentations.

This approach overcomes reliance on the limited pool of expertise in strategic leadership studies available from any one Australian civilian university, and overcomes the insufficient resources to fund an in-house faculty of sufficient size to cover the breadth of the curriculum. This approach is flexible, adaptive and responsive to higher guidance. The Master of Arts (Strategic Studies) course is supervised and accredited by a civilian university, with an academic adviser resident at CDSS to monitor the academic standards of the program. Syndicate facilitation is provided by six 06-level staff, supplemented by 2-, 3- and 4-star military and civilian officers who mentor all principal exercises and activities. The coaching and mentoring of these senior practitioners is reported to be of great value by the students.

Overall, contemporary practice suggests that most colleges prefer to own and control the curriculum design and to have a specialist internal faculty for curriculum delivery. However, this is also the most expensive model. Where resources do not allow the internal faculty model, an academic-Defence partnership with Defence staff designing the curriculum, and academic staff delivering the program, is the next preferred option. However, this preference is dependent on the capacity of one academic institution to cover all aspects of the curriculum.

Where that capacity does not exist, Defence staff planning the curriculum in accordance with higher guidance and contracting subject-matter experts on a fee-for-service basis is a lean and effective alternative. This approach comes with a higher degree of risk than other methods. It presumes access to academic and government presenters without paying the overheads associated with a permanent faculty staff. For countries with limited resources, and access to numerous quality educational institutions, this approach is viable and effective. Further, the flexibility this 'virtual' faculty approach provides allows CDSS to change presenters and content, whereas with an in-house faculty CDSS would be limited to content reflecting the expertise of the academic staff.

How best to nurture andragogy, self-awareness, judgment and confident decision-making?

In general, there is widespread agreement that the colleges provide a curriculum based around the enhancement of the following student skills and capacities:

- Capabilities in strategic critical thinking
- Capabilities in excelling in positions of strategic leadership
- Skills in formulating and executing strategy and policy, and
- Skills in joint warfighting, theatre strategy and campaign planning.[36]

Knowledge of Defence process is only important to the extent that it provides context for the application of strategic leadership skills. The key skills to be developed in the students are personal—critical and creative thinking to resolve complex, strategic problems and relationship skills to achieve effective solutions to complex, strategic problems. However, the applied demonstration of these skills is conducted in a team environment, so the capacity to lead, organise and influence runs through every course curriculum.

Most colleges encourage the consideration of complex problems in vague, uncertain, chaotic and ambiguous situations that allow students to exercise their critical and creative thinking capacity and to exercise judgment to progress issues. For selection on senior residential courses, professional mastery, technical expertise and intellectual ability are presumed prerequisites. What appears to distinguish the exceptional student and future strategic leader is their ability to align these strengths with a mastery of emotional and social intelligence.[37]

Active learning opportunities, such as seminars, exercises and visits, are used to enable students to discuss, debate and demonstrate these capacities in a collegiate environment. In particular, these approaches maximise opportunities for self-learning and learning from peers in an adult learning environment. One of the Australian DSSC experiences consistently rated highly by students is the opportunity to 'learn from each other'. This approach appears to be commonly accepted in the colleges visited but it does contrast somewhat with the practice of rote and passive learning teaching.

Even so, senior PME is distinguished by the desire to focus beyond academic studies to the development of student capacities in self-awareness, judgment and the confidence to make decisions about complex and formidable problems. Some colleges, such as the US Army War College and more recently the DSSC, provide specific programs to nurture self-awareness, judgment and the confidence to decide. The focus is on 'developing resilient leaders who understand relationships and communication, and who can manage themselves and others with wisdom, creativity and values'.[38] The DSSC strategic leaders' program seeks to go 'beyond the self awareness and self mastery competencies and incorporates applied empathy and skilled interpersonal interaction necessary for transformational and outstanding military leadership'.[39]

There is widespread agreement among the colleges that strategic leadership skills are best developed through a curriculum that enhances skill in formulating and executing strategy and policy, strategic critical thinking, excellence in strategic leadership, and skill in strategy and campaign planning. This learning is nurtured through creating a tolerant PME environment that encourages:

- Personal critical and creative thinking skills
- An awareness of the higher and broader security environment
- Relationship skills and the building of a cohort of future strategic leaders through learning from each other
- The development of, and reflection on, personal strategic leadership philosophies and characteristics
- A willingness to experiment with complex issues
- A tolerance of diversity, and
- A tolerance of trying and failing, as long as that failure leads to greater personal awareness and enhanced strategic leadership skills.

Improving capability through technology

Technology can be used to make these excellent learning programs available to the far larger numbers of senior officers that also need them. A great deal of educational technology already exists. Learning management systems, such as Blackboard or Moodle that can make the curriculum content available on-line, are already widely employed in the civilian education sector and internally in most of the US PME institutions.

Providing course material on-line enables the self-starter learner to 'pull down' those aspects of course material that they deem appropriate to their development. Individual, proactive learning is thus encouraged and empowered. The proliferation of electronic devices and the proficiency of younger generations (who are 'digital natives' rather than 'digital immigrants') to access 'pull' systems on-line will only increase in the future and this needs to be anticipated and accommodated by the PME institutions.

The broad and inclusive nature of 'pull' systems is accepted but college concerns over control, legal and copyright issues and 'duty of care' must also be addressed. Technology can make course materials more widely available but currently there is no capacity for the institutions to measure the effect that their materials are having. Materials could be misunderstood, misapplied or deliberately used for purposes that they were not intended. As the colleges have responsibility and accountability for the materials they provide, this is a reasonable but not insurmountable concern.

While the residential approach may be too exclusive for the 'information age', an open 'pull down' system is too unstructured and open to weaknesses and misuse. What is needed is to evolve the current residential 'push' system and to add a registered and monitored on-line 'pull' stream. In this controlled 'pull' stream, students who have been vetted and registered could access certain course materials for educational purposes. Access to these materials could be caveated to address legality, copyright and intellectual property issues. There are additional costs and risks but the potential outcome of skilling the wider workforce makes it worth the risk and the effort.

Taking the key points from the above discussion, a number of observations can be made. First, PME courses are primarily designed to develop strategic leaders. Second, they require a hybrid teaching pedagogy that is part-art and part-science to meet the needs of two customers—the students and the government. Third, while active teaching is the preferred pedagogy, it is government resourcing that dictates the teaching model of who gets to learn, who gets to design the curriculum and who gets to teach. Finally, technology may provide the opportunity to outmanoeuvre resource constraints and expand the student audience.

How does the Australian approach compare internationally?

The benchmarking visit was an excellent opportunity to compare the DSSC with counterpart courses in Canada, the US and UK. Overall, the visit confirmed that there is no single 'world best practice' and that the DSSC approach, student demography and curriculum are appropriate to the Australian context and current guidance. In total, the DSSC addresses the coverage of the counterpart courses visited and is more focused on preparing its graduates to work immediately at the strategic level across the breadth of a Defence or security organisation.

While initiatives such as the US Army War College's 'Leadership, Health and Fitness' program are worth emulating, no major curriculum gaps were noted. The opportunities for greatest improvement of the DSSC in the mid-term are in staff development, raising the standard of technology support for the course, and better articulation of DSSC course and governance arrangements for external audiences.

What the Australian DSSC does well

The areas in which the DSSC rates very highly include student networking and relationship building at both the joint (navy, army, air force and public service) and international level, a consistent exposure to critical thinking to solve complex problems, understanding the broader political and institutional context for decision making at the strategic level, joint planning particularly in regard to military strategic planning for operations, and investment in self-awareness and personal leadership styles.

Institutionally, the DSSC is also the leanest of all the PME models and therefore rates well in efficiency, careful use of resources and value for money. The delivery arrangements make the course highly agile and adaptable to new opportunities. Governance arrangements also make the DSSC very responsive to higher guidance and student and academic feedback. The DSSC has a very clear focus on achieving a military capability effect through PME.

Areas for improvement

There are, however, a number of areas where the DSSC could improve. First, in comparison with the other colleges, the DSSC is weak in its Australian multi-agency representation, which needs to be redressed. Marketing, persuasion and innovative partnering for curriculum activities with the ANU's National Security College will help but top-down direction to all security agencies to invest in and prepare their potential strategic leaders in the inter-agency security space is also needed.

Second, while creative thinking is practised through all the practical activities and exercises in the course, more emphasis could be placed on enhancing this often overlooked aspect of leadership. Almost by definition, complex problems at the strategic level are not fixed by the application of status quo process. It requires some 'out of the box' thinking, often based around compromise, excellent communication and an ability to re-frame a problem to mutual advantage. Like each of the courses, the DSSC needs to continue to insert creative thinking opportunities into its curriculum.

Third, despite the use of external subject-matter experts to deliver the course, staff qualifications and staff development appear underdone in comparison with most of the other colleges. Formal preparation of staff in facilitation skills will be introduced in 2012 to address this. Another approach is to build a resident faculty of military scholars and on-site academics to support the DSSC and other ADC learning centres. The highly-regarded Australian scholar Dr Michael Evans is currently used in this capacity to great effect. There is an issue of short term feasibility; however, a pool of military scholars with relevant practitioner experience and PhDs could well be developed over the next ten years or so.

Fourth, the approach of reading-based, student-led syndicates is attractive and the DSSC should continue to increase its percentage of active learning opportunities above 75 per cent

of the course. However, the DSSC is not resourced to fully adopt the syndicate approach. The breadth of the current curriculum and the large international element of the student body do not support a reading-based course which requires overseas members, many with English as a second language, to read, absorb and debate over 100 pages of course material a day.

Fifth, and significantly, most US colleges and Australian universities and schools already use learning management systems to deliver course materials on and off campus. The ADC, including the DSSC, will shortly adopt such a system. The related use of tablets (such as i-Pads and similar electronic devices) also needs to be explored. Through the selection of an appropriate learning management system, and appropriate training and resources, the ADC would be well situated to lead the Australian Department of Defence into a structured, modern, accessible learning environment.

Sixth, it may be useful to consider the value of a process such as the US 'Officer Professional Military Education Process' in regard to guidance to Commander ADC for the entire PME continuum. Most nations describe PME in five levels of development (the DSSC and its counterparts are at level 4 on the continuum). This sequence is clearly articulated by the Canadian and US colleges. It may be useful for the Australian PME continuum also to be described in five levels aligned with the North American example.

Finally, governance arrangements at CDSS could be better explained and marketed. Those US colleges with in-house delivery and degree conferral have well established, articulated and staffed governance arrangements. By comparison, the DSSC could better articulate its purpose, function and governance arrangements for outside audiences. Inter-college contact on these issues would be helpful.

Areas that require greater attention

There are several other issues that require attention. These elements do not relate to the DSSC but to gaps in the Australian PME continuum. The first is the failure to invest in Defence public servants as a military capability; the second is a gap regarding the preparation of warfighting commanders at the operational level and the third is a missed opportunity to continue the systematic leadership development of senior officers after they complete DSSC.

The development and employment of public servants

Unlike the military students, there is no alignment between professional education and the future employment of public service graduates of DSSC. With the exception of the current Secretary of Defence, the commitment of many senior public servants to investing in, and preparing, their subordinates for strategic leadership through professional education is unclear. Some appear to believe that 'on-the-job training' is sufficient and that investment in professional education is unnecessary. Also, managers do not 'own' their workers in the same way that the Defence Force does; civilian defence personnel could well be educated and then leave the department, making managers reluctant to spend the resources required.

The 'master-apprentice' approach is strong in many agencies but it is not appropriate to the Department of Defence. There is a logic in this approach for line agencies, where each day they are fully engaged in their job. However, this reasoning does not transfer to security and Defence responsibilities, where much activity is invested in planning and preparation

to enable smooth execution when and if required. The failure to invest in the education of senior public servants as a warfighting capability, and to plan their career paths accordingly, is striking in comparison to the attitude of the Services and the way in which they employ their DSSC graduates.

An operational warfighting command course

There is currently no course in the PME continuum that specifically prepares likely officers for warfighting command at the operational level. This is a critical military capability vulnerability and a large reputational risk. To address this gap, selected 05/06 officers in, or identified to assume, command of our principal combat units or key planning appointments at operational headquarters should attend such a course. It is these leaders who are the most likely to be chosen to command a task force or battle group on operations in the short to mid-term. Recent experience is that Australian commanders exercise warfighting command roles on operations mainly at the 05 or 06 level and generally before attendance at the DSSC. Those deployed on operations after DSSC generally exercise national command in-theatre or are in senior staff appointments on coalition or UN operational or strategic headquarters.

The aim of an 'Operational Warfighting Command Course' would be to hone joint and inter-agency warfighting planning and command skills within a strategic context. The course would be classified and students would be primarily ADF, with Defence public service and inter-agency representatives from organisations likely to deploy on operations with the ADF, and some officers from allied nations. Course content would focus on campaign planning and war-gaming the operational command of joint forces within a strategic context (similar to the previous focus of the UK Higher Command and Staff Course).

The outcome would be to develop warfighting commanders who have a 'top-down' understanding of the strategic context and the ability to leverage with potential partners in the national and international security communities. The participants 'will need to master the science and tools of campaign warfare and to wield them with wisdom and artistry'.[40] The likely duration of such a course would be three months, with a heavy emphasis on campaign planning procedures, war-gaming of joint assets in an international setting and analysis of historical case studies. It would probably need to be conducted annually for a panel of eight to 15 officers.

Post-DSSC senior leader development

In regard to post-DSSC senior leader development, top-down involvement and guidance is required. While some larger nations continue with shorter 07, 08 and 09 level residential courses, for Australia this is largely unnecessary as officers are integrated into the strategic level from 06 rank and the small numbers of senior officers do not warrant large or long courses. Structured coaching and mentoring programs that further develop the emotional and social capacities of senior officers to be effective in highly political, inter-agency and international strategic settings are likely to be more productive and cost-effective and valued by the participants.

Working from the baseline established by the DSSC personal leadership development program, senior officers could be coached and, in some instances, mentored as they progress in rank or are posted to appointments that require new skill sets, awareness and social or emotional techniques. The DSSC leadership program identifies the individual's personal leadership style, develops an individual leadership development plan and, in some cases, introduces an executive coach to assist the student implement the plan. From this base, structured continuation of coaching and mentoring managed by the individual in conjunction with the personnel agencies should not be difficult. A critical enabling element will be better alignment and communication between personnel agencies and CDSS in regard to the development of individual officers.

Conclusion

Overall, the 2011 benchmarking visit confirmed that the Australian DSSC approach to senior PME is appropriate for Australia's current circumstances. Designing an Australian solution focused on the Chiefs of Service Committee-directed mission is entirely consistent with the approach of other professional military colleges. The coverage of the curriculum is similar to the other colleges with a shared emphasis on strategy, strategic context, leadership, critical and creative thinking frameworks, multi-agency and international cooperation.

No significant gaps were noted in either the DSSC curriculum or the desired student demography. However, in practice, the DSSC does not have sufficient inter-agency representation. Opportunities for improvement of the DSSC were noted in staff development, the use of technology both to support the students and to make material available to other senior officials, and in the promotion of the DSSC program and its governance measures to external audiences.

More broadly, what became apparent from the visit is that the Australian PME continuum has gaps below and above the DSSC that need to be addressed. Between the Australian Command and Staff Course for 05s and the DSSC, there is a need for a 'Joint Warfighting Commanders Course' targeted at selected officers in the 05-06 level. After the DSSC, there is a need for structured and funded coaching and mentoring programs to continue the professional development of selected officers. Throughout the continuum, there is also a need to educate public servants to achieve an improved Defence capability effect.

Joint PME has a crucial role to play in developing the intellect and skills of our senior military leaders so that they can operate to their full potential. With new senior leaders in the Department of Defence, it is timely to reconsider how we can make the education opportunities for the profession of arms more relevant for the contemporary global environment.

DISCLAIMER

This work is the sole opinion of the author, and does not necessarily represent the views of the Centre for Strategic and Defence Studies or the Department of Defence.

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NOTES

1. This is a slightly edited version of an article published as a Shedden Paper in March 2012 by the Centre for Defence and Strategic Studies at the Australian Defence College.

2. This paper refers extensively to documents in the possession of the author gathered during the September 2011 CDSS Benchmarking Visit. For an earlier discussion on the topic of Joint PME, see the special edition of the *Australian Defence Force Journal*, No. 181, 2010.

3. The staff involved were the then Principal, Dr Alan Ryan, and the author in his capacity as the Director of Curriculum Development.

4. For those interested, see in particular the US Marine Corps University series of publications that concisely enunciate its strategic plan, governance, academic and administrative arrangements. These documents include the 'Marine Corps Professional Military Education Continuum', March 2010; 'Marine Corps University Strategic Plan 2011 – 2016'; 'Marine Corps University Factbook 2010-2011'; and the Southern Association of Colleges and Schools, 'The Principles of Accreditation', 3rd Edition, Decatur GA, 2008.

5. Charles Style, Commandant of the Royal College of Defence Studies, London, 22 September, 2011.

6. Simon Williams, Senior Directing Staff, Royal College of Defence Studies, London, 22 September 2011.

7. See Douglas E Waters US Navy (Retd), 'Understanding Strategic Thinking and Developing Strategic Thinkers', *Joint Force Quarterly*, Vol. 63, 4th Quarter, 2011, pp. 113-9, for an excellent discussion on the US Army War College strategic thinking course.

8. Table derived from materials in the possession of the author, many of which were gleaned during the benchmarking visit.

9. John R. Ballard, Dean National War College, 'National War College Curriculum Overview Brief', Fort Lesley J. McNair, Washington DC, 13 September 2011.

10. Harry Lee Dorsey, Dean Industrial College of the Armed Forces, 'Industrial College of the Armed Forces Brief' Fort Lesley J. McNair, Washington DC, 13 September 2011.

11. Materials provided by Bill Spain, Associate Provost, US Navy War College, Newport Rhode Island, 16 September 2011. Spain quotes Admiral G. Roughead's testimony to the US Congress House Appropriations Committee of 6 May 2009, where he states that the Naval War College is 'the center of maritime thought in the world and naval thought in the world'. Students are developed for strategic leadership but that leadership is also clearly intended to serve a 'saltwater' focus. The priorities of the US Navy War College's mission are navy, maritime and national. Similar land-centric material was provided on the US Army War College Mission to 'develop, inspire and serve strategic leaders for the wise and effective application of national power ... emphasising the development and employment of land power'. Material provided by William Johnson, Dean US Army War College, Carlisle Barracks, Pennsylvania on 15 September 2011.

12. Students complete a survey of their DSSC course at the end of each year. The survey is vetted independently and externally to the CDSS by the Strategic Evaluation and Review Section, Directorate of Joint Education and Training Services, Australian Defence College.

13. For example, in an excellent recent article in *Orbis*, Joan Johnson-Freese (Joan Johnson-Freese, 'The Reform of Military Education: Twenty-Five Years Later', *Orbis*, Winter 2012, pp. 135-53) draws attention to the academic deficit in PME, where the Colleges are criticised because they are not producing strategic thinkers in a purely academic sense. However this overlooks the crucially important role that retired senior military, not to mention civilian, personnel have in coaching, mentoring and nurturing strategic leadership skills.

14. Quote attributed to the Skelton Report, cited in US House of Representatives Committee on Armed Services Subcommittee on Oversight and Investigations, 'Another Crossroads? Professional Military Education Two Decades After the Goldwater-Nichols Act and the Skelton Panel', Washington DC, April 2010, p. 64.

15. Committee on Armed Services, 'Another Crossroads?', p. 64.

16. See Committee on Armed Services, 'Another Crossroads?', pp. 68-70.

17. The 'value for money' argument is of course a key concern for governments. Even though Australia has so far weathered the global financial crisis relatively unscathed, towards the end of 2011, the new Australian Secretary of Defence, Mr Duncan Lewis, announced that his priorities for Defence were 'supporting our people on operations; providing the Government with the best Defence capability we can; *delivering value for money* for the Australian taxpayer; and professionalising our workforce.', *Defence Magazine*, No. 5, 2011, p. 4 [emphasis added].

18. Committee on Armed Services, 'Another Crossroads?', pp. 64-71.

19. Committee on Armed Services, 'Another Crossroads?', pp. 64-5.

20. Avi Kober, 'What Happened to Israeli Military Thought?', *Journal of Strategic Studies*, Vol. 34, No. 5, October 2011, p. 727.

21. Johnson-Freese, 'The Reform of Military Education', p. 138.

22. Refer to Table 1.

23. Material provided by Paul Lyall, Director HCSC, 'Director HCSC Intent Statement', 21 September 2011.

24. Material provided by Lyall, Director HCSC.

25. Material provided by Gary Hatton, Deputy Commandant, Canadian Forces College, Toronto, 12 September 2011.

26. Committee on Armed Services, 'Another Crossroads?', p. 11.

27. The percentage of overseas students on the 2011 US college courses were National War College 15 per cent, Industrial College of the Armed Forces 9 per cent, US Marine War College 8 per cent, US Air War College 17 per cent and US Navy War College 19 per cent. Source material in the possession of the author.

28. Craig Orme, 'Military Education in the Information Age: an Australian view', paper delivered to the Forum of Presidents of the Sino-Foreign Military Institutes, Nanjing, China, 25 October 2011, pp. 11-2.

29. Orme, 'Military Education in the Information Age', pp.11-2.

30. Material provided by John W. Jaeger, Vice-President of the National Defense University, Fort Lesley J. McNair, 13 September 2011.

31. Material provided by Bill Spain, Associate Provost, US Navy War College, 16 September 2011. Student enrolments for the Naval/Joint non-resident programs for 2011 were 4,070.

32. Ratio material provided by Harry Dorsey, Dean Industrial College of the Armed Forces, 'Industrial College of the Armed Forces brief,' Fort Lesley J. McNair, Washington DC, 13 September 2011 and drawn from the US Navy War College, President's Report, Spring 2010, Newport, Rhode Island, p. 52 provided by Bill Spain, Associate Provost, US Navy War College on 16 September 2011.

33. Material provided by Hatton, Canadian Forces College.

34. Material provided by Christina Goulter, Defence Studies Department, King's College London, 21 September 2011.

35. Material provided by Simon Williams, Senior Directing Staff, Royal College of Defence Studies, London, 22 September 2011.

36. Articulated in the 2011 CDSS Mission Statement, and in US Chairman of the Joint Chiefs of Staff Instruction, CJCSI 1800.OID dated 15 July 2009. Appendix A to Enclosure A and Appendix D to Enclosure E.

37. Material provided by Rebecca Wade-Ferrell, Organisational Psychologist, Centre for Defence Leadership and Ethics, Australian Defence College. At CDSS, emotional and social intelligence are defined as 'the ability to recognise your own feelings and the feelings of others, to motivate yourself and others, and to manage your emotions and the emotions of others skilfully'.

38. Material provided by Lyall, Director HCSC.

39. Material provided by Wade-Ferrell, Centre for Defence Leadership and Ethics.

40. Material provided Lyall, Director HCSC.

Universities, Research and China's Military Modernisation

Philip Keller

Introduction

China's higher education system has experienced rapid changes over the last two decades. Traditional analyses of the education systems of developing countries tend to focus on the economic and social implications of improved education. However, ongoing interest in China's defence spending and military modernisation raises questions about the relationship between China's maturing academic community and its national defence.

This article aims to answer three questions. First, what is the Chinese Government's view of higher education as it relates to defence and military matters? Second, how has China shaped its education policies in furthering its defence research and development (R&D)? And third, how has China adapted its academic system to improve professional military education?

Background

Beijing has invested heavily in reforming and building up the nation's institutions of higher education over the last two decades. The root of these reforms date to China's opening up in 1978. However, the last two decades have seen a planned acceleration of education reforms. In 1995, for example, China started its 'Project 211' to improve 100 Chinese universities by 2010, committing over US$1.25 billion to the initiative. In 1998, 'Project 985' was launched, aimed at developing a dozen 'world class' universities, with China's education minister asserting that the project's plan was to expand the global influence of Chinese education.[1]

The most stunning trend in Chinese higher education has been the sheer output. In 1995, Chinese colleges and universities issued about 650,000 bachelor degrees; by 2007, this number had increased to 4.5 million.[2] Nevertheless, Chinese college graduates are still a small percentage of its 1.3 billion citizens.

The improvements in China's education system occurred during a period of military modernisation. China's recent military modernisation has roots in Western military operations during the 1990s and 2000s. During these two decades, Beijing witnessed the US military's capability to apply technology on the battlefield, with US and allied operations in Iraq, Kosovo and Afghanistan particularly verifying fears of its own outdated military.[3]

Since then, and in support of China's military development, the People's Liberation Army's (PLA) University of Foreign Languages has developed a Chinese translation of the US Department of Defense's *Dictionary of Military and Associated Terms*, which 'explain[s] new ideas and concepts in military science, diplomacy, engineering, meteorology, communication and intelligence'.[4]

Historical relationship between universities and the PLA

China has connected research at academic institutions to military affairs and national defence since at least the 1980s. The roots of this policy date to 1978, at the National Science Conference in China. At this forum, Chinese strategic weapons scientists convinced their leaders of the need for a stronger emphasis on the study of science.[5] China's military requirements continue to influence academic institutions in China. According to China's Ministry of Education (MOE), the MOE continues to 'coordinate and supervise higher education institutions in the implementation of state key scientific and research programs and national-defense scientific-tackling [sic] programs'.[6]

In the 1980s, Chinese leader Deng Xiaoping institutionalised the relationship between Chinese universities and the PLA, while also shifting the PLA's emphasis from nuclear to conventional weapons development. The latter included diversifying defence technology to include 'automation, biotechnology, energy, information technology, lasers, new materials, and space technology'.[7] To achieve progress in these high technology fields, Deng put former weapons designers in charge of all science and technology development.[8]

In March 1986, this body of research was formalised as the 'National High-Tech R&D Program' or '863 Program' which, according to China's Ministry of Science and Technology, aimed 'to achieve breakthroughs in key technical fields that concern the national economic lifeline and national security'.[9] Originally intended to last 15 years, the program continues to run 25 years after its inception.[10]

US policy makers have noted the connection between China's academic research priorities and the PLA. According to former US Deputy Assistant Secretary of State Evan Feigenbaum, 'the military and its technical programs have also exerted a powerful influence on the course of scientific education and training in China'.[11] According to Feigenbaum, strategic technology programs 'constitute a critical link between purely domestic economic policy agendas and the international strategic concerns so central to Chinese decision-makers'.[12]

China's education policy and access to foreign research

In addition to prioritising domestic university R&D, China has carefully shaped its education policies to foster connections with foreign R&D efforts. China shapes its higher education policy to maximise opportunities for absorbing knowledge from foreign institutions. The roots of this philosophy are reflected in a phrase coined by Zhang Zhidong in the 1880s, namely 'Chinese learning for morality, Western learning for utility'.[13] As early as the 1980s, China placed emphasis on sending graduate students abroad in order for them to return with professional skills.[14] Recent trends indicate the continuing focus on science and engineering fields.

In the 1990s, the number of students sent abroad by China increased rapidly (see Figure 1), with emphasis on 'harness[ing] the vast scientific potential represented by the large community of Chinese researchers working overseas'.[15] Between the 1980s and 1990s, Chinese expatriate students shifted from studying languages to science and engineering, suggesting China is on better footing for engaging foreign scientific communities.[16] Needless to say, Chinese R&D in both military and civilian industries will stand to benefit.

Figure 1: Chinese Graduate Students Studying Abroad
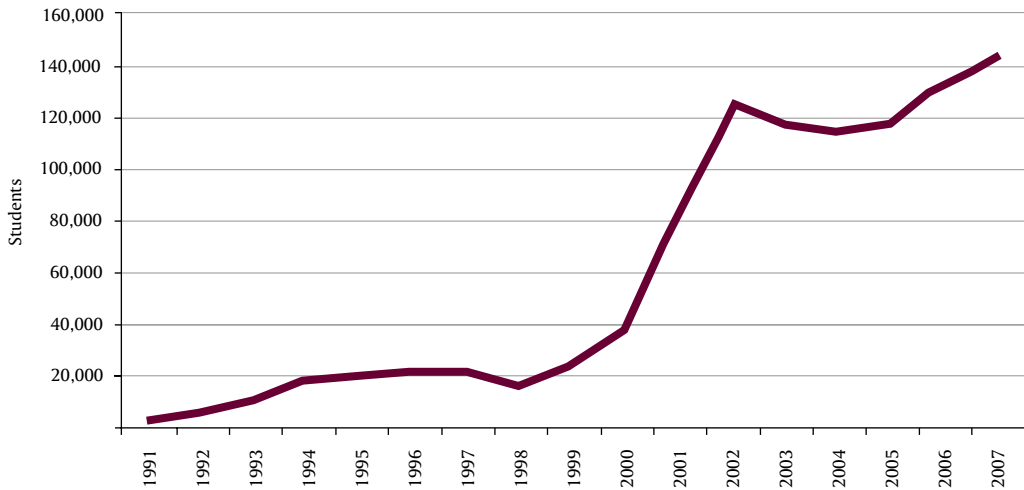
Source: National Bureau of Statistics of China, *China Statistical Yearbook 2008*: see
<http://www.stats.gov.cn/tjsj/n> accessed 15 March 2012.

Chinese education policy is designed to encourage foreign study. In 2002, China ended a policy that required students to work in China for five years before pursuing graduate education abroad.[17] Beijing also established a scholarship program aimed at helping Chinese students earn doctoral degrees in the US, UK, France, Japan and Germany.[18]

Chinese language curriculum requirements are also designed to facilitate study abroad. In the 1970s, most Chinese university students studied Russian but the majority now study English.[19] According to J.R. Cowan, a scholar specialising in Chinese education:

> … the Chinese view English primarily as a necessary tool which can facilitate access to modern scientific and technological advances, and secondarily as a vehicle to promote commerce and understanding between the People's Republic of China and countries where English is a major language.[20]

English language skills are important to the Chinese Government, as evidenced by the Ministry of Education's inclusion of an oral English exam in China's college entrance exam.[21] Similarly, the Chinese Army's military academies include English-language examination in their entrance exam, which constitutes 17 per cent of the grade.[22]

China's facilitation of foreign study through scholarships and language preparation would not help its human capital if expatriate students did not return to China. Hence, China encourages their return through a financial incentive program, as well as its 'Spring Sunshine Program', which assists returning students in finding a job.[23]

Unsurprisingly, a number of these returning students are directed towards Chinese defence research. According to Tai Ming Cheung, a scholar who specialises in the relationship between technology and China's defence, 'expanding access to foreign technological knowledge, products, and practices, both in the military and civilian sectors, has had far-reaching impacts in promoting the technological development of the Chinese defense innovation system in

the reform era'.[24] He notes that the Chinese also have an interest in 'acquiring and absorbing foreign technology that complements and supports indigenous weapons R&D'.[25]

Adapting the Western model for military R&D

In addition to fostering academic relationships with foreign universities, which may benefit both civilian and military industries, China has adapted a Western model for defence research at universities. The close relationship between China's academic community and the PLA includes using research laboratories to develop defence technology. According to a US Government report, 'the PRC's defense industrial policy has integrated military and civilian efforts, including work at military and civilian universities'.[26] This is not unique to China; the US spends millions on defence research at its universities.

China's interest in leveraging civilian laboratories for defence technology is modelled after the US. According to Wanhua Ma, a Chinese scholar:

> During the late 1980s and early 1990s, the US Federal Government's financial support of university research influenced the scientific research system reform in China. The most commonly used examples are the Lawrence Berkley National Laboratory, the Lawrence Livermore National Laboratory, and Los Alamos National Laboratory in the University of California system.[27]

The laboratories referenced by Wanhua Ma find their roots in the US nuclear weapons programs of the Second World War. As the Cold War ended, these laboratories adapted to new research areas, such as biotechnology and super-computing. According to the Association of American Universities, over 300 US colleges and universities now conduct research for the US Department of Defense. Civilian research has benefited US military power, such as where 'industrial, academic, and government in-house laboratories produced … radar and sonar, synthetic rubber, proximity fuses, the ENIAC [the first computer], and the atomic bomb'.[28] US success using academic institutions to support defence research suggests that China's similar approach will help modernise the PLA.

Professional military education

Beyond R&D, China's universities are poised to help it develop a professionalised cadre of both commissioned and non-commissioned officers (NCO) with high technology skills, similar to the US military.

Chinese leaders recognise that education reforms can provide benefits to China's military. According to China's Ministry of National Defense, Guo Boxiong, the Vice Chairman of the Central Military Commission, noted 'that college and school education is a vital ingredient of military training and likewise a main channel for turning out competent personnel'.[29] Beijing wants a new, smarter PLA that is technically proficient and educated.

Thomas Johnson, writing at the US Army War College, has noted that 'in the latter half of the 1990s, technical proficiency and military aptitude have become more valuable than political reliability and personal connections'.[30] It seems clear that China's leaders believe that improvements to human capital will help the PLA move towards its doctrinal goal of fighting 'informatised' wars, much like US military capabilities that rely heavily on rapid electronic communications.

The respected defence commentators Anthony Cordesman and Martin Kleiber contend that China's military strategy hinges on two basic principles: 'active defence' and 'localised wars under conditions of informationisation'.[31] According to a US Department of Defense report, 'The Military Power of the People's Republic of China 2005'[32], the first principle refers to China developing its military to counter potential and perceived threats. This is a rather intuitive principle, since a nation's military is generally intended for defence.

The second principle is more relevant to universities and their relationship with military modernisation. It expresses China's inclination towards what the US calls 'net-centric warfare' and 'information warfare', embodying Beijing's recognition that high technology is a deciding factor on the battlefield. The same report states that 'this new concept sums up China's experiences and assessments of the implications of the revolution in military affairs—primarily the impact of information technology and knowledge-based warfare on the battlefield'.[33] This view suggests that the PLA will need more officers familiar with high technology to succeed at the new military strategy.

It is also evident that China's military modernisation will be education intensive. In 1995, Chang Mengxiong, a Chinese scholar, wrote:

> Warfare in general will not only become more a mental than a physical contest in which the technology content is high, but this will also be the case in limited warfare and even in soldier-to-soldier combat. This means that the education and technical skills of military officers in the future information society will have to be higher than that those of civilians; otherwise, even with information-intensified weapons, defeat in war will be possible.[34]

The PLA's military modernisation will rely heavily on China's academic institutions for education and R&D. Without China's increased investments in education, the PLA would not have sufficient human capital or organic technology capability to fully modernise. According to Justin Liang and Sarah Snyder, writing for the US Army War College, 'as systems become more complex and gaps between PLA service programs widen, the human elements of China's military—officer training, education and mobilisation—have become an increasingly important part of the modernization equation'.[35] This view implies that the PLA needs high technology and, moreover, personnel who can successfully use it in order to pose a challenge to foreign powers.

The quality of education of the PLA may affect how China uses its military power in the future. China's military modernisation needs educated personnel in order to implement new doctrine, utilise new technology to wage war, and grow as a military power. According to a US Government report in 2006, the PLA's capabilities were 'not as great as its inventory of weapons alone might suggest', because of shortcomings in 'well-educated and well-trained personnel', among other factors.[36]

To address this issue, China has been reforming its military academies in order to produce better military leaders. Since 1978, education has become more important to military education than Marxist-Leninist ideology.[37] In the last decade, the PLA's emphasis on a 'smarter officer' has become even more apparent. According to the defence scholar Kristen Gunness:

> … a fundamental imperative that undergirds nearly all of the PLA's aspirations is the requirement to produce and train a 'new PLA officer' with the requisite education and technological savvy to fight the 'new type of war' that Chinese strategists believe they will face in the future.[38]

China has also implemented educational reforms that directly address the issue by leveraging civilian institutions. For example, in order to bring in more educated officers, the PLA has set up recruitment stations on civilian university campuses.[39] In June 2009, the PLA raised its maximum age for enlistees to 24, in order to enable enlistment of recent college graduates, who receive a refund of their college tuition and preferred placement at graduate schools following their military service.[40] This approach is similar to the US military's *GI Bill*, which provides tuition assistance for veterans. These simple reforms will permit the PLA to benefit from China's investment in civilian universities over the past 15 years.

China has also developed a new educational pipeline that utilises civilian universities to produce educated military officers. This program is called the 'National Defense Education Program',[41] which began in 2000. According to China's Xinhua News Agency, approximately 65,000 PLA reserve officers were educated at civilian colleges as part of China's efforts 'using science and technology to strengthen the army'.[42] By 2006, the 'National Defense Education Program' included 116 schools and incorporated 'military training and field exercises into high-school and university coursework'.[43] According to Liu Bin, the PLA General Political Department's director of the officer training bureau, Chinese universities involved in the program have a special fund for a combined, year-round academic and military education.

Ultimately, the PLA plans to have 60 per cent of its officers educated through these programs, instead of military academies.[44] According to the Liang and Snyder, approximately half of the PLA's officers already come from civilian universities, mostly with backgrounds in engineering.[45] This suggests that the PLA is succeeding at using civilian institutions to equip itself with better educated officers for fighting modern wars.

A number of commentators have observed that China's 'National Defense Education Program' is modelled after the 'Reserve Officer Training Corps' (ROTC) scheme in the US, a common military training program at many US universities. A brief analysis of the benefits that ROTC programs provide to the US military may provide an indication of how, if at all, the 'National Defense Education Program' will change the PLA.

In the US, civilian institutions are viewed as a valuable source of education for military officers. Between 1996 and 2005, around half of all new US Air Force officers were ROTC graduates.[46] Although ROTC programs are the same duration as any bachelor degree, the programs can be flexible in the number of officers they supply to the military. Unlike military academies, which are fixed in size, ROTC programs can easily change by admitting more or fewer civilian students. As long as they can recruit candidates, they can produce a desired number of officers. Since China has essentially created a clone of the ROTC program, it could be concluded that future wars will put less of a strain on the PLA's officer corps. This may make Chinese military more resilient in future wars, as they have developed a flexible method for creating educated military officers.

In addition to commissioned officers, China's investments in education are having a positive effect on the PLA's NCO corps. Improvements to China's education infrastructure are providing the PLA with the human capital necessary to raise the standards for its NCOs. The PLA intends to develop smarter, more professional NCOs who can act as 'strategic tacticians', with the education and training to better utilise strategic principles in influencing and informing their battlefield decision-making.[47]

The Chinese military now requires NCOs to have a professional certification. The PLA has also leveraged the growing number of students attending degree programs.[48] After partial completion of their studies, these students can join the PLA for two years and serve as an NCO. Since China's civilian universities include some military education for all students, students who enlist in the PLA can bypass some training, saving the PLA time and money. At the same time, they bring their knowledge, skills, and abilities from school to bear on the PLA's modernisation. These students are rewarded upon returning to their civilian schools, receiving full tuition reimbursement.[49] In order to compete with the job market for educated personnel, the PLA also recently raised salaries 80-100 per cent for NCOs, which will help the PLA retain qualified personnel as it modernises.[50]

These 'smarter' soldiers are expected to help the PLA transition towards its goal of fighting modern wars. The PLA's new policies on NCO education may also increase Chinese leaders' confidence that the PLA's human capital is comparable to that of the US military. When combined with their improvements to command staff and commissioned officer educational requirements, the policies testify to the PLA becoming a 'smarter' army.

This may factor into any future confrontation with the US, as a more capable PLA may lower the threshold for confrontation by increasing Chinese leaders' confidence in their military capabilities compared to the US. Conversely, a better-educated PLA may decrease the risk of confrontation by providing China's civilian leaders with better informed analysis of the consequences of military action. It could also increase the credibility of the Chinese military in Asia, increasing China's regional influence and deterrent capability.

Conclusion

Statements made by Chinese officials, military leaders and scholars suggest that China views its higher education system as integral to its military modernisation. Chinese national policy places a high priority on aspects of academic research and higher education that may benefit its military. This is similar to US approaches to military-academic relations that preceded the Second World War.

China has shaped its university research laboratories to be similar to the weapons development laboratories of the US. The successful record of the US in using academia to bolster military development implies that China's military modernisation will benefit from this research relationship. In addition to domestic research efforts, China has carefully crafted its higher education system to encourage the export of students and subsequent importation of knowledge gathered during their overseas studies. This has been a product of deliberate education policies in the areas of financial incentives and language curriculum.

Finally, the Chinese military has learned to apply the Western model of professional military education to the PLA. The PLA aims to leverage civilian investments in the university system to benefit the development of a professional cadre of technically-skilled commissioned officers. The Chinese have also re-shaped their military NCO corps to benefit from higher education, aiming to have a modern, high technology military like that of the US and its allies.

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Book reviews

The Shaping of Grand Strategy:
policy, diplomacy and war

Reviewed by Squadron Leader Travis Hallen, RAAF

For the editors of this book, 'grand strategy is a matter involving great states and great states alone'. However, understanding grand strategy—'the nexus of political and military strategy'—is critical to any sovereign state's success on the international stage; relative 'greatness' only changes the potential influence of a nation's strategic actions.

If the reader can adjust their frame of reference and look past the book's aim of providing historical lessons for modern American policy makers, they will appreciate this excellent collection of essays on the strategy of leaders from Louis XIV to Truman, as an excellent introduction to the interaction between policy, diplomacy and military action in shaping the fate of any nation.

Readers can be forgiven for believing that lessons with relevance to the modern audience would be limited, given the differences in strategic situation between today and 17th century France, Bismarckian Germany or even inter-war Britain. However, the editors' emphasis on analysing the processes that have shaped 300 years of strategic decision-making, rather than on the decisions themselves, has focused the contributing authors on drawing out lessons of statecraft and strategy that have enduring relevance, irrespective of a nation's geographic or political position.

The book's starting point is the *grand siécle* of Louis XIV. Lynn's examination of Louis' strategy during his 72-year reign establishes a number of themes that are developed through subsequent chapters; notably the folly of unilateralism, the role of reputation, the need for strategic flexibility, the importance of the narrative, and the chimerical nature of absolute security. Although the strategic environment evolved over the course of the periods examined, the underlying importance of these themes has remained constant, and the quality and insightfulness of Lynn's analysis of 17th century Europe means it is difficult for the reader not to refer back to it to appreciate some of the lessons identified by the other authors.

For Louis XIV, as for most leaders, the security of his regime was of paramount importance. Lynn's chapter stresses this, stating that France's position—'almost in the middle of the most considerable powers of Christendom'—made the quest for absolute security a key driver behind France's strategic policy. Unfortunately, Louis' decision to 'protect his frontiers, not by alliances, but instead with stone and iron', coupled with his inability—or unwillingness—to control the strategic narrative, led defensive actions, such as the seizure of Luxembourg in

1684, to be viewed by other powers as a quest for imperial aggrandisement. The result was nearly continuous conflict during Louis' reign.

Lynn's description of Louis' ill-considered unilateralism is placed in stark relief by Jones' analysis of the skilful statesmanship of Bismarck. Jones portrays Bismarck as the ultimate pragmatist, focused on the long-term goal on ensuring the security of the Prussian regime, stating that 'Bismarck's genius ... lay not in his adherence to a systematic program or plan but in his expert navigation of uncertain events through intuition and broad experience'.

Nowhere is this pragmatism more evident than in Bismarck's conflict with Moltke over whether to press the offensive onto Vienna following the Prussian success at the Battle of Könnigratz. Where the military saw tactical and operational success, Bismarck saw strategic failure in the decline of Austria, leading to instability in Eastern Europe, and Prussian growth provoking 'the involvement of other major powers'. Underpinning this Bismarckian pragmatism was the belief that '[a]bsolute security is a foolish illusion in the history of strategic affairs'. This understanding of and focus on managing the strategic implications of unfolding events defined Jones' Bismarck as one of history's most successful strategists and a role model for modern policy makers.

Bismarck's exit from the grand strategic stage marked the beginning of a chain of events that would ultimately lead to the outbreak of the First World War. For Britain in particular, the end of the European 'concert', the rise in colonial competition, and changes in the balance of power—not just in Europe but also in Asia and the Pacific—marked the beginning of the end of British imperial power.

The book's final four essays track this decline and the corresponding growth of American power and influence. What is significant in this analysis of post-Bismarck strategy is the influence of democracy on the states being considered. Although democracy plays a major role in the power and stability of the British and American state, it poses a number of challenges to strategists, most notably the requirement to manage the strategic narrative in the domestic as well as the international political arena.

First raised by Black in his examination of British strategic culture during the Seven Years' War, public support is identified as a key consideration for strategic policy development in democratic regimes. Sinnriech identifies this relationship when dealing with pre-First World War British policy, stating:

> … given the impact of public sentiment on policy making in a democracy, nothing is more essential to strategic success than political consensus on the geopolitical, economic, and military conditions in which statesmen pursue grand strategy.

Inter-war politics reinforced the complexity of this challenge as British politicians struggled to balance war-weariness and economic depression with the growing threat of a resurgent Nazi Germany. This balance proved too difficult and, as Murray points out in his chapter on British grand strategy between 1933 and 1942, 'British leaders consistently failed to address grand strategy in the 1930s'. The result of this failure was 'Appeasement', a resoundingly popular policy at the time, but now seen as the exemplar of grand strategic ineptitude.

Hitler's unrelenting push for European hegemony would eventually force British policy makers—led by Winston Churchill, himself not without blame for Britain's lack of preparedness—out of their strategic lethargy. In his analysis of Churchill's subsequent success at the strategic level, Murray highlights Churchill's Bismarckian pragmatism and control of the narrative to suit his needs. The staunch anti-Communist's willingness to support the Soviet war effort against Hitler, and the decision to attack French ships in North Africa, are used by Murray as examples of Churchill's focus on ends rather than the means in his decision-making process. However, it was Churchill's ability to manage the domestic narrative both in the UK and US that offers the most interesting insight provided by Murray. Churchill and Roosevelt both understood the importance of the American public's role in achieving an Allied victory.

Roosevelt's challenges differed markedly from those of his British counterpart. Lacey's examination of American strategy between 1940 and 1943 highlights Roosevelt's ability to first 'manipulate' an isolationist public and legislature to provide invaluable support to the British, while remaining within the bounds of US 'neutrality', and, once the US had entered the war, to manage the conflicting operational priorities of the European and Pacific campaigns. Roosevelt's deft management of these political and military challenges to craft what on its face appeared a coherent national strategy was critical to the eventual Allied victory. However, Lacey closes his chapter by noting that Roosevelt 'never really had a firm idea of exactly what kind of world he wanted to bring forth during the postwar era'. Managing the Allied victory, as it were, would be the responsibility for the final statesman examined in the book, Harry Truman.

Gray's chapter on the shaping of American Cold War strategy leaves the reader with the impression that Truman was an accidental statesman who, through no small amount of luck, managed to get 'the "big things" right enough'. Unlike in the analysis of statesmen in previous chapters, Gray's analysis of Truman highlights the nature of strategy as a collective concept, for as the saying goes 'the enemy gets a vote'. According to Gray's assessment of the Cold War, 'most of the architecture of post-war Western security was constructed with large bricks representing egregious errors by Stalin'. Truman's strength lay in his sound judgment and willingness to trust his capable lieutenants in the development and execution of strategic policy.

While the editors of this book argue that it is the 'great states' that bear the burden of grand strategy, the reader cannot help but draw the conclusion that it is in fact the men and women behind the states that are the key. The influence of a leader's personality on shaping grand strategy shines through in each chapter of this well written and well researched book. From the megalomania of Louis XIV, to the 'charismatically ordinary' Truman, it is the way in which the leaders of 'great states', and their lieutenants, view the world and their place in it that shapes the strategic world in which we live. After reading *The Shaping of Grand Strategy*, the reader can't help but wonder how the names of Obama, Romney, Putin, Hu and Xi may be reflected in the years to come.
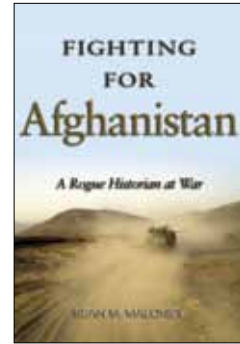
Fighting for Afghanistan: a rogue historian at war

Sean M. Maloney
Naval Institute Press: Annapolis, 2011
ISBN: 978-1-5911-4509-7

Reviewed by Lieutenant Colonel Gavin Keating, Australian Army

One of the keys to successful counterinsurgency operations is in understanding the perspectives of the key actors involved, be they the insurgents, the counterinsurgents or the prize for which they vie, the local population. The perspectives of the Western counterinsurgents fighting in the latest war in Afghanistan were influenced, at least initially, by the experiences of previous foreign interventions, notably by British and Russian forces.

For many, however, it is the US' experience of the last ten years that has dominated the current Western perspective, notwithstanding that the perspectives of smaller contributors are naturally also shaped by their own particular experiences. Sean Maloney's *Fighting for Afghanistan: a rogue historian at war* provides a uniquely Canadian perspective on operations conducted in southern Afghanistan during the summer of 2006. As the book makes clear, this was a particularly critical time in the evolution of the campaign, as NATO moved to expand its presence in the country while confronting a revitalised enemy.

The author is a current professor of history at the Royal Military College of Canada and historical adviser to the Canadian Chief of the Land Staff for the war in Afghanistan. *Fighting for Afghanistan* is his third book outlining his experiences in the country. The first two cover the period 2003 to 2005 but Maloney writes 'for me nothing will ever match the drama and the violence of that long, hot dangerous summer of 2006'.

Maloney focuses specifically on two organisations. The first is Combined Task Force (CTF) AEGIS, a Canadian-led multinational brigade headquarters charged with commanding Regional Command South (RC South). The RC South area of operations at this time covered the provinces of Kandahar, Helmand, Nimroz, Zabul, Uruzgan and Daykundi. Kandahar and Helmand, in particular, remain key locations for the Taliban insurgency. By 2005, NATO's expansion of its operations in Afghanistan was in threat of stalling, as many of its member nations were reluctant to accept the risks associated with operating in the south.

CTF AEGIS, commanded by Brigadier General David Fraser, was Canada's contribution to filling this void. It was a marked departure for a country which had traditionally associated itself with UN peacekeeping operations. CTF AEGIS eventually commanded five battle groups from five separate nations (US, UK, Romania, Netherlands and Canada). Maloney's second focus is on Task Force (TF) ORION, the Canadian mounted battle group, based on the 1st Battalion, Princess Patricia's Canadian Light Infantry. TF ORION also included the Canadian Provincial Reconstruction Team stationed in Kandahar.

The aim of Maloney's book is to 'capture the brigade-battle group "slice" of the action: what it was like to fight in Afghanistan, how the two commanders envisioned the campaign, and what actually happened on the ground'. He certainly succeeds in achieving these objectives. A large proportion of the book is spent describing in detail TF ORION's operations throughout southern Afghanistan, a number of which were designed to support the deployment of Dutch forces into Uruzgan and British forces into Helmand.

Of particular note is the section on the battle of Pashmul in Zharey, in early July 2006, which was the Canadian Army's first battalion-sized action since the Korean War. During the attack, Maloney was embedded with one of the assault companies and his description of the ensuing fight, against a well-entrenched Taliban force of company strength, clearly benefits from his virtual participation in the combat. Commander CTF AEGIS subsequently banned him from observing operations below battle-group headquarters level. Likewise, his description of surviving a vehicle-borne improvised explosive device attack on a Canadian convoy transiting through Kandahar city is compelling.

His broader comments on CTF AEGIS's conduct of operations are astute and show the benefits of an academically trained and relatively detached observer having wide access to key commanders and their staffs. Maloney describes in detail the difficulties associated with understanding the intricacies of local Afghan politics and the dynamic interrelationships between the numerous local actors, particularly within Kandahar city. His comment on the problem of distinguishing between Taliban and criminal violence in the south—and that the 'Kennedy assassination was straightforward compared to all this'—deserves to be quoted extensively.

The second and third order effects of pressures placed on the Kandahar Provincial Reconstruction Team, to be seen to produce instant development results, are also insightful. The description of 'Emergency Response Program' money as development 'heroin' ('short-term glow, long-term pain') neatly depicts one such issue. Others issues, such as generally poor coordination between special forces and conventional operations, the tensions between counternarcotics and counterinsurgency efforts, the pressures associated with applying rules of engagement and the security risks associated with cooperating with the Afghan National Security Forces (particularly the police) are all well covered.

Many of the topics featured in Maloney's narrative are not, however, particularly unique to the Canadian experience in Afghanistan. What distinguishes his account from many others, and makes it particularly interesting for Australian readers, are his insights into the difficulties of a medium power providing formation-level leadership in a coalition dominated by larger nations. Fraser reported to the US major general commanding Combined Joint Task Force 76 (CJTF 76), encompassing both RC South and RC East.

It was at times an uneasy relationship, particularly in the beginning, when the different national approaches to formation operations clashed. Fraser's job was made more difficult by the instructions of the Canadian Chief of Defence Staff to 'help repair relations with the Americans' at a time when they were 'wounded in a way' not seen since the Iranian Revolution. Maloney compares what he believes was the CJTF 76 campaign plan of 'sanctuary denial' to the multi-pronged Canadian approach of focusing on improving governance, and securing the population while building increased Afghan capacity to do so, and improving the delivery of development initiatives. As he comments, while both approaches ultimately tried to achieve the same aim, access to the enabling resources dictated which methods were given priority.

The difficulties experienced by the Canadians in gaining fixed wing and rotary wing aviation support are mentioned on a number of occasions, a situation that the author notes was exacerbated by his own Government's reluctance to deploy integral helicopter support. Maloney also believes that because CTF AEGIS lay largely outside the US system, its ability to influence the deployment of Afghan National Army units to RC South was severely limited.

The book also comments on the difficulties of managing the multinational aspects of ISAF's operations within RC South itself. The significant military and national cultural differences between the contributing nations 'could sometimes be as deep as the differences between Westerners and Afghans' and required 'a leadership style more like Eisenhower's than Patton's'. Maloney is particularly critical of the British contribution to RC South's operations. 2006 saw a substantial build up of British forces in southern Afghanistan, including TF HELMAND, based on the 3rd Battalion, Parachute Regiment (3 Para), and BRITFOR, the national command and logistics element.

Ostensibly TF HELMAND was commanded by CTF AEGIS but the relationships between these organisations, and between AEGIS and BRITFOR were, in Maloney's opinion, seriously marred by personality conflicts and British domestic political pressures. He assesses that the initial British deployment was predicated on a fundamental misunderstanding of the security environment and that the 'precarious British position in Helmand [throughout much of 2006] was propped up on several occasions by both Canadian and American forces brought in from elsewhere'. These comments make for interesting reading when compared against some of the narratives that have emerged from the British perspective, such as that produced by the then Commanding Officer of 3 Para.

Fighting for Afghanistan is written in an informal but highly readable style, and is interspersed with considerable humour. Maloney openly acknowledges that his story is highly personal and not 'traditional narrative'. His esteem for his Canadian military colleagues is clearly evident throughout. He closes his acknowledgments by stating that '*Fighting for Afghanistan* is the best I can do to put you into the fight, so you can see our people in action in one of the toughest combat environments in the world'. Maloney's book is just one of an ever growing number that contribute to providing different perspectives on the present war in Afghanistan. The fact that this particular perspective is provided by a 'rogue historian', from a nation that 'punched above its weight', makes it all the more valuable.
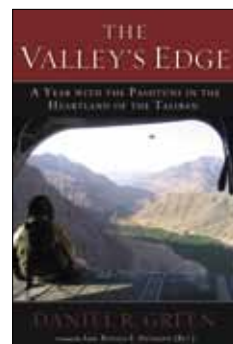
The Valley's Edge: a year with the Pashtuns in the heartland of the Taliban

Daniel R. Green
Potomac Books: Dulles Virginia, 2012
ISBN: 978-1-5979-7694-7

Reviewed by Dr Ian Wing

This is a personal memoir of a relatively young and idealistic man who served two tours of duty in Afghanistan. His first, in 2005-06, was as a US Department of State political adviser to a provincial reconstruction team located at Tarin Kowt. His second, in 2009-11, was as a US Navy officer serving in the US Embassy in Kabul.

The bulk of the book takes place in and around Tarin Kowt, in Oruzgan province, during Green's first tour of duty. This makes the book of particular relevance to ADF personnel who wish to improve their understanding of Australia's primary area of operations in Afghanistan.

Military history—and military memoirs in particular—tend to be rather dry and even boring. This is not the case with *The Valley's Edge.* Green writes in a fast-moving and conversational style that makes the book readable and accessible. He paints a vivid picture of the early stages of the development of the international effort at Tarin Kowt. He introduces each person that he encounters with a pithy anecdote or short description that brings them to life for the reader. Selected black-and-white photos contribute to the reader's appreciation of the situation. When colleagues and locals are killed, the reader gains a genuine feeling of empathy from the author.

The book reveals that many of the operations conducted in Afghanistan were outstandingly successful. But others have been plagued with disappointments. Green points to unrealistic expectations and a lack of resources as the main problems. Other issues that receive attention are corruption, threats of violence and a lack of cultural awareness. Green doesn't pull any punches in his descriptions of some of his colleagues.

Green spends considerable time describing the Afghan political situation and the leading Pashtun figures who were operating in Oruzgan during his tour. He vividly describes how the Taliban steadily gained in strength and how, as a result, provincial security declined. The book also provides a brief description of the challenges experienced by the Dutch and Australian units when they arrived at Tarin Kowt in 2006. It also mentions some of their engagements with the Taliban.

The final chapter of the book covers Green's return to Afghanistan after three years elsewhere. Green recounts his return visits to Tarin Kowt and comments approvingly on the progress that had made with provincial security. Despite this progress, Green takes a negative tone in his prognosis for Afghanistan.

The book closes with two appendices and a useful index. Appendix A provides some thought-provoking ideas on Afghan politics in Oruzgan. Appendix B provides a counterinsurgency political strategy for Oruzgan province that was prepared in 2006. Although somewhat dated, the second appendix is likely to strongly resonate with ADF personnel who continue to undertake counterinsurgency operations in that area.

This book is recommended for ADF personnel who have served in Afghanistan and those who are yet to deploy.

Fire Support Bases Vietnam: Australian and allied fire support base locations and main support units

Bruce Picken
Big Sky Publishing: Newport NSW, 2012
ISBN: 978-1-9219-4154-2

Reviewed by Dr Noel Sproles

Fire bases were an integral part of the Vietnam experience for most members of the 1st Australian Task Force (1ATF). Their very mention brings back memories of noise, heat and lack of sleep, as well as dust or mud, dependent on the season. To those who experienced them, their very mention is as evocative of the Vietnam War as is the sight or sound of a Huey helicopter. But despite this, detailed discussion of fire bases is rarely to be found in the volumes of the official history of Australia's involvement in Vietnam. *Fire Support Bases Vietnam* is an attempt to fill this gap in our military history by naming and describing all the fire bases occupied by 1ATF from 1965 to 1971. As well, it includes those fire bases of our allies which were used to support 1ATF operations in this period.

The author's aim is to provide a guide for those wishing to locate the fire bases on the ground before all evidence of their existence disappears. In the process, he also aims to describe how the fire bases supported operations in the field. Along with the fast disappearing physical evidence, fading memories make it difficult to remember all the details of where, when and why fire bases were established. Probably with this in mind, the author has been careful in the way he structured the book so as to facilitate the search for individual fire bases.

Each chapter covers six months of operations, and each operation in that period is listed by name and placed in the chronological order in which it was mounted. The fire bases used in that operation are then recorded along with their grid reference, when they were established, and the major units or sub-units which occupied them. This is supported by indexes and appendices which reference fire bases, operations, units and areas of operation. The daily routine of life on a fire base is briefly described and good quality black-and-white photographs record activities likely to be seen on a typical fire base.

Considering the intention to facilitate the finding of locations abandoned over four decades ago, the use of grid references alone to determine their position is problematic. It assumes access to maps of that era which, even if available, would probably be of little use now due

to the development that has taken place since the war ended. Supplementing these grid references with a coordinate system suitable for use with GPS, or for searching on applications such as Google Earth, would have been an improvement.

To achieve this, the grid references provided must be transformed, which is not a difficult process but does require some specialist knowledge. Having done this transformation, and using the diagrams available in the official history, I was able to identify on Google Earth the position of the weapon pit that I occupied at Fire Base Coral in May 1968. I imagine that this is similar to what other veterans would want to do, so the time and effort needed to transform the grid coordinates would have added significantly to the book's appeal.

Vietnam veterans and their families may well find this book of more interest than the official history. Whereas the latter deals with policy and strategy and outcomes, *Fire Support Bases Vietnam* deals more with the war as experienced by the individual soldier. Not many will recall what generals may have discussed between each other on a particular day, but thousands will remember the operations they were engaged in and the fire bases they lived on. As a result, this book can expect to come under intense scrutiny and be subjected to more detailed criticism than most books. It is certainly the approach that I took in reviewing it. In 1968, I served 'outside the wire' on five of the fire bases mentioned, one on two separate occasions, and so concentrated my review on that year and those fire bases. Unfortunately, I feel that the book does not stand up well to such scrutiny.

The dust jacket refers to it as a 'meticulous documentation' of fire bases, which implies that the data has been checked and cross-checked. Instead I found errors of fact concerning two of the fire bases I served on. Fire Base Bearcat's coordinates place it 100 kilometres out of position and details of an attack on Fire Base Grey are not as recorded in the Commander's log, a primary reference. Five operations mentioned in the official histories as being mounted in 1968 are not mentioned in the book and no explanation for this discrepancy is provided. At least one operation is shown as being mounted by a unit different from the one shown in the official history. Some of the definitions in the glossary of terms and abbreviations, while correct in as far as they go, are incomplete and potentially misleading. There are also errors in the terminology used to describe units, including the listing of an Australian unit as a New Zealand unit.

The title to Appendix 9 indicates that it is intended as a list of Australian units only but, incongruously, it includes the New Zealand artillery battery. Yet, although two New Zealand rifle companies formed part of the Anzac battalions, they are not listed in their own right either in this appendix or in that part of the index listing units. Appendix 9 shows a lack of thought in its preparation, in not making clear each country's individual contribution to 1ATF. However, I could not really see the use for much of it anyway. What was the purpose in listing units that never operated from a fire base or in providing a glossary of terms that are not critical to the narrative? Removal of such extraneous material would have reduced the likelihood of errors and dispute relating to matters irrelevant to the purpose of the book.

While many of these errors may be more annoying than critical, there are those that are significant and go to the credibility of the book. If there are two errors from just five fire bases examined, and six discrepancies with the official history over the course of just one year, what is there to be discovered in other years and with other fire bases? One result is that these errors and omissions, when considered together, reduce the reader's confidence in the overall

reliability of the information presented. Another result is to question why the book, in its present state, was included in the Australian Army History Collection, an enterprise ostensibly guaranteeing rigour in the work it includes.

Bruce Picken has correctly identified a niche area in our military history that needed to be explored. He has organised his book well, making it easy for the reader to track down individual fire bases, although providing a modern set of coordinates for them would have greatly enhanced his work. I enjoyed searching for 'my' fire bases and using Google Earth to see what they look like today. If he had spent more effort on some of the finer aspects of its presentation, and in a rigorous checking of his data, he could have produced a reference work of great value. Not only today's reader but future generations of historians would have applauded him for his effort. His failure to do so has only left him open to unnecessary errors that detract from what is essentially a good piece of work. As it stands, this book is a great opportunity missed.

Sub: real life on board with the hidden heroes of the Royal Navy's silent service

Danny Danziger
Sphere: London, 2011
ISBN: 978-1-8474-4470-7

Reviewed by Commander Robert Woodham, RAN

This is an engaging read, which paints a comprehensive picture of life as a submariner in the Royal Navy, but it is somewhat let down by errors and inconsistencies. The book is structured around 39 interviews with members of the ship's company of HMS *Torbay*, one of the Royal Navy's Trafalgar-class attack submarines, a couple of wives and girlfriends (the crew is all-male), two senior officers who are submariners, a contractor and a US Navy exchange officer. The book appears to be based on a transcription of the spoken words of the interviewees, which have been nicely crafted by the author to improve readability while retaining the personal feel of the spoken word.

By taking this approach, Danny Danziger has skilfully captured the human stories and provided an intriguing insight into the unusual and challenging life of a submariner in the Royal Navy. A number of common themes emerge, including the partners struggling with families at home, never sure when their men are going to return, and for how long, and the submariners whose love for their work overpowers the urge to give it all up. At times, this seems to be a compulsion that they cannot even explain themselves. There are touching moments too, and humorous interludes, such as Rear Admiral Mark Anderson's recollection of the informality of his early days in diesel boats, which he likens to 'underwater yachting'.

Through the course of the book, a fair amount of detail emerges on the systems and procedures of the Trafalgar-class boats. This spans weapon systems, principally the Tomahawk land-attack missiles and heavyweight torpedoes, sensors such as the 2076 sonar suite, the propulsion system, atmosphere control, daily domestic routines, and examples of how the submarine is

typically employed both on operations and in exercises. By talking about their experiences in other classes of submarine, the officers and men of HMS *Torbay* also provide insights into life in the wider submarine community.

Perhaps inevitably, since the text is based on the spoken word, there are some garbled sentences which do not make any sense technically, and it is a shame that these have not been re-phrased. One example of this is found in the sonar chief's chapter, which contains a short section on ocean acoustics, consisting of a meaningless concatenation of jargon. Perhaps the author was let down in this regard by the Royal Navy, who presumably vetted the book prior to publication. The best example of muddled text is found on the back cover, which starts off by describing the Trafalgar-class attack submarines, but wanders into the world of the Vanguard-class nuclear missile boats without saying that it has done so. The result is a jumbled description of two very different classes of submarine, which nonetheless appears to be referring only to the Trafalgar-class.

The book contains a number of errors too. Examples include the statement that 'there is absolutely no alcohol on board, a rule that exists on every Royal Navy vessel', which is certainly not the case. In any event, this statement is contradicted elsewhere by stories of drinking tots of rum and whisky on board, and receiving crates of beer from an American submarine. The description of the ocean currents through the Straits of Gibraltar is upside-down, as anyone who has watched 'Das Boot' will know, and the ceremonial procedure of 'piping the side' is also incorrectly described. In fairness, most of these errors will probably cause occasional irritation to Navy readers, but otherwise pass unnoticed.

If this book were unearthed in 1,000 years time as the only record of the Royal Navy at the turn of the 21st century, it would prove invaluable as a concise and fascinating record of life as a submariner, spiced with insights into the broader social history of the time.
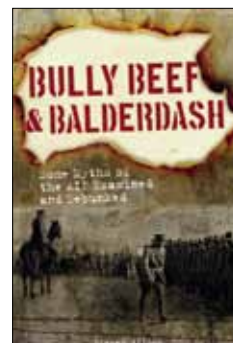
Bully Beef & Balderdash:
some myths of the AIF examined and debunked

Graham Wilson
Big Sky Publishing: Newport NSW, 2012
ISBN: 978-1-9219-4156-6

Reviewed by Lex McAulay

It might be a comment on the dearth of Australian military matters left to be examined that several books on military myths have appeared in quick succession.

In *Bully Beef & Balderdash,* Graham Wilson has selected 12 myths of the AIF and demolished each with overwhelming attention to detail. These myths are:

- the C.E.W. Bean creation that the great majority of the ranks of the AIF diggers were bushmen, who were natural-born world-class soldiers, rough-riding sharpshooters, who were inured to hardship and who took to battle with zest;

- that the AIF was the only all-volunteer force in World War 1;
- that intelligence was non-existent for the Gallipoli landing;
- that the Aussies shot their horses in 1918;
- that the AIF lived on bully beef and biscuits all day every day;
- the Battle of the Wazzir;
- the story of Salvation Army Chaplain William McKenzie;
- that most of the force at Gallipoli was the Anzacs, rather than only a part of an Allied operation;
- that Lieutenant Alfred Gaby, VC was exhumed for a photograph;
- that Catholics were barred from winning the Victoria Cross;
- that the AIF was all combat units, with no Australian logistics force in support; and
- Beersheba was the last cavalry charge in history.

Some of these 'myths' already have been dealt with in other books and magazines, with at least two in the Australian War Memorial magazine, *Wartime*. Others, such as McKenzie and Gaby, might be known only to World War 1 history enthusiasts. Rather than myths, widely current in the population, these last two seem to be merely subjects of dissent among those in the military history fraternity.

Chaplain William McKenzie, who is included in the *Australian Dictionary of Biography*, apparently is the subject of anecdotes mainly repeated by Salvation Army historians, that he brought several thousand men to Christ, led charges at Gallipoli armed with a shovel, was involved in or was responsible for the 'Battle of the Wazzir' riot, and that his award of the Military Cross was a very rare distinction for a chaplain. Although Wilson shows none of these is true, is McKenzie an 'AIF myth' in the sense that he is a household name?

Lieutenant Alfred Gaby was killed on 11 August 1918 and his award of the Victoria Cross was made on 28 October. As no photos of him were known to exist at that time, allegedly the grave was located and he was exhumed, cleaned, placed in Service Dress, and photographed. The reality was that he had been buried for 11 weeks in summer, going into autumn, so decomposition certainly would have begun. That anyone would give a moment's credence to the claim that a man—presumably only wrapped in a blanket, buried in warm damp soil for that length of time—would still appear 'intact' for a photograph indicates a high level of gullibility. Apparently debate rages over this, hence its inclusion, but is it of the status of a 'myth' about the AIF?

Given that the subject of the book is mythology of the AIF, one presumes readers already have good knowledge of the AIF, so it is unnecessary to include a 42-page history of the AIF, with organisation down to company level.

The 'natural born world beater' bushman warrior described in Bean's volumes has received attention over recent decades as it is so obviously false. Wilson easily demolishes this myth, with an analysis of the civilian backgrounds of members of infantry and mounted units across Australia. Poor marksmanship was a cause for concern and the pre-war effect of the government-sponsored rifle clubs and military cadet units as providing a basis of experience for times of need was questioned.

Again, the allegation that the Gallipoli landing went ahead with little or no intelligence information possessed by the planning staffs is shown to be false; intelligence information was available and included relatively good reports from aerial reconnaissance.

Similarly, the 'Battle of the Wazzir' is shown by Wilson's research to have been greatly exaggerated at the time and since, often on the basis of letters from soldiers, sometimes nowhere near Cairo, repeating hear-say. Relatively few people were involved and the disturbance petered out rather than being put down by military force. These two myths are worth debunking.

The claims that 'ancestor X' was denied a Victoria Cross because of his religious persuasion is along the lines of similar family tales that the recommendation was destroyed in a bombardment or the dispatch rider taking it to the rear disappeared in a bombardment, or that the Victoria Cross was denied because of his ethnic background. Wilson quickly demolishes this one by presenting the known religious denomination of all our World War 1 recipients of the Victoria Cross, demonstrating that a total of 15 Catholics are among them, with over 60 awards to Catholic British officers and men before World War 1.

The claims about Beersheba as the last cavalry charge deserve demolition and Wilson does so thoroughly, pointing out that Polish cavalry actions in 1920 were decisive, that they again were in action against the Germans in 1939, and that Italian cavalry was in action in 1942 against the Soviets. Like the solid achievements of the AIF in 1915-18, Beersheba does not need grandiose claims to ensure its place in Australian military history.

The book simply is overloaded with confirmatory detail in each chapter. Whether readers will dutifully plough through every table or chart, every quote or extract, when the point has been made and re-made, is questionable. For example, in a 62-page chapter on the subject, there are ten ration scale tables for different times and places—indefatigable research but over-kill. There are ten pages of order of battle of the British and French forces at Gallipoli, down to battalion level. As mentioned, 42 pages on the AIF organisation are included.

While South Africa, India and Newfoundland also had all-volunteer forces in World War 1, it is necessary only to state that in a sentence for each, with reference to the relevant government acts, rather than include 26 pages of detail, including the 1914-18 war experience of the Newfoundlanders. This is a book about AIF myths, after all.

Bully Beef & Balderdash is a monument to painstaking research, over some years, but the book is about three times larger than need be to prove the points made in demolishing the selected myths. Some do not need a chapter; a paragraph would suffice. Wilson has not only 'screwed and glued' each presentation to ensure it is solid, but also bolted, bonded, riveted and welded each of them.

Nevertheless, *Bully Beef & Balderdash* is a contribution to the efforts to clear away the growth of exaggerations and plain old yarns that have tended to obscure the defeats, hardships and triumphs of the AIF, in the way that Craig Stockings' *Bardia* presented that battle in clear view. Wilson's next book deals with the mythology surrounding Simpson, the man with the donkey at Gallipoli.
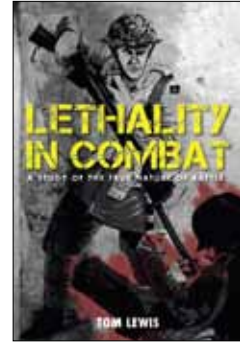
Lethality in Combat: a study of the true nature of battle

Tom Lewis
Big Sky Publishing: Newport NSW, 2012
ISBN: 978-1-9219-4151-1

Reviewed by John Donovan

During a Memorial Day address in 1884, the American Civil War veteran Oliver Wendell Holmes commented that he and his fellow war veterans had 'shared the incommunicable experience of war. In our youths, our hearts were touched with fire'.[1]

Tom Lewis' book is addressed largely to those whose hearts have not been 'touched with fire'. He aims to educate them—and particularly those in authority and the very many commentators who attempt to influence them—about the realities of war. In this he has a difficult task, as few in modern Australia have served in the armed forces, even as reserves, and even fewer have been under fire.

Lewis focuses on the role of the armed forces, to defeat their country's enemies in the shortest practicable time and with the minimum of friendly casualties. He notes that minimising enemy casualties in the short term might be counter-productive, if a war then becomes extended and total friendly and enemy casualties are thus increased. For Lewis, the idea of 'proportionality' must consider the alternative possibility of greater casualties.

Lewis uses examples from previous wars to demonstrate the essential nature of war, and to give readers some understanding of the pressures on soldiers on a battlefield. He shows that survival depends on behaviours that many, unaware of battlefield realities, might find repugnant. This point was made by George Patton, quoted in the book, when he said to his soldiers that 'Your job is not to die for your country. Your job is to make some poor bastard die for his'. This essential point seems lost on some modern community 'leaders'.

Shooting or bayoneting wounded enemy before passing by them might seem wrong to observers who are unaware that wounded enemy have frequently taken up their weapons to shoot soldiers who had moved past them. The prevalence of this practice among wounded Japanese soldiers during the Pacific war might explain why so few were captured. Ensuring that risk is minimised also seems essential when fighting an enemy that favours suicide tactics, or does not routinely wear uniforms or display distinguishing marks as required by international law. Lewis contends that it is reasonable to kill an enemy who refuses to surrender, to minimise the risk to friendly personnel.

Lewis shows that actions sometimes described as desecrating enemy dead (perhaps by kicking them) can have a compelling logic, as an alternative to the use of a bullet or bayonet to ensure that the enemy soldier is no longer a threat. Some of the other actions he describes, however, seem to go beyond battlefield necessity.

Lewis also demonstrates that there is logic to treating an enemy well, if this treatment might ensure that friendly soldiers are also treated well. He does not explore in detail the likelihood that this practice will be effective in a war between ideologically irreconcilable enemies, one of which is determined to conquer absolutely the other.

Lewis concludes by proposing that international law should reflect the realities of combat, rather than an idealised view of human nature. He makes his case forcefully, showing that warfare is an ongoing part of the human condition, in which seeking maximum effectiveness is the task of the soldier (and sailor and airman and -woman; noting that although the book focuses on land combat, there are discussions of naval and air operations). He does, however, have a tendency to hammer his point home excessively and the repetition of essentially similar stories can cause a degree of mental overload. Well worth reading, despite the difficult style.

NOTES

1. Quoted in Eric Bergerud, *Touched with Fire, The Land War in the South Pacific*, Viking Penguin: New York, 1996.
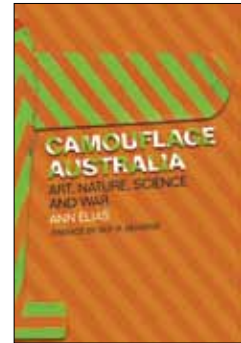
On-line book reviews

Camouflage Australia: art, nature, science and war

Ann Elias
Sydney University Press: Sydney, 2011
ISBN: 978-1-9208-9973-8

Reviewed by Dr Hank Prunckun

If it were possible to tell the story of the historical development of security, such a study would likely show that humans in primitive times initially sought ways to preserve their lives from the hazards posed by the wilds of nature. Apart from providing protection from the ravages of the elements, physical security no doubt provided a guarding mechanism that protected against hostile beasts, as well as other humans who might have been competing for the same piece of land or the same resources.

It is impossible to know for sure but it is not unreasonable to suggest that before structures and fortifications were employed for security, man used what he saw other creatures use to protect themselves—camouflage. That is, the use of camouflage as a tactic to make things disappear.

Camouflage is a simple but effective method of creating an illusion. It is a method of taking something that exists and, with the application of art and science, it can be made to vanish. Of course, the object does not actually disappear, it is simply disguised. But it is disguised to the extent that the object cannot be seen or, when seen, it is too late to offer advantage.

In her book, Dr Elias takes the reader through a fascinating history of the use of camouflage by Australians. Using extensive archival records, Elias tells the story of how various optical tricks and visual illusions were designed by some of Australia's most prominent artists and designers in order to protect military and civilian assets during war. Her research is based largely on documents rich with insightful information, such as never-before-published photographs. The study not only examines the use of camouflage in the Second World War in Australia and the Pacific theatre, it also sets these developments in the wider context of what was transpiring in Britain and America with regard to camouflage.

With an academic background in art, Elias has been able to bring a level of understanding to this subject that has hitherto not been achieved. Her extensive research into the interplay between the theories of nature and society, and how the phenomena of war impacted on artists is central to this perception.

But the history of how camouflage developed was not a smooth road. Elias argues that it was fraught with tension between those who practised the craft and those who doubted its effectiveness. Some questioned the role those with creative interests could play in warfare and found it difficult to understand the role artist and designers could play in fighting the enemy. Nevertheless, history has demonstrated not only their usefulness, but the essential function

they played in understanding the complexities between the behaviours and aesthetics of animals, then applying these findings to the practical craft of concealment and deception which, after all, is one of the pillars of counterintelligence.

Elias' book is not only a major contribution to the understanding of this form of defensive warfare but is also a significant contribution to the history of art (yes, camouflage is an art form). It demonstrates that even in an era of remote-controlled drone attacks and cyber warfare, the art and science of camouflage still has an important place in defensive tactics. And, as this reviewer would argue, it plays a key role in offensive counterintelligence operations.

Camouflage Australia is well written and nicely presented text that contains dozens of monochrome and colour photographs and illustrations that support the underlying history and analysis. It is recommended for anyone who is interested in the tactic of invisibility, as well as anyone interested in tactical manoeuvres. In my view, this text fills a void that has long existed in the subject literature—and fills it with distinction.

Black Ops, Vietnam: the operational history of MACVSOG

Robert Gillespie
Naval Institute Press: Annapolis, 2011
ISBN: 978-1-5911-4321-5

Reviewed by Jim Truscott
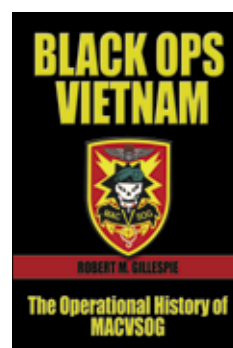
This year-by-year history is a long overdue account of a joint US and Vietnamese independent command, which fought valiantly for nine years from 1964 until 1973—and which sadly was not awarded a Presidential Citation until 2001. All US members of MACVSOG (Military Assistance Command Vietnam Studies and Observations Group) were volunteers, with many performing incredible feats of valour. There were a huge number of operations conducted, which the author adroitly summarises in annual information chunks through headquarter contributions, individual battle stories, plans, intelligence gained, ground, cross-border, maritime, air, airborne, recovery and psychological operational summaries and various specific geographic and other mission profiles.

While many of the stories of individual actions and battles are not new, the author places them in chronological context, with some analysis of their relative impact on the war. Its publication is timely as we face 'Afghanisation'—and all involved politicians and generals should read it for that reason alone. Vietnam was a strategic failure from the outset. The book accurately describes how the lack of a theatre approach essentially meant the strategy was really just to outlast the communists, but that time was on the side of the North Vietnamese. From a MACVSOG perspective, apart from cross-border reconnaissance, it would seem that almost all their other mission profiles were not aligned to this overarching strategy, flawed as it was.

The chapter describing the transition from the French (and CIA) to US military control, and early constraints on operating in North Vietnam and Laos, is striking and deserving of a book

by itself. Without crucial CIA assistance, the build-up of experience and capability is described as a helter-skelter approach. The headquarters of MACVSOG itself in Saigon was based on service building blocks rather than functional lines, so it grew topsy-turvy.

The author argues that the US Government's operational constraints on engaging in covert activity in Laos and North Vietnam were compounded by the direct command of MACVSOG from the Pentagon, to assuage the White House, and the lack of an unconventional mindset by MACV to the point of their total indifference as to what SOG could contribute. The author states that the US Ambassador in Laos was like a 'war lord', preventing theatre leverage to Special Operations and that the headquarters in the Pentagon (called SACSA – the Special Assistant for Counterinsurgency and Special Activities), was just there to appease the President with statistics, but no meaningful outcome.

The reasoned deduction about the failure of strategic bombing and associated psychological operations in North Vietnam, in the face of the overwhelming desire by the north to unify Vietnam, is salutory. The explanation about the relative success of cross-border ground reconnaissance by brave men, but hampered by a predictable mission profile which was well understood by the enemy, is revealing. The failure to follow-up intelligence with substantial ground force interdiction is damning to the point that the inability to cripple the Ho Chi Minh trail, really a huge logistics channel, is described as the greatest achievement in military engineering in the 20th century; and by an enemy.

It would appear that operational security was compromised from the outset, with the possibility that the long term agent program in North Vietnam was being run by a spy or at least subject to review by a North Vietnamese agent in the office of the President of South Vietnam. MACVSOG relied on its Vietnamese counterparts not only to recruit but also to translate agent reports. Possession of inherent language skills is essential for unconventional war fighting. Without this capability, you are doomed. The singular training base, 35 miles northeast of Saigon, further contributed to inadequate operational security from the lack of cross-mission isolation. Interestingly, the Son Tay raid was run by SACSA without MACVSOG involvement over operational security concerns. The overall failure of recovery missions for US versus Vietnamese prisoners-of-war is explained, but it begs more.

My criticisms are few although the book is full of code words for mission profiles, which are necessary for the ease of description of an incredibly detailed history, but still hard to take in, even for an informed Special Operations reader like myself, who is used to such vernacular. I would have liked more information on the value of covertly gained intelligence but this gap may have to wait the release of Vietnamese files in the years to come. This information, if indeed we ever get it, will determine if internal spies or operational ineptitude was the reason for the lack of operational success inside North Vietnam. The book begs more analysis and we must find it, if we are to win in the future.

Lost at Sea: found at Fukushima

Andy Millar
Big Sky Publishing: Newport NSW, 2012-06-08
ISBN: 978-1-9219-4152-8

Reviewed by Captain Gordon A. Andrew, RAN

In passing *Lost at Sea: found at Fukushima* to me for review, the Editor *ADF Journal* commented, 'I just had a quick read of this book. The first half is not a bad story, the second half is incredibly sad'. In 25 words or less, there probably isn't a better summary that could be written.

Lost at Sea is centred on the story of merchant seaman David Millar, who was Second Mate of the SS *Willesden. Willesden* was torpedoed and sunk in the South Atlantic Ocean by the German raider, *Thor*, in April 1942, and Millar, along with 42 other survivors, was imprisoned by the Germans. During *Thor's* voyage, she went on to capture or sink nine other vessels and the prisoners were transferred to *Thor*'s supply vessel, the KMS *Regensburg*. As *Regensburg* filled up with prisoners, the women, children and the injured, including Millar, were further transferred to another vessel, the KMS *Dresden*, and transported to Japan, where they were interned in a former convent at Fukushima, roughly 150 miles north of Tokyo.

The second half of *Lost at Sea* covers life at Fukushima until liberation and repatriation at war's end. It is a story of the harsh conditions and brutality that were endured by a group of women, children and non-combatant males, many of whom had been seriously injured. There is nothing in this part of the story that will surprise any reader, but it is a sobering reminder of what cruelty humanity is capable of, and also of how strong the human spirit can be in the face of adversity.

David Millar's story leading up to his arrival in Japan gives a good insight into the wartime experiences of the merchant navy, and the menace of the German campaign of commerce raiding. *Thor*'s successful history as a raider is well researched and the accounts of its actions against *Willesden* and other merchant vessels are recounted with energy and realism. There is no melodrama or embellishment, which gives the reader a strong sense of sharing the lives of ordinary people living through extraordinary events.

The narrative is well structured into short sections and the various strands of individual's early stories are deftly brought together to a single thread once they are all interned at Fukushima. The portraits of the main players are sympathetic, compassionate and balanced; even the Japanese guards and camp workers are portrayed with fairness, despite many of them being undeserving of such treatment. Photographs throughout the text are well placed and add to our understanding of the story and our empathy with the survivors.

Adding to the strength of the story is that it is written by David Millar's son, Andy. The subtext of a son trying to understand a distant and private father, who never spoke of the war except in 'hints, comments and asides', pervades this book and gives it a strong emotional

logic. It is also this sub-text that gives the book its most important theme: the cost of war not just to soldiers and sailors, but also to the innocents who unavoidably get caught up in its horrors. This cost can endure for lifetimes and can profoundly affect families and communities who consider themselves quite distant from the cause. It is a theme that we should always remember, and books such as *Lost at Sea* are important, if only so we never forget.

Clausewitz, the State and War

Andreas Herberg-Rothe, Jan Willem Honig and Daniel Moran (eds.)
Franz Steiner Verlag: Stuttgart, 2011
ISBN: 978-3-5150-9912-7

Reviewed by John Donovan

This collection of essays is part of a series intended to 'foster an integrative and inter-disciplinary study of the state'. It is not easy to read, particularly for those not familiar with the German language (the book retains some German words, presumably because their concept is not readily translated into English) but the effort is repaid.

Clausewitz seemed to be fascinated by the Trinitarian concept, applying it to his 'Wondrous Trinity' of the state, people and military, and also to management of troop strength, space and time, as noted by Jan Willem Honig. His essay highlights how Clausewitz argued that fighting is central to war, because destroying the enemy's means of resistance is the best way to impose a state's will on them. However, while using the maximum force can ensure that this result is achieved promptly, fighting was not an end of itself to Clausewitz.

Anders Palmgren highlights Clausewitz's emphasis on leaders acting in the interests of the state, not as they might wish to act as private citizens. This concept, separating an individual leader's personal philosophy from government actions, seems less easy to accept in modern times. Palmgren also notes Clausewitz's wish to interweave society and army, to make best use of the power and commitment of individuals.

Andreas Herberg-Rothe writes that Clausewitz accepted that states have to change to survive. His belief in equality before the law, an independent judiciary and ministerial responsibility is now widely accepted in democratic states. However, Clausewitz also recognised that mutual recognition of an opponent's right to exist is an essential pre-condition for restraining war's tendency toward absolute violence. Incompatible ideological or social differences can lead to everlasting war, or the extermination of one side (perhaps both had the Cold War become hot).

Daniel Moran's essay notes that it is difficult to judge how much Clausewitz intended to revise *On War*. However, he apparently intended to maintain the concept of two kinds of war, either to overthrow the enemy completely or limited war. Clausewitz also would have retained the concept of war as the continuation of policy using other means. This concept, and that of complete overthrow of the enemy, are perhaps the most commonly recognised aspects of Clausewitz's thought, and fit with Clausewitz's belief that war's character would vary with its political purpose.

Murielle Cozette's essay on the consideration of Clausewitz by the French philosopher Raymond Aron is particularly interesting. Aron studied Clausewitz in the context of the World Wars and the Cold War. One key concept, derived from Clausewitz's 'Wondrous Trinity', is the concept of the state as the personalised trustee of the interests of the whole community, this trusteeship serving as a restraint to prevent escalation to extremes. This concept is important, because it emphasises the importance of the government representing the interests of all citizens, not just those who share its ideological predilections. To Aron, the concept that *L'état, c'est moi* (or my party) excludes moderation.

Antulio Echevarria's essay on Clausewitz and the Cold War is of most interest in demonstrating the intellectual gymnastics in which many Cold War philosophers engaged. Herberg-Rothe's concluding essay on Clausewitz and the democratic warrior studies the recent rise of the professional fighter, and the corresponding decline of the army of citizens in uniform. He sees this as enabling a strategy of curbing violence to allow the 'organic development of democratic self-determination', not imposing democracy by force. At best, the jury seems still out on the success of this strategy. Worth reading, despite the difficult style.

Jihadi Terrorism and the Radicalisation Challenge – European and American experiences

Rik Coolsaet (ed.)
Ashgate: Farnham UK, 2011
ISBN: 978-1-4094-2569-4

Reviewed by Dr Nyagudi Musandu, Kenya
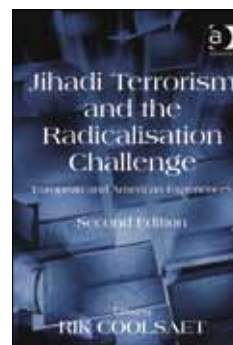
This book is essential for officials involved in identifying and profiling the scope and nature of any jihadi terror threat. It is a compendium of academic research and the experience of hands-on counter-terrorism experts, such as Robert Lambert of the UK, with his innovative ideas such as the establishment of Muslim contact units in London—a critical tool for de-radicalisation and deconstruction of jihadi propaganda.

Given that the text was edited and compiled in the light of the 'Arab spring', it has the tested and proven insight that Muslims can affect their political desires in their home countries without resorting to terrorism. A major lesson is that there are key persons whose interdiction renders a terrorist organisation deprived of its knowledge base and active central coordination.

The book also introduces new concepts, such as discussed in 'The Life Cycle of Cell-based Jihadi Terrorism' by Paul Pillar. Another is the likelihood or obligations that may cause national leaders to support jihad, which is explored in Chapter 3, a study relevant to those dealing with the conflict in Afghanistan and its roots in Pakistan. Hugh Roberts also explores this concept, however, his paper fails to properly assess the intent and capabilities of AQIM (Al Qaeda in the Islamic Maghreb), evidenced in its recent take-over of Northern Mali, after a short-lived successful Tuareg uprising against the Government of Mali.

In another paper, Martha Crenshaw discusses the interesting perspective of terrorism being used to propagate the ideals of loyalty to a diety, without empathy for those with opposing views. But the paper may not be right on the overthrow of Saddam Hussein's regime in Iraq, as arguably it was his desire and propensity to confront the US, which was almost certainly likely to manifest itself in the form of 'new' terrorism sponsorship and facilitation, if he was left in power. Although the war in Iraq may have inspired many 'new' terrorists, its prosecution—resulting in the demise of the Saddam regime—denied them a ready and willing sponsor. Indeed, the random and 'microscopic' nature of many of the 'new' terrorist groups generated by the war in Iraq makes them a more varied—but substantially less serious—threat to the US and its allies than the continuance of the Saddam regime.

Lenna Malki's paper that is Chapter 6 offers some insights of the group dynamics that were inherent in the far-left terror organisations operating in Europe in the 1960s, 70s and 80s, which are still applicable when analysing the functions and operations of present-day jihadi groups.

The paper on 'Terrorism Studies', by Teun Van de Voorde, elaborates on the uncertain efforts of academics in developing a unified/grand theory of terrorism. It also explains the pros and cons of qualitative and quantitative analysis as applicable to the study of terrorism. On the qualitative side of this spectrum, he argues that a cause of terrorism is assumed to be either positive or negative in terms of the education of individuals to the extent they cannot accept the negation of their social, political and economic norms by a more dominant government system. This compels such individuals to register their opposition to government by random acts of violence.

In Marc Sageman's paper, it is evident that his dialectics are heavily dependent on empirical evidence. Interestingly, from the reviewer's own analysis and past readings of radical groups in Kenya, Sageman's description of the formation of radical groups tallies with observations of the formation of many such groups in Kenya.

In another, Oliver Roy maps out the amorphous functions and network of international jihadi terrorism. He explains how global jihadi terrorists create and exploit local social networks via local mentors. He cites elements of local networking including marriage and crime, while international networking is facilitated by financial support arrangements, social relationships developed by travelling jihadi terrorists and the Internet.

Rik Coolsaet has several papers in this volume. The most interesting is his research on 'Revolutionary Terrorism', in which he puts forward the argument that today's problems of terrorism are nothing new, contending that 'Anarchism' in Europe, with its roots in the 19th century, is comparable to today's jihadi-type terrorism threat. His conclusion is that all governments must be prepared for the challenge of 'revolutionary' terrorism, given that most states create inefficiencies that result in the radicalisation of certain of its people.

In Jocelyne Cesari's contribution, there is the proposition that many jihadi terrorists today are persons who lack true cultural connection to their families, and that quite a number are new converts or those who have recently rediscovered their religion. In the opinion of the reviewer, this is an observation that can also apply in modern-day Kenya, where the police have recently arrested a number of such persons.

Many of the research papers in this book are empirical studies, backed by considerable research data. One of the key features is how to establish and run a de-radicalisation unit, which is a missing link in many counter-terrorism operations. More broadly, an enduring conclusion is that it is difficult to specify the terrorism threat. Terrorists are from diverse backgrounds, and terrorism comes from a multitude of threats, persons, groups and motives, which cannot easily be profiled.
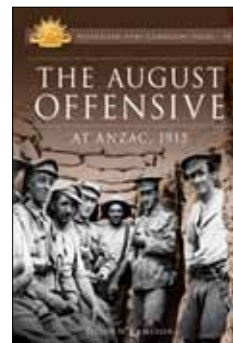
The August Offensive at Anzac, 1915

David W. Cameron
Big Sky Publishing: Newport NSW, 2011
ISBN: 978-0-9870-5747-1

Reviewed by John Donovan

The Australian Army's Campaign Series version of David Cameron's 2009 book on the August battles (published by University of NSW Press as *Sorry Lads, But The Order Is To Go: the August offensive, Gallipoli, 1915*) provides a readable, well-illustrated account of those dramatic events. While Cameron does not offer any startling new revelations, he does provide a very readable account.

After reading this book, one is left with a clear understanding that the battle was doomed to failure from its inception, whatever the heroic efforts of the combatants. As Cameron demonstrates, it was simply too much to ask tired men (many of whom had been almost constantly in the front lines for over three months) to march long distances—at night, across terrain of almost indescribable complexity, with no worthwhile maps—and then expel their enemies from dominating terrain.

The difficulties of coordinating the actions of widely-separated forces were insuperable in an era where a telephone was a sophisticated form of communication (if its wires had not been severed by gunfire or passing traffic), while runners had little chance of finding their way to their destination, and less of finding their way back to where they had started. Those difficulties ensured that any attempt to react to events on the battlefield would be delayed to the point of irrelevance. They were exacerbated by command failures.

Cameron is (rightly) critical of Godley's performance during these battles. Godley did not take control but allowed Johnston, commanding the New Zealand infantry brigade, to control some follow-up attacks involving more than his own brigade. However, Johnston seems, at best, to have been suffering from stress during the battle, refusing to move during darkness but ordering daylight attacks later. On one occasion, he rejected proposals for the provision of machine-gun support for an attack, virtually threatening his brigade machine-gun officer with disciplinary action for persisting with an offer to 'cover your advance and put troops up there without casualty'.

Cameron also comments adversely on Monash's failure to move forward to see events for himself. This criticism brings to mind C.E.W. Bean's description of Monash as a leader who 'would command a division better than a brigade and a corps better than a division' (*Official History of Australia in the War of 1914–1918*, Vol. 2, p. 588). Based on Cameron's account, Monash was not doing well as a brigade commander at this time.

All that said, Cameron's descriptions of the events of 6-10 August 1915 are admirably clear, and compelling to read. He follows each segment of the offensive to a logical break point, before moving to the next, and ties them all together well. Those who have seen the film *Gallipoli* might note that the comment about British troops at Suvla Bay not advancing while the light horsemen died at the Nek is irrelevant, as the attack at the Nek supported the New Zealand and Australian Division attack on Sari Bair Ridge, not the men at Suvla Bay.

Cameron's final judgment on the August offensive is that while flaws in the plan and the weakened condition of the men ensured that the attacks could not succeed, even success on the battlefield would not have altered the outcome of the campaign, a judgment that is difficult to refute.

The many maps provided are great aids to understanding the narrative, albeit some places mentioned in the text do not always appear on the relevant map. The selected photos and the sidebars on weapons and personalities add useful background to the text.

GUIDANCE FOR AUTHORS

The *Australian Defence Force Journal* seeks articles on a wide range of defence and security matters, such as strategic studies, security and international relations. Normally, articles will only be considered for publication if they are current and have not been published elsewhere. In addition, the *Journal* does not pay for articles but a $500 prize is awarded by the Board of Management for the article judged to be the best in each issue.

The Layout

Articles need to be submitted electronically and typed in MS Word format without the use of templates or paragraph numbers (essay style). Headings throughout are acceptable (and contributors should view previous issues for style). Length should ideally not exceed 4000 words, including endnotes. Please 'spell check' the document with Australian English before sending. Additional guidelines are available from the website.

Articles should contain endnotes, bibliography (preferably as 'additional reading', to supplement rather than replicate endnotes) and brief biographical details of the author.

Endnotes

- for articles are required in the style: Edward D. Mansfield, 'The concentration of capabilities and the onset of war', J*ournal of Conflict Resolution*, Vol. 36, No. 1, 1992, pp. 3–24.

- for monographs are required in the style: Edward D. Mansfield, *The Concentration of Capabilities*, Allen & Unwin: Sydney, 1998.

References or bibliography

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Tables, maps and photographs are acceptable but must be of high enough quality to reproduce in high resolution. Photographs must be at least 300 ppi in TIF format and obviously pertinent to the article.

The Review Process

Once an article is submitted, it is reviewed by an independent referee with some knowledge of the subject. Comments from the reviewer are passed via the Editor to the author. Once updated, the article is presented to the Australian Defence Force Journal Board of Management and, if accepted, will be published in the next *Journal*. Be advised, it may take quite a while from submission to print.

Authors with suitable articles are invited to contact the Editor via email at:
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Authors accept the Editor may make minor editorial adjustments without reference back to the author, however, the theme or intent of the article will not be changed.