



**Royal United Services  
Institute  
of  
South Australia Inc**

A Constituent Body of the  
Royal United Services Institute of Australia Inc

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RUSI-SA

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# NEWSLETTER

*Promoting National Security and Defence*

## RUSI-SA CYBERLINKS

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[rusi.sa@defence.gov.au](mailto:rusi.sa@defence.gov.au)

### RUSI OF AUSTRALIA WEBSITE

<http://www.defence.gov.au/rusi/>

### RUSI FOR DEFENCE STUDIES WHITEHALL WEBSITE

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### AUSTRALIAN STRATEGIC POLICY INSTITUTE

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## PRESIDENT'S MESSAGE

### PRESIDENT'S ANNUAL REPORT 2004-2005

#### The Year in Review

I am pleased to report to members on the general state of affairs of the Royal United Services

Institute of South Australia (RUSI of SA), and its progress during 2004-2005.

In terms of our object, 2004-2005 has been a moderately successful year, during which a full and varied program was again offered to members. However, the continued falling attendances now threaten the viability of some activities. The steady decline in membership experienced in the past three years continued during 2004-2005, reinforcing the need for Council to develop a strategy aimed at attempting to arrest such losses and to attract new membership.

Council's plan to introduce a new, "Second Program" of activities was implemented, and a very successful evening event was held in May 2005. This program aims to attract new members from government, industry, academic, business and service organisations in South Australia. The early evening program seems better suited to the people in this group. The new program may also attract members from the Defence community as well as facilitate attendance by existing members who are unable to attend the Luncheon Program because of work commitments.

#### The National Defence Debate

With members of the Australian Defence Force (ADF) continuing to be deployed on operations around the world, and terrorist attacks on the Australian Embassy in Jakarta and the London transport system, public interest in matters of national security and defence have remained high. Despite some difficulties with guest speaker availability, I believe the RUSI of SA has continued to contribute successfully to its aim of creating a

better understanding of matters of national security and defence.

### **Management of Activities**

Council proceedings continued to be conducted in accordance with the Constitution of the RUSI of SA, with the Council meeting on the third week of each month, except for March and June 2005. In an attempt to lighten the meeting workload of councillors, the various sub-committees only meet as required, with the majority of business being achieved during the increasingly frequent Council Meetings, or out of session if required.

Following last year's Annual General Meeting a casual vacancy existed on Council and, during the year, one Councillor resigned to take up the position of Secretary/Librarian; I am grateful to Mr Michael Gorroick and Captain Malcolm Orchard for agreeing to fill the casual vacancies and for nominating for election this year. During the year Captain Orchard has continued his much valued work as Honorary Editor and Assistant Librarian.

The Volunteer Support Group provided assistance throughout the year on a wide range of tasks, including, conversion of the Library to the BookMark electronic management system, reception and raffle arrangements at Monthly Luncheons and support for social functions. The need for volunteer support is fundamental to the continuing viability of the Institute and the many efforts of our present team are very much appreciated.

After 18 years of dedicated service to the RUSI of SA, our Secretary/Librarian, Mrs Pamela Jones, retired at the end of 2004. Council advertised for a suitable replacement and, after a number of candidates interviews, engaged LCDR David Stryker, RANR in January 2005.

### **Monthly Luncheons**

The Monthly Luncheon program continues to be the mainstay of our present activities. A quality program was provided during the year, and I wish to acknowledge the efforts of our Past President, Colonel Neville Bergin, in securing such eminent and relevant guest speakers in his role as Coordinator of the Guest Speaker Program.

### **The Library**

The Library Committee met as required during the year to discuss issues relating to the management of

this valuable asset and, within its budget allocation to select and approve the purchase of books, periodicals and magazines. The Library Committee purchased 44 books in 2004-2005, and members donated a further 12. The total number of Library loans in the year was 1,868

The cataloguing of books onto the BookMark electronic management system has been a major task. Following an approach to Employ SA, two willing workers were made available to undertake this task under the supervision of our Librarian. The complete collection has now been catalogued onto the new system.

### **Visits**

During the year, our Visits Coordinator, Mr Colin Brooks, arranged three very interesting visits to the Avalon Air Show, Tenix Defence and National Air Support. Unfortunately, attendance at all three was very poor and, besides causing some embarrassment to the Institute, would suggest that the visit program is not required by the majority of members. The program has therefore been put in abeyance for the foreseeable future.

### **Social Activities**

A social program was provided for members and guests in 2004-2005. Declining interest in many of the functions has led to their postponement or cancellation. In view of the effort expended on the planning, preparation and implementation of these activities, Council has determined that the present level of member support does not justify the retention of some events in the program.

### **Membership**

As at 30 June 2005, RUSI of SA membership was 523, this comprised 511 Ordinary Members and 12 Life or Honorary Members. This represents a nett loss of 31 members during the year, compared with a nett loss of 37 in 2003-2004 and 73 in 2002-2003.

### **Financial Position**

The financial position of the RUSI of SA continues to be satisfactory, and all of our activities are conducted on the basis of complete cost recovery. However, costs in all areas of operations continue to rise, and a decision to raise membership subscriptions by 10% was necessary to meet routine expenditure. RUSI of SA suffered a deficit this year, mainly caused by the requirement for termination payments for our retiring Secretary. The Honorary

Treasurer will speak to the RUSI of SA Income and Expenditure Statement and the Balance Sheet for 2004-2005 during the Annual General Meeting.

### **Closing Remarks**

It has been a privilege to serve as your President over the last year, and I thank all members for their support during this time. I also thank the Members of Council, our Secretary/Librarian and our generous volunteers who have provided their loyal and experienced support in conducting the affairs of our Institute.

The next year or two present some challenges for the RUSI of SA. The declining membership and falling attendance at functions and activities will inevitably reduce the financial base of the Institute and will necessitate a review of operations. Activities aimed at recruiting new members are, therefore, an important part of the strategic plan. As long as activities continue to be organised on a self-supporting basis, they should remain viable. However, unless membership levels are improved, consideration will need to be given to the reduction of some operations, or the restructuring of the RUSI of SA management organisation.

Original signed by  
Jeffrey McCulloch  
Air Commodore (Ret)  
President

*The following, having been nominated for membership, has been duly elected in accordance with the constitution:*

CMDR S Hyland, RAN(Ret) (LCDR D L Stryker)

## **MONTHLY LUNCHEONS**

### **Luncheon Speakers**

**Monday 10 October 2005**  
**Mr Geoff Roberts, General Manager,**  
**Surveillance Australia Pty Ltd**

**Topic: Coastwatch Surveillance**  
**Operations**

**Monday 7 November 2005**  
**MAJGEN A J Moylan, AO (TBC)**  
**Defence Materiel Organisation**

**Topic: (TBA)**

### ***CAR PARKING – MONTHLY LUNCHEON***

***Members are advised that the parking of cars is now NO longer permitted on the Parade Ground. Please use existing designated parking areas.***

All members are invited to attend our luncheons. Indeed you are encouraged to invite partners, friends and colleagues to join us and, if they like what they see, to nominate them for membership. Please book in advance. If you are unsure whether or not your name is on the booking list, please check!

***Cancellations must be into the RUSI Office by midday of the Friday before the lunch. Subsequent cancellations will attract a fee of \$18.00.***

The dress code for the luncheon is neat casual, taking into consideration weather conditions.

We assemble in Building 34A, Keswick Barracks, Keswick, at approximately 11.30am for drinks and good fellowship. Members are asked to be seated by 12 noon when our President welcomes members and guests, and lunch is served.

The cost of the buffet is \$18.00. We also conduct a raffle to help cover expenses. Our Caterer has agreed to provide vegetarian meals and sweets for diabetics, but these must be ordered before midday on the Thursday before the lunch.

For those who do not have time to enjoy lunch, but wish to hear the lecture, chairs are provided around the perimeter of the hall. Please be seated before 12.55pm, as the guest speaker will be introduced at 1.00pm. The address is of about 30 to 35 minutes duration with 15 minutes for questions, after which coffee or tea is available.

**We aim to complete the program by 2.00pm.**

### **MEDALS – MEMENTOS & MORE**

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**9 Norfolk St, Blackwood, SA 5051**  
**or at RUSI Office, Keswick Barracks.**

**Views expressed in this Newsletter are not necessarily those of the RUSI - SA inc**

**UNCHEON ADDRESS**

**Monday 6 June 2005**

**Dr Andrew O'Neil**

**School of Political and international Studies  
Flinders University**

***“Achieving Global Nuclear Stability in the Twenty-  
First Century:  
Towards a New Policy Agenda*”**

## **Introduction**

One of the least contested claims in the International Relations literature is that the contemporary nuclear non-proliferation regime based on the Non-Proliferation Treaty (NPT) concluded in 1970 is worth preserving.

Today, I want to take issue with this claim and argue that, as an instrument for ensuring nuclear stability in the years ahead, the current non-proliferation regime is woefully inadequate. However, what follows is not simply a critique of the NPT regime. I concur with the sentiments of NPT advocates that there is little point engaging in anti-NPT analysis unless one intends to present alternative options. In that spirit, I maintain that a fundamental shift in mindset among scholars and statespeople is needed if nuclear stability is to be achieved in the next one to two decades. Put baldly, we need to move beyond the outmoded view that nuclear proliferation is something that can be prevented in international relations to a mindset that recognizes it is an inevitable feature of the international system that needs to be managed.

## **A Death Not Greatly Exaggerated**

Ever since the detonation of the first atomic device in 1945, conventional wisdom has been that the spread of nuclear weapons represents a negative development in international relations. States themselves have held strongly to this position (except, of course, if they are the ones doing the proliferating) and the ‘proliferation pessimist’ orthodoxy has pervaded virtually every facet of academic discussion on nuclear weapons. With very few exceptions, international security analysts assume that any spread of nuclear weapons – irrespective of contextual or contingent factors – represents a blow to the stability of the international system. This mirrors a fundamental conviction that the greater the number of countries possessing

nuclear weapons, the greater the danger of nuclear weapons being used, either intentionally or by accident. A corollary of this view is that deterrence – defined as the ability to dissuade an adversary from using force through the credible threat of unacceptable punishment – will be problematic to achieve in an international environment populated by new nuclear powers. Given their strategic ‘immaturity’, new nuclear powers will struggle to formulate doctrines and develop failsafe technical systems that allow them to maintain crisis stability with other nuclear powers. Fearing a decapitating first strike, new nuclear states will confront a ‘use it or lose it’ dilemma and will thus be more inclined to employ nuclear force prematurely in a crisis situation.

An equally powerful assumption in much of the literature has been that the NPT and its associated safeguards system has made the world a safer place than it otherwise would have been by making it harder for states to attain the requisite means to acquire nuclear weapons. However, since the end of the Cold War, existing non-proliferation mechanisms have failed to stem the diffusion of nuclear capabilities in the international system. North Korea and Iran may be the two cases grabbing the current headlines, but other countries have either reached or crossed the threshold of nuclear possession covertly (Japan, Israel), or gone one step further and declared a nuclear weapons capability by testing (India, Pakistan). North Korea appears to have been able to accumulate the necessary expertise, fissile material, and design technology to manufacture a weapons capability while retaining its ‘non-nuclear’ status under the NPT. Iran now looks as if it is replicating the North Korean example. As if this were not sufficiently worrying from a non-proliferation perspective, suspicions persist about the nuclear capabilities and intentions of several other states, including Saudi Arabia, South Korea, and Taiwan. Furthermore, the nuclear export control groups set up during the Cold War period have failed to prevent the spread of nuclear weapons related technology and material, and have proven ill-equipped to deal with the increasingly complex transnational nature of illicit global nuclear commerce.

The point to stress is that the NPT, and the non-proliferation regime more generally, was never meant to provide a guarantee to the international community that member states would not acquire nuclear weapons. At best, it could only ever make the quest for nuclear weapons harder – and then only for those states who decided to adhere to the NPT. Needless to say, for those such as Israel, India, and Pakistan, who decided not to join the Treaty, it

provided no impediment whatsoever to the acquisition of nuclear weapons. Moreover, the idea of the NPT as a permanent obstacle to nuclear proliferation has never reflected the reality for most states, even following the Treaty's indefinite extension in 1995. Article X of the NPT allows countries to withdraw on a mere three months' notice in the event that 'extraordinary events[...] have jeopardized its supreme interests'. The permissive nature of this withdrawal clause was, of course, no accident. Very few countries, then or now, are willing to provide an iron-clad guarantee that they will not acquire nuclear weapons in perpetuity. Unless and until this happens – a development essentially inconceivable in an anarchic international system - achieving 'irreversible' nuclear non-proliferation will remain a chimera.

### **Ensuring Global Nuclear Stability: Is There a Way Forward?**

With the continued fraying and likely collapse of the NPT regime over the next decade, if global nuclear stability is to be maintained, more focused attention needs to shift towards *managing* nuclear proliferation rather than *preventing* it. This is no minor undertaking: it requires nothing less than a radical shift in mindset among policy makers, non-official security specialists, and general publics at-large. More specifically, it requires a frank admission that the global non-proliferation architecture that has been built up around the NPT over the last three and a half decades is simply not up to the task of ensuring international nuclear stability in the twenty-first century. It is perhaps revealing that, increasingly, the best defence champions of the NPT can muster is that the Treaty is worth hanging onto because there are no serious alternatives to stemming proliferation worldwide. However, as it has been recently observed, the NPT is a failing regime that is consuming diplomatic resources that could be more effectively used to build an alternative arms control regime. In order to reach the point where alternative arms control regimes can be seriously discussed, however, two steps must first be taken by those who have a stake in working towards a stable nuclear future: dispensing once and for all with the Utopian myth that nuclear disarmament is a viable policy option, and exploring the feasibility of a formal and robust system of deterrence between nuclear-armed countries in the international system.

#### ***Nuclear Disarmament: A Utopian Diversion***

There are two spectrums of opinion among those who advocate nuclear disarmament. The first, more radical, perspective is that the world's five

established nuclear powers should embark immediately on a significant drawdown of their respective nuclear arsenals with a view to complete elimination within a specified timeframe. Such action would, it is assumed, spur newer nuclear powers into emulating the lead of the big five by reassuring them that their own nuclear forces are effectively redundant as instruments of strategic military power. In this world, nuclear 'holdouts' would be subject to tremendous moral pressure to conform and would have little strategic, political, economic or diplomatic rationale for preserving their nuclear stockpiles. The second, less radical, spectrum of opinion among those who advocate nuclear disarmament is that it needs to be more incremental in scope to succeed. From this perspective, nuclear disarmament is a long term objective, but it is an objective that must remain subordinate to achieving non-proliferation and arms control objectives in the short to medium term. It is, in short, a process that will evolve over time as a corollary of further advances in arms control, not something that can be accelerated immediately as a matter of urgency.

Although differing in emphasis, both spectrums of opinion assume that nuclear disarmament constitutes a viable policy option for states. However, this is a serious misconception that is laden excessively with wishful thinking. There is little evidence that contemporary advocates of nuclear disarmament have given any serious thought to the obvious question of how any nuclear power could be compelled to disarm their nuclear forces. Even if we suspend disbelief and assume that there is an equal amount of good faith on all sides to disarm nuclear forces and neutralize latent 'breakout' capabilities (surely a sine qua non for sustainable disarmament), there remains the vexing issue of verification. Which body or bodies would 'police' global disarmament?

Treating nuclear disarmament as a viable policy aim implicitly dismisses the realities of international relations. What grounds are there for assuming that states will be flexible on the nuclear issue and agree to bargain away their most prized military assets for the good of humanity? It is important to recognize that continued calls for nuclear disarmament are not only excessively Utopian; they also divert attention unnecessarily from the imperative of developing new policy options for ensuring international nuclear stability in a world where the NPT regime is rapidly coming apart at the seams.

#### ***Nuclear Deterrence: The Least Imperfect Option?***

Winston Churchill's famous observation that democracy is the least imperfect system of governance is one that could well be applied to the

system of nuclear deterrence. As a range of analysts have conceded, nuclear deterrence during the Cold War was risky, dangerous, and fraught with complex ambiguities that occasionally made for hair raising encounters between the US and the Soviet Union. However, by and large, the logic of deterrence worked between 1945 and 1991 in persuading both superpowers that any nuclear conflict was something that must never be waged under any circumstances short of a nuclear strike from the other side. Policy makers in Washington and Moscow fumbled around periodically for alternative ways of managing the bilateral nuclear relationship, but essentially came up empty handed. Nuclear deterrence remained, for all its flaws, the indispensable template for managing the East-West strategic relationship after 1945. What is perhaps even more striking is that *all* nuclear powers in the international system have been deterred from using nuclear weapons for over half a century.

Ironically, despite its apparent success, in recent years deterrence has been dismissed in many quarters as redundant. The Bush administration has been especially dismissive of its role in a 'new post-9/11' international security environment and has characterized deterrence as an outmoded strategic concept that may have proved effective during the Cold War, but is entirely unsuited to the 'more complex and dangerous' challenges posed by rogue states brandishing nuclear weapons.

Yet for all the talk of deterrence being outmoded, in many ways it has never been more relevant to preventing nuclear conflict internationally. After some initial uncertainty, India and Pakistan now seem to have established a fairly stable strategic relationship that embraces a classical deterrence logic based on both sides retaining a secure second strike capability against the other. Israel's neighbours remain deterred from threatening the existence of the Jewish state (as they did in 1948, 1967, and 1973). In the US case, pre-emption has never really posed a serious challenge to deterrence as the core doctrine underlying American global strategy. Pre-emption, for all the hype, was used largely by the Bush administration as doctrinal window dressing to justify the impending invasion of Iraq to a sceptical general public in the second half of 2002 and early 2003. Washington evidently has no intention of following through on the logic of pre-emption and taking military action to neutralize North Korea's and Iran's emerging nuclear capability. In the case of North Korea, there are clear signs that the United States accepts (albeit grudgingly) that it has little choice but to work towards a deterrent-based strategic relationship with Pyongyang.

While nuclear deterrence during the Cold War was predicated largely on the bilateral relationship between the two superpowers, there is no reason why it could not operate at the multilateral level in the international system. Indeed, it could well be argued that multilateral deterrence has functioned internationally since the UK successfully tested its first atomic device in 1952. It is worth noting that many predicted with alarm that China, as an archetypal rogue state, would be 'undeterrable' following its inaugural nuclear test in 1964 and that, as a revolutionary world power, China would seek to leverage its nuclear weapons to underwrite an expansionary foreign policy in Asia. If anything, China's possession of nuclear weapons induced a greater sense of caution among national elites. Today, China (along with India) remains the only nuclear weapons state to retain a no-first use pledge.

Against this background, there are some positive indications that multilateral nuclear deterrence could work in contributing to global nuclear stability by fostering greater restraint and caution among those possessing nuclear weapons. States will be less inclined to engage in destabilizing actions or conventional conflict for fear of escalating to a level where nuclear use could become a reality. A system of multilateral deterrence would probably not just appear over time; it would need to be cultivated by the existing nuclear weapons states and would entail significant diplomatic activity in 'reaching out' to newly emerging nuclear powers such as Iran. Such activity would need to include discreetly offering new nuclear states assistance to minimize the risk of accidental nuclear launch due to immaturity in force structure and underdeveloped command and control systems.

A critical requirement for multilateral deterrence to work would be agreement among nuclear powers to control and manage the proliferation of certain types of nuclear weapons systems that, if left unregulated, could prove to be destabilizing to global security by lowering the threshold to nuclear use. Examples might include those forces that could be employed to achieve tactical advantage on the battlefield in the midst of a 'conventional' war. But most important of all, any successful multilateral deterrence system would require a bold cross-cultural endeavour to effectively 'socialize' national elites in all countries into accepting the logic and benefits of rational deterrence as a basis for nuclear strategy. Only by being made aware of the circumstances in which nuclear weapons might be used by other states can all states be attuned fully to the incredible costs of nuclear conflict and hence be deterred from

ever considering seriously initiating the use of nuclear weapons.

**LUNCHEON ADDRESS**

**Monday 5 September 2005**

**Professor Richard Blandy**

**Adjunct Professor of Economics, School of  
international Business, Division of Business and  
Enterprise, UNISA**

***“The Defence Sector In South Australia”***

Professor Blandy opened his address by pointing out that, in South Australia, Defence is about one third the size of Agriculture, Forestry and Fishing. Even so, in 2002 /2003, Defence contributed about \$1 billion (2%) to SA’s Gross State Product; and employed about 17,000 people (3.3% of SA’s total employment) - by comparison, agriculture, forestry and fishing contributed about 2.5 billion to SA’s Gross State Product and employed about 44,000 people.

**Market Opportunities for the Defence Industry**

The market opportunities and goals for the Defence Industry in South Australia are:

- a. The international defence market is estimated to be worth more than US \$1 trillion annually with the East Asian market valued at \$US 131 billion.
- b. The Australian market is estimated to be worth more than \$A 15 billion
- c. The Government’s goal over the next decade is to double the defence industry’s contribution to GSP and to grow employment levels to 28,000

**The Defence Unit**

To support its Defence Industry Advisory Board (DIAB) in achieving its objectives and to stimulate the further development of the defence industry in South Australia, the State Government has formed the Defence Unit.

This Unit co-ordinates government initiatives and works in partnership with industry to strengthen the State’s position as the centre of Australia’s defence industry. Retired Rear Admiral Kevin Scarce is its Chief Executive Officer (CEO).

**The Defence Teaming Centre**

South Australia’s Defence Teaming Centre (DTC) was established in 1996 as a joint initiative between State Government and industry. Its primary role is to assist members identify, and qualify for, opportunities for Defence work, and to facilitate the

development of teams to bid for Defence projects. DTC also carries out the function of the South Australian arm of the Australian Industry and Defence network. Graham Sutton is its Chief Executive Officer.

**The Defence Skills Institute**

The Defence Skills (DSI) is a joint initiative of the South Australian Government and the defence industry. Its aim is to establish the State as the nation’s leader in skill and capability solutions for Defence. DSI is run by the Defence Teaming Centre and will link the defence industry to quality education and training tailored to meet its needs and the needs of individual South Australians.

**Australia’s High Tech Defence Hub**

South Australia is the centre of Australia’s high tech defence industry effort. It has:

- a. The Defence Science & Technology Organisation (DSTO) at Edinburgh.
- b. The Australian Submarine Corporation (ASC) at Osborne.
- c. The defence Technology Precinct at Edinburgh Parks adjacent to the DSTO.
- d. The RAAF Base Edinburgh, and,
- e. The 127,000 square kilometre test and evaluation range at Woomera in the State’s mid North.

Thus, it will be seen that high technology defence electronics encompassing, command, control, communications, computing, intelligence, and surveillance and reconnaissance represent the core of the State’s defence industry sector capabilities and expertise. It must also be noted that the Defence Science and Technology Organisation (DSTO) at Edinburgh is the largest defence research facility in Australia. It is home to DSTO’s Systems Sciences and Information Sciences and Information Sciences laboratories and includes elements of DSTO’s Melbourne based Platforms Sciences laboratory. (Approximately 1,200 people are employed at DSTO Edinburgh.)

**DSTO System Sciences Laboratory**

This laboratory consists of Air Operations Division, Maritime Operations Division, Land Operations Division, Electronic Warfare and Radar Division and Weapons Systems Division. It conducts research into combat information management systems, weapons systems, sensor systems and associated technologies, including radar, sonar, electric-optic, radio frequency and avionics.

## **DSTO Information Science Laboratory**

This laboratory consists of Command and Control Division, Defence Systems, Analysis Division, Intelligence, Surveillance and Reconnaissance Division and the Information Network Division. It considers protection of Australia's critical infrastructure, and the development of surveillance intelligence and other defence capabilities; and also contributes to the ADF's campaign planning and execution through research into situation awareness, command and control, and information operations.

## **RAAF Base EDINBURGH.**

RAAF Base Edinburgh is located adjacent to the DSTO. It consists of units associated with the AP-3C Orion long-range maritime patrol aircraft and is home to the Aerospace Support Group, which is Australia's principal centre for aerospace activities. (These include flight test, early warning, systems engineering and development, and aircraft/stores compatibility engineering.)

## **Australian Submarine Corporation**

Wholly Australian government owned, the ASC presently employs more than 1,000 persons in Adelaide and Perth. ASC built and maintains the six Collins Class submarines for the RAN, and has been selected to build three new air warfare destroyers. This will require a major investment in facilities and will double employment at Outer Harbour.

## **SAAB Systems, TENIX, BAE Systems, RAYTHEON**

Based in Adelaide, Saab Systems Pty Ltd is an Australian top ten defence systems firm, employing over 200 people. It is part of the global Saab Corporation that employs some 14,000 people, and is one of the world's leading high technology companies focussing on defence, aviation and space.

TENIX is a very significant Australian player in the national defence industry. Its operations in SA include electronic systems and military vehicles. Tenix successfully developed the laser airborne depth sounder at its Adelaide operations and has contracts for a number of army surveillance programs.

BAE Systems employs 2,500 people at 50 different locations in Australia. Its centre of operations is at Mawson Lakes. It has major operations across 5 continents and 130 countries and employ more than 90,000 people and generates annual sales of approximately \$30 billion.

RAYTHEON Australia employs more than 1,000 people across Australia and has a presence at Mawson Lakes, Edinburgh and Outer Harbour. It is the preferred bidder for the combat system for the Australian Air Warfare Destroyer. Raytheon Australia is a subsidiary of the Raytheon Company, a US industry leader in defence electronics, space, and special mission aircraft - a company with a worldwide turnover of \$US 20 billion and the employer of some 80,000 people world wide.

## **Defence - Related University - Based Research Centres**

In addition to the above companies, there are also significant defence related university based research centres here in Adelaide. They are:

- a. Cooperative Research Centre for Sensor Signal and Information Processing (Mawson Lakes)
- b. Systems Engineering and Evaluation Centre (Mawson Lakes).
- c. Institute for Telecommunications Information Networking (Adelaide).
- d. Cooperative Research Centre for Satellite Systems (Mawson Lakes)
- e. The Distributed and High-Performance Computing Group Adelaide.
- f. Advanced Computer Research Centre (Mawson Lakes)

## **The Maritime Defence Future**

The Australian Submarine Corporation is Australia's newest, best-equipped yard, with considerable room for expansion. It houses Australia's strongest concentration of naval design, engineering, construction and logistics expertise which has been built up to support the most complex platforms within the RAN: the Collins Class submarine and the Air Warfare destroyer. As a result ASC is the logical choice as the centre for naval shipbuilding in Australia.

## **Defence AEROSPACE in the Future**

Major future developments in defence aerospace will be driven by:

Project Air 7000 – including acquisition of the manned aircraft component of the maritime patrol capability that will replace the Orions, and, The development, acquisition and basing of unmanned aerial vehicles, e.g., Global Hawk and Tactical Unmanned Aerial Vehicles.

## Electronic Systems in the Future

South Australia is the centre for defence surveillance, electronic warfare and command and control capabilities. These capabilities will form the foundation of Australia's military operations over the coming decades, allowing Australian forces to detect unfriendly forces earlier, and from a greater distance, and making communication during combat between different capabilities, such as air and sea, faster and more secure.

The defence sector in SA is now a significant industry in its own right. The Air Warfare Destroyer contract consolidates its future, and makes additional defence activity more likely in the future.

### LIBRARY NON FICTION

#### SEXING IT UP: IRAQ, INTELLIGENCE AND AUSTRALIA

By Geoffrey Barker

Geoffrey Barker is a senior foreign affairs and defence policy columnist, and a research associate with the Institute for Social Research, Swinburne University of Technology. This is his reminder that "the long-run global consequences of the Iraq war, are, ofcourse, unpredictable".

#### FUTURE ARMIES, FUTURE CHALLENGES

Edited by Michael Evans, Russell Parkin and Alan Ryan

Here the impact of the information age on future land warfare is analysed, with issues such as urban warfare, coalition operations, the revolution in military affairs, asymmetric warfare, close combat, peacekeeping, military training and recruiting and the challenges posed by terrorism being carefully examined. And, as the Chief of Army notes, here is a collection of essays that is a reaffirmation of Liddell Hart's famous advice: "if you wish for peace, understand war...."

#### RULES OF ENGAGEMENT: A LIFE IN CONFLICT

By Tim Collins

This is the history of the First Battalion of Royal Irish Regiment from when Tim Collins became its Commanding Officer (after its devastating experience during the hostage crisis in Sierra Leone in 2000) until its recent service in Iraq. He retired from the army earlier this year.

## THE BRIDGE AT PARIT SULONG

By Lynette Ramsay Silver

In January 1942, as the Japanese pushed the main Allied army down the Malay Peninsula, two understrength Australian Infantry Battalions, a handful of Gunners and a depleted Indian Contingent held back a vastly superior enemy force. The battle was one of the most desperate fighting retreats of the Second World War for which the Australian Commander, LTCOL Charles Anderson, was awarded the Victoria Cross. Here, for the first time, is the full story of this epic battle and its appalling aftermath.....

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By Gary McKay & Graeme Nicholas

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## THE AMAZING SAS

By Ian McPhedran

Journalist Ian McPhedran was granted unprecedented access to the men and methods of SAS during the writing of this book, a book that provides insights into the way Australia's SAS soldiers are selected and trained and their recent deployments in East Timor, Afghanistan and Iraq.

## WINNING MODERN WARS

By General Wesley K Clark

General Wesley K Clark, USA (Ret) was Supreme Allied Commander, Europe, from 1997 to 2000 and a military analyst from 2001 to 2003 for CNN; this is his critique of American geo-strategy.

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By Harvey Broadbent

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## ON SHAGGY RIDGE

By Phillip Bradley

"On Shaggy Ridge" details the dramatic but little known story of the 1943-1944 Ramu Valley

campaign in New Guinea - Phillip Bradley follows the Australian 7<sup>th</sup> Division from the pivotal battle at Kaiapit through to the final assault on Shaggy Ridge. Recollections, previously unpublished, from both Australian and Japanese veterans, who were there, enhance a well written, well illustrated history.

**AN UNFINISHED LIFE: JOHN F KENNEDY**  
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By Robert Dallek.

In the writing of this biography of John F Kennedy, Robert Dallek has drawn on newly unearthed documents and archives, and thus, while not shying away from Kennedy's weaknesses, he also closely examines his many strengths. The result is thus a full, authoritative portrait.

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By Kevin Barnes.

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**NETWORK CENTRIC WARFARE AND THE FUTURE OF AIR POWER**

Edited by Keith Brent

The proceedings of the 2004 RAAF Air Power Conference are a contribution to the ongoing study and debate of air power issues, and thus a basis for future discussion.

**THE NAVY CONTRIBUTION TO AUSTRALIAN MARITIME OPERATIONS.**

RAN Doctrine 2 - 2005

This is an accessible reference on how the RAN organises, prepares for, and approaches operations in accordance with its philosophical doctrine. Its key objective is to demystify maritime operations.

**A WAR IN WORDS**

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