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Front Cover

Submarine Exercise *Lungfish* in the Indian Ocean
Photograph by POPH Scott Connolly, RAN

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Mandatory Age Retirement

Dear Editor

I write in response to the article by Lieutenant Chapman "Mandatory Retirement and Age Discrimination in The Australian Defence Force", published in the *ADFJ* No. 138.

As an "older" airman I can relate to the content of the article, however, when considering the age-related ability of Service personnel in relation to mandatory retirement determinations, one should not assess the physiological and cognitive performance abilities of an identified group, or individual, in isolation of other factors.

Certainly, speaking from experience, as one ages there is a noticeable decline in one's performance abilities. Older Service personnel have to work much harder to achieve the same, or near same, performance level as that of younger personnel and do tend to rely on experience in many instances, to overcome the hurdle of aging.

Some value should be placed on the psychological differences between younger and older Service personnel. The difference can have an impact on how each group reacts to performance requirements. For example, I was 34 years old when I attended RAAF recruiting as were two of my fellow recruits, the remaining 17 course members had an average age of 23, a ten-year age gap. During the individual 2.4 and 5km run PT sessions, we discovered that the recruits who complained and struggled the most were between 18 and 20 years old. This group without doubt were physically superior than the three "older" drinking, smoking, work hard – play hard strugglers who managed to get through the runs without heart failure. In discussing this, we (oldies) discovered that our success was based more on the psychological aspect than the physical. What did we do that was different? We teamed up, paced each other, set goals, blocked out the soreness in our legs, chatted and generally gave mutual support as we gasped, all happy to finish in time and together. Why did we do this? Experience, maturity, wisdom.

At the very onset of one's military career, formal training is provided and followed up with post graduate and on job training, what is not formally addressed is learning by experience. Most of us who learn by experience do so under what could be referred to as learning by risk. We research the task as best we can, but at the end of the day a successful outcome is not necessarily guaranteed. We make mistakes, we learn and we move on. In the Services we tend to cover this under the umbrella of risk management.

It is the learning and risk taking components of military life where the older Service personnel fill the gap. They have made the mistakes, learned the lesson and moved on. No amount of training can make up for the abundance of life experience, maturity and wisdom found in our older Service personnel – is this not a valuable resource which should be tapped for all that its worth?

In concluding, I suggest that everyone should think back on the number of times they have sought the assistance of older persons, discovered an easier, safer way of completing a task successfully and walked away wiser for having done so. Life experience, maturity and wisdom are factors that must be considered when looking at the value of older serving members and what they can and do contribute to the Australian Defence Force.

Sergeant Peter C. Johnson
RAAF

English Expression

Dear Editor

Mr Hugh Wellesley's letter (*ADFJ*, Sep-Oct 99) exemplifies the range of opinion on what constitutes effective English expression. Service writing has always required crisp, concise expression free of jargon and ambiguity. This is because poorly expressed military orders can, literally kill people and generally ours at that. Good Service writing should therefore be high-standard English expression.

Mr Wellesley's opinion of military writing reminds me of a previous one in 1992. I was then a Directing Staff at Command and Staff College (C&SC) and was

the sponsor of the integrated studies undertaken with Deakin University.

One university academic and would-be television "personality" complained about the expression of the C&SC students undertaking studies at Deakin. His particular lament was that they did not write in a suitable "academic style".

I solved this problem by advising the students to write their next essay in exactly the same manner but with three minor format changes: no paragraph numbering (most didn't anyway), no headings and every second or third paragraph combined with the preceding one to produce longer "academic" paragraphs.

The university academic concerned was thrilled with the result and astounded at how their English expression had "improved" so quickly. In the interests of inter-institutional harmony we never told him how it was done.

Critics like Mr Wellesley need to be reminded that the Army and RAAF staff colleges are about the last tertiary institutions in the land that emphasise the importance of good English expression and also attempt to teach it. I hope he is at least equally critical of the vast majority of our schools and universities that do not.

The standard of English expression in the ADF is, however, declining for a variety of reasons but three stand out. First, the poor example often set by senior officers in both their writing and enforcement of standards. Second, the functional and cultural integration of ADHQ has led to ever-increasing civilian "bureaucratise", jargon and rigidity of expression at the top echelons of the ADF. Finally, there are numerous deficiencies in the new ADFP101, Defence Writing Standards. Instead of being integrated into ADF operational planning processes the new ADFP has been reduced in vision and scope to a departmental style guide, unduly influenced by civilian professional editors, rather than set the Service and operational writing standards required for professionalism in military planning and operations.

Finally, few ADF officers write in Sandhurst or Cambridge language as believed by Mr Wellesley. Those two institutions, in fact, have considerably different approaches to English expression.

*Lieutenant Colonel Neil James
Director, Land Warfare Studies Centre*



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An Examination of the Relationship Between Information and Technical Advances, and the Revolution in Military Affairs

By Lieutenant Colonel D.A. Harris, Retired

The Revolution in Military Affairs (RMA) seeks to exploit recent and future technological advances in information gathering, storage, collation, processing, transmission and presentation to allow new or revolutionary responses to a target or situation. This, it is believed, will occur faster and more decisively than has been possible in the past.

It stands to reason that a force that is structured to maximise the benefits of technological advances in the information and communications arena, and uses decisive command and control structures within a streamlined national defence machinery, is structuring for success. To better understand the strengths and weaknesses offered by the proliferation of information-related technological advances, there is a need to examine whether information is a target and/or a weapon, and if so, how it will be employed in this fast evolving era that some call the RMA.

When examining the RMA and the potential future benefits, many commentators have noted the potential offensive and defensive applications of information and concluded that in future warfare, information will be both a weapon and a target. This article contends that information, in a colloquially defined sense, is not a weapon per se. By itself, information, or the lack of it, cannot hurt, harm or inconvenience anyone. However, when it is presented or used in a way that generates a directed, predicted and desirable response or effect, it can be considered an instrument for use in attack or in defence. It is agreed, however, that information can be effectively targeted in order to skew cognitive processes, which in turn will allow one to leverage a situation to one's benefit. Information can, therefore, rightly be considered a target and should be protected from distortion, corruption, destruction and other direct and indirect influences.

Information – Is it a Weapon?

Technically, information could be considered a weapon because – “it can be used as an instrument in an attack or in defence”.¹ This definition may be too broad for the purposes of this article however, as it could be argued on similar lines, that the combat boot is a weapon because it is an instrument that can be used in close combat in either attack or defence.

Just as the combat boot is not generally considered a weapon because its primary employment is as protective clothing, information is not a weapon because its primary function is to stimulate and provide input into cognitive processes. Selected information, directed specifically at a target audience or receptor, can be used offensively and/or defensively to achieve a specific effect. However, unlike a weapon such as a rifle, when information is used to generate a desired effect, it is used as part of an intricate system.

When soldiers undergo recruit training they are issued a rifle. They are taught that their rifle is a weapon. It is a weapon because its primary reason for being is to create specific target effects. What is not explained is that the individuals themselves are integral

to the weapon system. It's the individual that enables the weapon to achieve its potential. The human aspect of the weapon system that allows the rifle to realise its maker's potential is the soldier's ability to:

- maintain it and to load it correctly with ammunition compatible to its innate characteristics;
- sight the rifle and the associated cognitive processes that allows them to select and differentiate between targets and non targets; and importantly; and
- apply training and experience to employ the destructive characteristics of the weapon.

A bullet that lands with destructive force delivers the target effect. The target effect is the culmination of a simple engagement process that usually has only one person in the “weapon system”. Selected information can deliver a desired target effect, but the primary role of information is to feed and stimulate cognitive processes. To turn information into an information bullet is often a complex process and as such involves a complex weapon system to employ it.

When information is analysed at an HQ and a scheme of manoeuvre is devised which includes a plan

to deceive, intercept, disrupt, destroy or corrupt an adversary's information or information processes, there is potential for information and the associated "human" machinery to employ an "information bullet" to achieve a desired effect. Unlike the rifle metaphor above, the cognitive aspects of delivering the information bullet are not as simple as aiming and firing to achieve the desired effect. The selection of the best "information ammunition" is a complex process; delivery means and timing must be decided upon, and assessments of possible collateral effects need to be weighed.

The collateral effects of the rifle engagement tend to be restricted to the physical realm with engagement-specific collateral effect.² However, an information-related operation delivers a specific target effect and the collateral effects can be felt in the physical and psychological realm. The impact may not be time-limited and it may be possible for the effects to escalate in magnitude rather than dissipate, as is the case of the bullet. This is because the target realm is often the perceptions and cognitive processes of the adversary or the target audience. It should also be noted that, in some cases, untargeted audiences may be recipients of messages or information that were not envisaged, but were bought into the equation by the ubiquitous nature of modern communications.³

In order to maximise the target effect of an information bullet, planning will often require detailed coordination of execution timings or related events. Time-sensitive coordination requires an organisation that is structured to make decisions quickly to exploit fleeting and expected opportunities. It also requires a culture within the organisation that demands decisiveness and initiative without stifling action through inappropriate or inefficient bureaucratic processes and risk-aversion strategies. Headquarters will need structures that are functionally aligned to the processes while being capable of analysing and distributing information quickly to those who need to know. Flatter structures with decentralised work-flows would appear to be a positive step to increasing situational awareness and therefore decision making. They will, however, bring with them the potential systemic weaknesses of greater operational security risks and limited in-built redundancy.

When devising strategies to use information as part of a weapon system, it is the human cognitive processes that choreographs the synthesis of information, and draws on individual, collective and corporate experience

to identify and prevent discord and conflict between associated delivery means.⁴ It is the human cognitive process that assesses associated issues and decides on suitable delivery means to achieve the required effect, at the critical point, at the critical time. In an environment where information can be passed and processed with increasing speed and technical accuracy, organisational structures and culturally based⁵ processes must be able to work within and exploit the Information Revolution.⁶ Therefore, human related organisational structures, process and the glue that binds them together, knowledge and morale, become important factors in determining how effective the weaponeering of information can be.

How Will Information be Employed in an Offensive Mode?

Information has been created when data (collected from varied sources) is arranged, categorised and stored for easy retrieval for the purpose of informing situational awareness and decision-making. Selected information can be relayed, offered or denied to an adversary with the intent of damaging their systems and processes, or altering their perceptions of reality to secure a relative advantage in decision-making and manoeuvre through influencing physical, intellectual and psychological (moral) domains. Delivery means will vary and will only be bounded by imagination and ethics. Actions can be direct or indirect, attributable or non-attributable, lethal or non-lethal. The challenges to offensive operations that seek to secure an advantage using information as a bullet are:

- making sure any collateral damage is envisaged before the mission is agreed and steps are taken to minimise conflicting effects and possible conflicting delivery characteristics;
- coordinating the desired effects from a variety of asymmetric approaches to achieve the desired outcome in the most efficient manner possible; and
- being able to quickly assess target effect in order to accurately inform the overarching process.

Planners in the future will have to envisage the information-related operation within its overarching national strategic context, because many such actions will have wide-ranging visibility and impact. Decision-making to authorise information-related operations will have to be founded upon an understanding of the target, the desired effect, the potential for both physical and psychological collateral damage, and the need to trust subordinate commanders with limited windows of

opportunity, to focus effort to achieve the overarching aim. In short, cultural changes will need to embrace more effective decision-making processes that encourage initiative and actually empower commanders to act in support of a stated focus of effort.

Information – Is it a Target?

Information is a key basis upon which decisions are made. While each individual will perceive information in accordance with their own biases, in the context of their experience and knowledge, selected or specific information can influence perceptions, and therefore, the quality of decisions one may make. It is logical then that specifically selected information is liable to be targeted as a means of trying to secure or create an advantage for future exploitation. Similarly, the means to convey, catalogue or store information may be targeted as an exploitable weakness or means to affect the superiority of decision-making processes.

If information stored in a data warehouse is a possible target, then information stored in an individual's brain is also a possible target. Unlike the data warehouse, the human brain is more susceptible to influence because it relies on cognitive "firewalls" instead of cyber firewalls. Perceptions, beliefs and values can be targeted directly or indirectly using selectively delivered and packaged information. Recent technological innovations offer greater access to more people than ever before with the widespread and increasingly routine use of email, the World Wide Web and satellite communications which can transmit or transfer information and messages to any audience with the means to receive them. In such cases truth will always be a powerful lever. Truthful messages and arguments could be a valuable information-related weapon or bullet but one must accept that perceptions or shades of the truth, will also be targeted by an adversary using selected delivery means, upon selected audiences.

Therefore, as a subject of target selection and effects coordination, information can be withheld, altered, delayed, destroyed or corrupted by a variety of physical, intellectual and psychological means. The potential value to the perpetrator is a desired and exploitable relative advantage in decision-making and therefore relative freedom of manoeuvre and retention of the initiative.

How will Information be Targeted?

Information can be targeted directly at its source where sensors are deceived or denied information. It can be targeted during transmission if intercepted, and denied, delayed or altered. Information can be targeted wherever it is stored and sorted. It can also be targeted via the human and organisational processes used to present and analyse the information. There are two broad information related element that could unhinge or affect our decision cycle, which will need protecting against an adversary's targeting action. The first is the more obvious information assurance aspects of information purity and system security. The responsibility for minimising threat access to our systems and their information falls easily to the corporate services area of an organisation. The second element represents a more permeable but less tangible targeting action that uses or affects individuals or processes to secure an advantage. Whichever way information is targeted, the ultimate focus and effect required will be directed at the decision-maker. Regardless of the method employed to influence the quality, visibility or timely delivery of information, one constant will prevail in a successful information related operation or campaign. That constant will be coordination.

Coordinated Targeting

When information in its many forms is targeted to secure or exploit an advantage, coordination of effort and effects will be of paramount importance. Pressure can only be successfully applied, directly or indirectly, on decision-makers if the wide variety of means involved in manipulating and presenting information is coordinated in time and space for maximum effect. Coordination therefore, can only be achieved once an intellectual study or appreciation has occurred to identify potential or real weaknesses and a dedicated collective will of the organisation to conduct such actions is apparent.

At the strategic level coordination implies harnessing the gambit of resources available to the Government to achieve the desired result or to support a particular focus of effort. The broader view of government's ability to influence decision-makers tends to have wider application than just military and diplomatic leverage. The broader possibilities of social, economic and personal influence are referred to as asymmetric options and these have potential for far-reaching impacts, which MUST be well coordinated if employed.

Conclusion

The Revolution in Military Affairs seeks to exploit advances in information and communications technology. While information itself is not a weapon, selected information could play a vital role in offensive and defensive actions in the three influential domains of physical, intellectual and psychological manoeuvre. Likewise, information and its communications conduits will be the subject of planner's assessments and actual targeting. Non-lethal engagements of selected information, information systems, processes and individuals within a system may be as productive to future warfare as lethal engagements were in previous wars.

The constant factor in determining if an advantage can be secured using selected information as part of a weapon system, is the need for human cognitive processes to prioritise and coordinate desired effects. Timing may be critical to achieving the desired results in as effective and efficient a manner as possible and processes must ensure asymmetric actions do not conflict.

The Revolution in Military Affairs will only fully achieve the potential offered by technological advances when human cognitive processes are aligned with sufficiently well-structured headquarters and intra and inter departmental organisations. These organisations will also need to embrace a streamlined and decisive decision-making culture to achieve successful exploitation of the Revolution in Information Technology.

The important indicator that information and communications technologies have been harnessed, and

a Revolution in Military Affairs has commenced, will be evidence that an organisation, say the ADF, has established structures and modified cultures to enable effective coordination to occur. Such action will imply acceptance of national moral responsibility and authority to conduct information related operations, and demonstrates the necessary courage and conviction at the highest levels to conduct coordinated asymmetric operations.

NOTES

1. *The Macquarie Concise Dictionary, Second Edition, 1988.*
2. The bullet will expend its kinetic energy and therefore has limited effect in time. Its trajectory is fairly predictable and unforeseen events (ricochet) dissipate the finite energy reserves further.
3. Human cognitive processes are based on a mixture of experience, knowledge and professional mastery of the individuals in the system.
4. The US military use the term "deconflict" to describe the process that identifies and prevents discord and conflict between associated delivery means.
5. This implies more than just the military cultures that exist in the ADF. It is acknowledged however, that military cultures will need to change in a variety of ways. Directive control with its associated responsibilities both up and down the structure will need to be embraced. The military's human resource management culture will need to change to allow for specialists to be trained, retained and rewardingly engaged so that individual and collective knowledge becomes a substantial positive factor in the defence of the nation. Similarly bureaucratic cultures and political cultures will need to be examined to encourage initiative within stated bounds to exploit military, bureaucratic and social opportunities to secure advantage for the nation strategically, operationally or tactically.
6. Only when effective and efficient human cognitive machinery, has been established, can the RMA harness the potential offered by information bullets for use as a "weapon" by exploiting aspects of the Information Revolution.

Lieutenant Colonel David Harris graduated from the Officer Cadet School, Portsea, in 1979 and was allocated to the Royal Australian Armoured Corps. He has served in a variety of regimental and instructional postings, which included command of a tank squadron in 1992-3. He attended Command and Staff College, Queenscliff, in 1994 and has enjoyed a series of staff and command appointments in Army Office, Training Command and Strategic Command since then. Before retiring in December 1999, Lieutenant Colonel Harris was Staff Officer Grade 1 Information Operations in the Directorate of Joint Plans in Strategic Command.

Value-Adding in the Military: Three Australian Army Case Studies

By Major S. Harris, ARA, Lieutenant Colonel P. Smith, AA Avn, Lieutenant Colonel A. B. McLaren, ARA, and
Rev. Associate Professor P. A. McGavin

The application of current management concepts to defence service delivery is often difficult. Value-adding is a case in point. It is one thing to improve input:output relations – e.g. delivery of more product for the same resources, or even for less resources (i.e. quantity input:output improvement). It is another thing to say that the change in mix and in quality in product delivery brings more favourable outcomes as between input values and product values (i.e. input:output value relationship improves). In management terms, "productivity" is not a physical quantities relationship, but a relative values relationship. Thus, in management terms, "productivity improvement" means value-adding.

Assessment of success in value-adding is difficult for military products. Intermediate military products may be "on sold" (albeit, usually "at cost" within the larger military organisation), but military final products are not "sold" to anyone, and typically are "public goods". The resources used in the production of military products may be acquired at market prices (and thus have an *input* market valuation), but the military products are usually not priced (and thus lack an *output* valuation). This makes for difficulties in the application of the "value-adding" concept.

One recourse is to deliver "more for the same" or "more for less" – on the reasoning that if the same product is delivered for the same input, then value-adding is achieved, and, with added emphasis, if more product is delivered for less input, value-adding is achieved. This line of reasoning holds certain things constant (e.g. no deterioration in product quality, no deterioration in product value such as occurs where the product becomes obsolete or less useful, etc.). An alertness to product *valuation* is essential, otherwise supposed value-adding achievements become but "cost-cutting" achievements, and actual value-adding change could even be negative (i.e. productivity change be negative).

The three case studies presented in this article give three examples of the utilisation of the value-adding approach for achieving and assessing the achievement of value-adding in Australian Army contexts.

Case Study 1

Value-adding in Logistics Support for Army aviation

The Logistic Troop of the 5th Aviation Regiment is an organisation with a large span of command. It is commanded by a Captain with a staff of 51 soldiers ranging in ranks from Trooper to Warrant Officer Class

One. The responsibility of the Quartermaster (Officer Commanding Logistics Troop) is to deliver logistic services in the form of all day-to-day and future needs in support of a regiment of 550 personnel, 242 vehicles and 36 helicopters. This support is delivered in the form of supply, transport and catering services. The vehicle fleet is used as an example of implementation of productivity improvements. Pursuit of these improvements is assessed under the three headings of physical resources in terms of "capital equipment", people or "human resources", and the "organisation". Under each of these headings ("capital", "human", "organisational"), improvements are considered in terms of (a) better use of existing resources, (b) expanding existing resources, and (c) changing resources through technology change.

Using capital for value-adding improvement

The Regiment had 242 vehicles or machines with wheels. These ranged from prime mover trucks through to construction vehicles and a variety of trailers.

Better use of capital resources

The job of the Transport Platoon is to control the vehicles and keep vital assets deployable in a high state of readiness. To complete this task the Commanding Officer (CO) implemented a whiteboard system, in the Transport Platoon office, where every vehicle was recorded with key details, including serviceability status and location. This enabled personnel across all ranks to have access to information and react accordingly for tasking or maintenance. A computer database in the form of a spreadsheet is also maintained. This spreadsheet is updated weekly and distributed to the stakeholders to enable visibility of their assets.

Productivity growth was apparent to the stakeholders as the responsibility for efficient vehicle

management was delegated to the lowest person in command. As a result vehicle, serviceability increased. The Regiment vehicles were now effectively managed. However, they were still limited assets to satisfy all needs. What was needed next was to diversify the use of the vehicles to create productivity gains through increasing fleet flexibility without increasing the fleet size.

Expanding capital resources

The challenge was to develop a system where Tricon and ISO shipping containers could be deployed without the expensive acquisition of more vehicles. The solution was to modify all field deployable vehicles with a capacity of four tonne and larger with a container security system called "twistlocks". This allowed the vehicle to be tasked in a variety of roles. The modification was inexpensive at \$11,000 per \$260,000 vehicle. As the modification did not come from unit costs, the modification was a zero opportunity cost to the unit.

As a result of the modification, a single vehicle was able to enact a troop lift, move a variety of different containers, and transport general cargo. All of these tasks could be achieved in a single day just by changing the configuration of the tray area of the truck to suit the task. The stakeholders were positive about the modification as they measured an increase in capability without additional maintenance or training costs. The vehicles could now be more flexibly tasked, thereby increasing their effectiveness and efficiency. However, technology needed to be exploited further through a management information system which would enhance vehicle serviceability.

Capital technology change

With an increase in vehicle usage, there was a corresponding increase in unservicabilities. The unserviceability may occur anywhere at any time. With repairable vehicles deployed in different areas of operation and in different stages of repair, it became essential to track these vehicles by a database. A technology was introduced, in the form of a network computer program, to enhance productivity improvement by enabling access to workshop information to keep a track of repairs. This information system was updated regularly to enable the unit workshop commander to advise stakeholders of vehicle availability. Stakeholders measured this innovation with

a positive view as it aided their decision-making process in regard to vehicle deployability.

Capital improvement is only one aspect of optimising productivity improvement. To gain the full benefit of the change it should be implemented with corresponding improvements in human resource performance.

Using human resources for value-adding improvement

Upon being posted to the Regiment the CO reviewed work practice in the Transport Platoon and identified some slack in the use of the available people resource. These inefficiencies were noted because of the CO's past experience and these procedures had existed for many years without being questioned or reviewed. As a result of conducting a rudimentary input/output analysis and after a consultative process, changes in the pursuit of the better use of human resources were undertaken.

Better use of human resources

The Transport Sergeant was tasked to promote the practice of utilising the Transport Task Order Form. This document would record, against a database, all task details including time spent and task outcomes. This information became the catalyst for improved intensity of effort, quality of effort, and task assignment assessment. The reason the tasking system was proactive in enhancing the outcomes was because the Transport Sergeant used the Transport Task Order database as a part of the reporting tool on the soldiers. The Transport Sergeant also was able to access information to verify hours worked in support of requests for time off. Because there was some benefit to the soldiers, it motivated them to complete the form. Stakeholders enjoyed improved productivity through better motivated and more accountable soldiers.

In synergy with the earlier discussion on capital resources there was usually more work than people, therefore, the advantage of expanding human resources had to be considered.

Expanding human resources

As a result of regimental deployments it was necessary to validate the Transport Platoon established personnel level. It was apparent that the section was understaffed. This was obvious when only one driver per vehicle was available for deployments. This one soldier would drive the machine but he could not unload it with a forklift or use the backhoe that was being transported because the driver was not qualified for that task. It was

obvious that increasing the manning establishment was not an option, as the Regiment had a clear manning cap and any request for additional manpower was simply not possible. It became clear that the Transport Platoon would mostly need to work "smarter", rather than "harder". It would be necessary to multi-skill and re-skill some personnel.

Human technology change

The goal of the CO was to multi-skill the soldiers and equip them with additional capabilities. After adequate training, soldiers were able to drive trucks, unload them with the available forklift, and unload and operate the backhoe that was being transported on the truck.

Re-skilling soldiers of other trades to drive heavy vehicles also had an advantage, as they now carried that previous skill with them. For example, re-skilling an Aviation Ground Crewman to drive a heavy vehicle meant that the stakeholder now had the capability to refuel aircraft from a heavy tanker utilising just one person. Measuring the cost of multi-skilling and re-skilling against the capability enhancement showed clear productivity improvements.

Organisational improvements

The organisational framework of Transport Platoon was set up along the standard Army hierarchical chain of command. This system worked very well within the bounds of the typical Transport Platoon and all members were trained and comfortable with that system. There was no value in changing the basic organisational structure of the Platoon. However, the introduction of the whiteboard system and computer database mentioned substantially altered information flows within the organisation and thereby achieved organisational improvement, as the information was now in the public domain and the users became accountable for their actions.

Summing up achieving value-adding in Army aviation logistics support

Productivity improvement has become a real issue in Army units. Various manpower reviews constantly seek ways to force stakeholders formally to review their resources – capital, manpower, and organisation. They are encouraged, through their chain of command, to produce results that expect soldiers to work smarter not harder. It is expected that they validate productivity gain by constantly measuring it against previous practice to ensure its validity. This case study shows the optimal

utilisation of existing resources and optimal expansion of resources, coupled with technology choice and the choice of organisational form to produce the most efficient Transport Platoon possible.

Case Study 2

Value-adding in an Army helicopter unit

No. 162 Recce Squadron is an Army helicopter unit. The implementation of financial reforms within the Defence Department, shortages of specialist personnel and the impact of unforeseen technical problems with aircraft maintenance required a reassessment of production methods in order to attain set objectives through increasing productivity. The aim of this case study is to describe the value-adding improvements that were undertaken within 162 Recce Squadron in order to improve productivity.

The role of 162 Recce Squadron is to undertake a number of specialist tasks through the provision of helicopter support to the Army. The ability of the squadron to undertake these tasks depends upon the "delivery" of specific services or capabilities. Production within the squadron occurs in a multi-factor/multi-product environment. A wide variety of input resources are used to develop and maintain capabilities including personnel, equipment, funds for the purchase of consumable items, spare parts, fuel, and rations and ammunition for field exercises. The products include the provision of serviceable helicopters with a set rate of effort (expressed in flying hours *per annum*), competent crews to fly the helicopters, the provision of ground transport assets, and the development and maintenance of a range of core soldier skills such as fitness and weapon proficiency.

A direct relation exists between the total allocation of resources and the ability of the unit to achieve set objectives. However, the accurate measurement of variation in productivity within the squadron is difficult because of the varying nature of input factors and the varying forms of outputs produced. There is, however, a single input factor common to every facet of production within the squadron which is easily measurable – namely, personnel work rate expressed in hours.

Given that the primary role of 162 Recce Squadron is to operate helicopters, the production of flying hours is critical to the effectiveness of the unit. A superior headquarters allocates resources to 162 Recce Squadron that are considered to be sufficient to produce the rate of effort needed to achieve the squadron's operational

objectives. To simplify the management process, outcomes are expressed in terms of an annual rate of flying effort (annual flying hours). Flying hours are produced through the application of capital assets (aircraft and tools), human resources (maintenance personnel and aircrew), and consumable materiel (spare parts and petroleum products etc.). For the financial year 1996-97, 162 Recce Squadron was directed to produce a flying rate of 4,250 hours. Traditionally, this allocation had been thought to be too high with average annual flying rates of between 2,500 and 3,700 hours being achieved.

A fixed number of personnel and a finite working day limit the number of hours available for production. The CO was only able to adjust the proportion of time that maintenance personnel spent repairing aircraft and organise for the acquisition of some lower cost tools which were required to conduct those repairs. The CO was cognisant of the need to maintain a realistic balance when allocating work effort against competing tasks to achieve specified objectives (i.e. maintain effectiveness in product delivery). For example, the development of soldier skills required that effort be allocated to developing rifle proficiency, fitness and field skills which reduced the resources available for aircraft maintenance. Over a longer time period, the CO was able to have some impact on capital assets. Some of the more significant productivity improvements that made this possible are outlined below.

Using capital for value-adding improvement

Capital technology change

Following completion, many helicopter maintenance procedures require comprehensive testing in order to ensure aircraft safety and optimum performance. In particular, maintenance on the main rotor blades requires the use of specialist vibration test equipment. Customarily, testing has been completed using technology developed in the 1970s – known as the “Strobex”. The procedures for adjusting vibration levels relied on manual calculations from the observed test

data and were often subject to unpredictable results caused by human subjectiveness and non-uniform variation between different components. The test data was obtained by test-flying the aircraft for short periods of time and observing the results of adjustments made to the flight control system and then making further adjustments if required. A follow-up flight was undertaken after each adjustment. Throughout a year and over the fleet of aircraft this process required extensive use of specialist personnel and consumed a larger number of flying hours.

Approximately \$100,000 of maintenance funds were expended to purchase advanced test equipment – known as the “8500”. This piece of equipment used computer analysis to predict the results of control adjustments to the helicopters, resulting in less time being required to test-fly aircraft. A comparison of the two technologies is given in Table 2.1.

The introduction of new technology resulted in significant savings in flying hours and maintenance effort. An increase in productivity occurred as a result of reducing the factor of input: 70 *per cent* for human resources and 58 *per cent* in flying costs. Flying hours were then available to be diverted to the achievement of operational objectives, and maintenance effort could be reallocated to other tasks (thereby achieving improvements both in effectiveness and efficiency of 162 Recce Sqn).

Using human resources for value-adding improvement

Better use of human resources

Traditional military practice means that most units assemble in the morning for a parade. Within 162 Recce Squadron this took approximately 20 minutes and contributed little to overall production. Additional activities throughout the day consumed even more valuable maintenance production time. Through averaging timesheets it was seen that the average technician lost 1/2 hours per day to activities that were not core maintenance functions. Efficiencies were achieved through changing routines and redirecting

Table 2.1. A Comparison of Old and New Test Technology

	Strobex	8500 Test Box	Improvement
Flying effort used (hours)	1.2	0.5	58%
Human resources used (hours)	10	3	70%
Cost of test in flying hour dollar terms	\$1800	\$750	58%
<i>Note: One flying hour is valued at approximately \$1500.</i>			

effort. Innovative programming was developed to ensure that military training objectives were also met without the need for long periods of time absent from the primary workplace. For example, rather than spend all day on a rifle range, personnel were taken from their workplace only long enough to practice with a weapon or undertake other military training and then returned to maintenance tasks. A comparison of the improvements attained through process changes is given in Table 2.2.

Table 2.2. Breakdown of Human Resource Usage

Activity Following	Prior to	
	Process Change	Process Change
Morning Parade	0.25	0.00
Fitness Training	0.30	0.30
Morning Break	0.25	0.20
Lunch	1.00	0.75
Unit Training – non-maintenance	1.25	0.75
Personal and administration	0.50	0.25
Other unit tasks	0.60	0.25
Courses (from annual averages)	0.50	0.50
Total Time available for maintenance	3.35	5.00
Percentage Improvement		49%

Expanding human resources and altering human resource mix

The squadron was able to obtain two civilian maintenance contractors. As they were not required to undertake military training and could devote their entire day to the primary maintenance function, civilian technicians were more productive than military technicians in pure maintenance terms. In real terms, the productivity of these two contractors equated to an increase of approximately 4.5 military personnel (a

comparison is shown in Table 2.3). This allowed the squadron to maintain a fixed rate of aircraft repair in barracks while allowing military technicians to attend courses, conduct other important military training or take leave. The civilian technicians were not required to deploy to the field for exercises and could be left to undertake heavy maintenance tasks in the absence of military technicians. This expansion and compositional change in 162 Recce Squadron human resources achieved significant improvement in value-adding for the unit.

Human technology change

Metalwork repairs on aircraft had traditionally been carried out by other agencies geographically separated from 162 Recce Squadron. As a result of delays in priorities allocated by other repair agencies and the time taken to transport aircraft to and from remote facilities, a repair requiring two hours of physical maintenance effort might take two weeks to complete. An additional military tradesman with the necessary metalwork skills was introduced to the squadron in order to undertake metalwork repairs. The introduction of a metalworker meant that repairs could be carried out more rapidly on location thus allowing the aircraft to be available for longer periods of time for operational tasking. The metalworker is a military technician and so required an outlay of approximately \$60,000 *per annum* from the Army budget. However, the effectiveness of the unit was increased due to increased numbers of aircraft being available to provide services to supported units.

Summing up achieving value-adding in Army helicopter maintenance

Value-adding improvements led to an increase in effectiveness and efficiency, through increased productivity of 162 Recce Squadron. Adjustments to the programming of technicians produced efficiencies within 162 Recce Squadron which added value to the maintenance work produced within the squadron.

Table 2.3. A Comparison of Military and Civilian Technicians

	Civilian Technician	Military Technician	Remarks
Labour cost (wage & non-wage)	\$35000	\$60000	The cost of a military tradesman includes estimated non-salary components including rental subsidies, health care etc.
Average work rate/day	6.5 hours	5.0 hours	
Annual average hourly cost	\$23	\$51	Calculations assume 5 days per week and 47 work weeks per year.

Human and capital technology changes also increased service delivery and aircraft operations availability. As a result, the squadron was able to increase its flying rate from 3,750 hours to 4,310 hours, an increase of 15 *per cent* over the previous year.

Case Study 3

Value-adding in Army ammunition supply

Myambat Logistic Company (MLC) is located in the upper reaches of the Hunter Valley in New South Wales. Since 1938, MLC has been part of the ammunition supply network for the Australian Army. Corporate rationalisation in the late 1980s identified Myambat for medium-term to long-term planning as the sole Army ammunition unit. In 1994, a "state-of-the-art" explosive storage facility was completed at MLC to enable the facility to meet the expanded role.

Unit storage capacity increased by 150 *per cent*, which in turn was estimated to almost double issues of ammunition. Although the upgrade of MLC originally included a 25 *per cent* increase in unit personnel, the Australian Defence Force (ADF) reform programs of the early 1990s meant that those personnel increases never materialised. With the ADF budget capped in real terms, MLC higher headquarters 1994-95 budget allocation for unit operating costs was reduced by \$9,000. Therefore, there was a need to improve unit productivity to cope with the broader national responsibility thrust on the unit and prepare MLC for wider ADF ammunition support responsibilities in the latter half of the 1990s and beyond.

Using capital for value-adding improvement

Better use of capital resources

Initial steps to optimise capital resources were relatively simple. A management driven "housekeeping" campaign to improve safety and cleanliness across the unit had an immediate and tangible flow-on effect. Excess equipment and stores were identified in all areas and either returned to the servicing Regional Logistic Unit (for re-issue to another unit) or sold at public auction. This significantly reduced costs associated with maintaining unit equipment and improved the Occupational Health and Safety environment at MLC.

Equipment downtime was reduced by intensive management and revised maintenance schedules. Operator maintenance of vehicles was emphasised and reinforced. Local suppliers were used for repair parts and equipment repair beyond the capabilities of the unit, instead of being taken to Sydney (some 310km away). These factors combined to increase the availability of the forklift and truck fleets by over 50 *per cent*.

Expanding capital resources

Forklifts were a critical factor of production. "Downtime" needed to be reduced if productivity was to be increased to the required level. The forklift fleet was standardised by exchanging two vehicles. The distances forklifts had to travel was reduced by over 40 *per cent* by:

- minimising the internal movements of ammunition (through computer-aided task planning);
- acquisition of an additional five tonne flatbed truck with a hydraulic ramp; and
- the construction of forklift storage sheds adjacent to Explosive Storehouses (ESHs).

When combined with the revised maintenance arrangements, MLC rarely had an unforecast forklift loss.

Capital technology change

Due to the 1994 upgrade of unit facilities, little could be done to improve or change capital technology. However, the Ammunition Repair Workshops were reconfigured to include labour-saving devices in the ammunition technical and repair processes and thus enable greater throughput. A computerised security system was installed that supplemented the watchmen and enabled two guard positions to be transferred to the "production" functions within the unit.

Using human resources for value-adding improvement

Better use of human resources

While multi-skilling between positions and a unit-wide computer literacy program were the central tenets to optimising the existing workforce, it was the unit alliance with the local community that had the greatest impact on efforts to better utilise existing human resources. MLC is extremely important to the welfare of Denman, a township of 1,500 and the nearest population centre to MLC. The entire civilian component of the workforce live in Denman and MLC is the town's major employer. The constant media speculation and publicity of the ADF's commercialisation and "market testing" through the Commercial Support Program was seen as a threat to the future welfare of Denman. It was in the best interests of the entire township that MLC adopt quality labour practices that would contribute to productivity improvement and therefore reduce the threat of out-sourcing.

An improved work ethic and ownership of unit work practices by the workforce were not only emphasised in the workplace but also proudly announced in the town newsletter on a regular basis. This engendered a degree

of pride in the wider community of "their Army base". It also meant that the MLC workers were "encouraged" by their families and friends to avoid unwarranted "sickies". Absenteeism was cut to a negligible level and the intensity of effort in the workplace rose dramatically.

Expanding human resources and changing human resource mix

In 1993, one-third of the MLC staff were "non-production" or administrative staff. This imbalance was corrected by contracting the catering function (which MLC won as an in-house contract); posting out two under-utilised uniformed Motor Mechanics and delegating ground maintenance responsibilities to functional workplaces. This realised a saving of nine administrative personnel whose positions were transferred to the warehousing function. This improved the overall core-production/non-core-production staff ratio.

Human technology change

By identifying the skill mix required to meet productivity growth, skills such as forklift and truck drivers that were essential to core production were obtained through courses run internal to the unit. The other marked change to "Human Technology" was the identification of individuals with the potential for higher employment. They were voluntarily enrolled in unit-

sponsored civilian management courses that enhanced the kind and quality of their workplace skills.

Summing up achieving value-adding in Army ammunition supply

The relationship of inputs to outputs was difficult to establish when attempting to measure unit productivity. Input could be measured in terms of time (equipment usage, "downtime" and personnel time) and cost (equipment maintenance and replacement, wages and allowances). Output could be measured in terms of quantity (number and types of ammunition items stored and issued), weight (net and explosive content), and transaction volume.

In simple terms, while the input factors of production could be accurately translated into dollar terms, and ammunition storage could be measured in terms of the cost per pallet, each issue was invariably different with no simple relationship between transaction volume, weight and quantity. For example, one issue may be 1,000 rounds of small arms ammunition (in a single 0.6m3 box weighing 12kg) or, on the other hand, 1,000 rounds of 105mm gun ammunition (on 25 pallets weighing 20 tonnes). Therefore, each issue required a different mix of resources to realise the output, with total annual issues derived from the amount of ammunition stored at MLC.

From experience and historical data, a relationship was established between the total amount of

Table 3.1 MLC Productivity Measures

Fiscal Year	Ave # pallets stored (PLT)	Total ammo moved (Tonnes)	Ratio moved: stored	Issues (Tonnes)	Issues as a % of total moved	MLC OP costs (\$,000)	Issues cost (S/T)	Issues p'tivity
			C/B		E/C		G/E	E/G
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)
89/90	4,790	2,537	0.53	634	0.25	1.99	3,142	319
90/91	8,412	4,183	0.50	1,213	0.29	2.10	1,730	578
91/92	9,858	5,815	0.59	1,787	0.31	2.02	1,128	885
92/93	10,438	5,438	0.52	1,535	0.28	2.21	1,442	695
93/94	15,656	7,607	0.49	2,054	0.27	2.47	1,455	832
AVE FY 89/90-93/94	9,831	5,116	0.52	1,445	0.28	2.16	1,494	669
94/95	<i>19,000</i>	<i>9880</i>	<i>0.52</i>	<i>2,766</i>	<i>0.28</i>	<i>2.46</i>	<i>890</i>	<i>1124</i>
⋮								
97/98	<i>24,000</i>	<i>12,480</i>	<i>0.52</i>	<i>3,494</i>	<i>0.28</i>	<i>2.71</i>	<i>775</i>	<i>1289</i>

Note:

Italicised calculations are estimates only. All other calculations are actual performance.

ammunition moved at MLC (issues; receipts; internal movements for maintenance and storage optimisation) and the average number of pallets stored (average ratio of 0.52) (see Table 3.1, column D). The "tonnage" of ammunition issued also showed a consistent relationship to the total amount of ammunition moved (average ratio 0.28) (see Table 3.1, column F).

Using national data for 1994-95, the average number of pallets of ammunition to be stored at MLC was calculated. With the 1994-95 budget fixed, issue costs and comparative productivity growth requirements could be calculated. Although the user did not "pay" for ammunition issued, MLC costs for ammunition issues could be measured in dollars per tonne and productivity compared as a ratio of issue tonnage to unit operating costs.

MLC dramatically improved issue productivity in 1994. The limitations on labour resources were overcome by re-allocating personnel from unit support to functional areas that directly affected unit core-output. Small equipment increases and changes, as well as intensive management to improve availability, offset the need for increased capital resource expenditure. These management measures, when combined with the upgrade of unit facilities, saw productivity levels increase dramatically and the costs of ammunition issues reduce from \$1494/tonne for 1989-90/1993-94 to an estimated \$775/tonne in 1997-98 – on this measure, a productivity improvement of 48 *per cent*. Improved morale and a focus on value-adding were critically important in realising a cost reduction of this magnitude.

Conclusions for value-adding in the Military: lessons from three Army case studies

The three case studies show how, creatively used, the concept of value-adding contributes to understanding and implementing productivity improvements in Australian Army settings. The case studies nevertheless expose the difficulties of

application of the value-adding concept in military contexts where complex and variable input:output relations apply and where inputs (factors) and outputs (products) are often not valued in prices. Assessing change may be assisted by partitioning inputs in terms of (a) physical equipment or capital, (b) human resources, and (c) unit organisation. Under each of these headings, changes may be examined in terms of (a) making better use of existing resources and/or arrangements, (b) increasing resources, and (c) changing the technology of resources – whether physical capital, human resources, or organisational arrangements.

This partitioning schema need not be evoked under each of its 9 categories in each case. The three case studies show the usefulness of the perspective for considering productivity change, for steering productivity change, and for evaluating productivity change.

The pervasive problem of output valuation can in part be addressed by use of key stakeholder reference groups. Such groups can be asked to find consensus agreement on ranking outcomes. Where there is a single product, some quality-weighted index of output may suffice. In multi-product contexts, stakeholders may need to consider different mixes of different products that differ by quantity and quality. By iteratively working through "more preferred"/"less preferred" combinations, a ranking of multiple product quantity/quality outcomes can be generated. This can be extended to attaching prices (i.e. monetary values) to these ranked outcomes. By this process, in principle, value-adding assessments in dollar terms may be generated.

In the absence of such reference group processes, different indicators of value-adding may be adopted. The three case studies presented give three different perspectives on how the management concept of value-adding may be applied to improve effectiveness and efficiency in Defence, using three recent Australian Army examples drawn from first-hand Commanding Officer experience.

Major Scott Harris enlisted in the Australian Regular Army in 1980 and was trained as a Q Storeman and Groundcrewman, serving in 161 Et 162 Recce Sqns, the ADF Helicopter School, and the 5th Aviation Regiment, rising from the rank of Private to Warrant Officer Class One. He was commissioned in 1995 as a CAPTQM and subsequently Officer Commanding Headquarters Squadron 5th Aviation Regiment. His contribution to this article draws on his experience with the Logistics Troop of the 5th Aviation Regiment. He is currently an ILS Staff Officer in the Defence Acquisition Organisation, Canberra.

Lieutenant Colonel Philip Smith graduated from OCS Portsea in 1981. He was awarded the Army Flying Badge in 1982 and subsequently held various appointments, including Commanding Officer 162 Recce Sqn that is drawn upon in his contribution to this article. He completed the degree of Master of Management Studies (UNSW, Australian Defence Force Academy), and is currently a Staff Officer Grade One Aviation at Land Headquarters.

Lieutenant Colonel Alex McLaren, CSC, enlisted in the Australian Regular Army in 1979. After training as a Cartographer Technician as a soldier, he graduated from Portsea in 1981 into RAAOC. He has held various Australian Army appointments, including Commanding Officer Myambat Logistic Company that is drawn upon in his contribution to this article, and that is cited for his award of the CSC in the 1995 Queen's Birthday Honours List. He completed the degree of Master of Management Studies (UNSW, Australian Defence Force Academy), and is currently SO1 Operations at the Joint Ammunition Logistic Organisation.

Rev. Associate Professor Paul A. McGavin was appointed to the School of Economics and Management of The University of New South Wales at the Australian Defence Force Academy in 1986 as a Lecturer. He was promoted Senior Lecturer and Associate Professor, and has held appointments as Head of School and Presiding Member of the University College Academic Board. He is a leading authority on the economy and society of Papua New Guinea. He is also a priest of the Catholic Archdiocese of Canberra and Goulburn. He taught the Army co-authors of this article in the Graduate Management Studies Program at ADFA.

Australian Population and Workforce Trends: The Strategic HR Challenges and Opportunities for Army

By Major David Schmidtchen, AA Psych

"Social analysis and commentary has many shortcomings, but few of its chapters are as persistently wrong-headed as those of the generations and generational change. This literature abounds with hyperbole and unsubstantiated leaps from the available data."

Everett Carl Ladd, Political Scientist

The Army-in-Being (AIB) has been shaped by, and is commanded by, officers of the "Baby-Boom Generation".¹ The Baby-Boomers will continue to have a major influence on Army. They are building the Enhanced Combat Force (ECF) and developing the Army After Next (AAN) concepts, however, the ECF and AAN will be populated and commanded by the "Options Generation".²

The impact of the Baby-Boomers on Australian society has been profound. As they move through each life-stage they disrupt the traditional societal patterns. Strategically, it is important to recognise that this group has altered the shape of Australian society such that traditional attitudes and approaches to human resource management and organisational development may not meet the needs of the Options Generation. The Options Generation has a different world-view to their Baby-Boomer parents. They are better prepared (than their predecessors) to deal with technology and change but are more cynical of institutions and have a poorer sense of organisational citizenship.

The role of Army's human resource strategy is to inform capability development about the cognitive, behavioural and social dynamics of the relationship between the individual and the organisation and how they combine to deliver combat capability. To effectively shape the ECF and AAN the Army's human resource strategy must be an integral part of its capability development strategy.

This article examines the implications of emerging Australian social trends for the Army. It outlines the emerging trends in terms of population growth, family, education, and workforce participation. This article does *not* address the ethnic mix of Australian society, as this is a complex topic that needs to be addressed separately.

The article is divided into two parts. Part One introduces and outlines the key social trends in Australian society drawn from Australian Bureau of Statistics data and projections. Part Two identifies the key attitudinal and behavioural drivers of the Options

Generation and the implications for how Army will recruit, train, retain and manage its people in the future. It concludes with challenges and opportunities these trends will present Army as it develops toward the vision of the ECF and AAN.

Part One – Australian Social Trends

Australia's Ageing Population

Population ageing is a major concern of social and economic planners and policy makers in all developed regions of the world.³ The focus has been on the additional cost associated with the care and income support required for a rapidly growing aged population, and how much the community is willing and able to pay. A cursory examination of Australian Government policy in health, superannuation and cost reduction in social security indicates the importance of the problem.

Australia's population has aged steadily throughout this century, apart from the period 1947-60 when the highest annual growth rates of the century were recorded. Much of this increase is attributed to natural birth rates. The "Baby-Boom" occurred as a result of large numbers of young people marrying after WWII and the late completion of child-bearing that had been delayed during the war years. Superimposed on this was a high level of growth from immigration as the Government actively sought to increase Australia's population.

While population growth in the 1960s remained relatively high, the combination of the introduction of the contraceptive pill in 1961 and reduced immigration resulted in a steadily declining population rate. During the 1990s the annual growth rate has been lower than at any time in the previous 50 years.

Structure of the Population

The age structure of the population is a legacy of its past growth patterns. Because the Baby-Boomer period was significantly larger than previous cohorts it has had, and will continue to have, a large impact on the

population structure as it moves through. Table 1 shows that at the end of the baby boom (1961) the proportion of the population under the age of 15 was 30 *per cent*. In 1997, that proportion had dropped to 21 *per cent* and is projected to decline further to 17 *per cent* by 2031.⁴ Similarly, the median age of the population has increased from 29 years in 1961 to 34 years in 1997. The median age is projected to be 42 years by 2031.

The proportional shift in the population between those in the labour force and those aged over 65 will become important when the Baby-Boomers leave the labour force. This will occur between 2011 and 2031. While the Australian population will continue to expand during this time, the proportion of the population aged 17-25 will decrease.⁵

Army's recruiting base will shrink relative to the rest of the population. As the Baby-Boomers retire they will demand and require services, which will be generated, delivered and supported, in part, by those aged 17-25. Consequently, there will be increasing national demand for this age group – accessing and retaining quality people will cost more.

There will be a shrinking tax base from which to fund these additional labour costs and a greater proportion of the workforce may need to be employed in income generating work. This will contribute to an increasingly competitive budget environment where the relevance and cost effectiveness of the Australian Defence Force (ADF) will be monitored even more closely than it is today.

What does this mean for Army?

Two major issues arise for Army from this analysis of the ageing population. First, there will be increased competition for the young labour market, which reinforces the need to be able to retain and make best use of Army's existing workforce. Second, there will be increased pressure on government funding to deliver the services required of an ageing population which could result in a reduction in Defence spending.

Health and Death

The Australian population is not only ageing through reduced birth rates but also because people are living longer. The health of the population, including people aged 65 years or more, has greatly improved during this century. Males born in 1997 can expect to live to 76 years of age and females to 81 years. Improvements in life expectancy are directly related to lowering mortality rates of all ages. However, between 1967 and 1997, the death rate for those aged 65-69 decreased by 47 *per cent* while for those aged over 85 declined by 26 *per cent*. In essence, those most likely to benefit from advances in medical science are the older population. While the number of deaths in Australia is projected to rise as the Baby-Boomers move through, these people will be healthier and live longer than any previous generation.⁶

Not only are people becoming healthier and living longer, they are generally fitter and staying active longer than previous generations. Recognising this issue, the United States has recently amended legislation to allow Service personnel to serve longer than the previous 34-year limit. Many Baby-Boomers, recognising the diminishing ability of succeeding generations to support them in retirement may choose to work beyond current retirement ages. They are likely to invoke discrimination laws to support their cause.

What does this mean for Army?

It will become increasingly important for Army to retain and make the best use of its people. In particular, as people remain healthy and live longer it is likely that their useful working life will also be extended. It seems inevitable that at some time in the near-term someone will challenge the age limits on service in the ADF.

Education

The levels of educational attainment have increased significantly over recent decades. In particular, there has been a rapid growth in the levels of participation in post-school education programs. The flexible delivery of

Table 1. The key features of the changing structure of the Australian population

Force Concept		AIB	ECF	AAN
	1961	1997	2011	2031
Median Age – Population (Years)	29	34	38	42
Proportion of Population (Under 15)	30%	21%	18%	17%
Proportion in Age 5-14 (School Age)	20%	14%	12%	11%
Proportion of aged 15-24 (Post-Compulsory School Age)	14%	14%	13%	12%

education has also stimulated increased participation by older people and those already in the workforce. Similarly, progressively higher participation by younger women reflects social changes in women's roles and responsibilities in society.⁷

Level of attainment

In 1989, 39 *per cent* of the working population (aged 15-64) had not completed the highest level of secondary school. This proportion has progressively decreased to 34 *per cent* in 1998. Similarly, the proportion of the labour force with a Bachelor degree or higher has risen from 8 *per cent* in 1989 to 14 *per cent* in 1998. Those with skilled or basic vocational qualifications (a recognised trade or craft) have remained relatively steady from 1993 to 1998, however the trend appears to be toward a decrease.

While there is little overall difference in the educational attainment of men and women, when the breakdown by age is considered the differences become more pronounced. Higher proportions of women aged 24-34 have completed a degree or higher qualification than men. In the 15-24 age group, a slightly higher proportion of women than men had attained a post-school qualification, and women were more likely to hold a Bachelor or higher degree.

Destinations of School Leavers

In 1998, 29 *per cent* of school leavers went on to a higher education institution; 24 *per cent* went to vocational study at TAFE and five *per cent* attended other educational institutions. There were 43 *per cent* of school leavers who were not attending an educational institution.

The major shift in this profile since 1988 is that significantly more school leavers go to higher education (approximately 18 *per cent* in 1988; 29 *per cent* in 1998) and significantly less are not attending an educational institution (approximately 56 *per cent* in 1988; 43 *per cent* in 1998).

A combination of environmental conditions and government policy has resulted in significantly more school leavers delaying their entry to the workforce. A higher proportion of the young workforce has a higher level of education than previous generations. With additional education will come a change in their expectations of suitable employment.

What does this mean for Army?

The decline in the number of students not completing the highest level of secondary education

may have a negative impact on the number of General Entry (GE) applicants to Army. Those soldiers who have traditionally populated the base Army trades may become increasingly difficult to attract as there may be increased competition for people to do traditional "blue collar" work.

Changing expectations of work is a key theme that will emerge from the significantly larger number of school leavers completing their education. Potential officer applicants have an expectation that Army must provide an up-front opportunity to gain tertiary qualifications.⁸ With an increasing number of students completing tertiary education it may be appropriate to move aggressively into a "buyers" market and attempt to capture a larger number of applicants who have already completed their degree. Strategically, this may be an opportunity to increase the intellectual diversity of the officer corps without the expense of providing the majority with up-front education.

A growing proportion of the tertiary education market is female. To make best use of this market Army may need to attract and retain women in larger numbers. This has significant flow-on implications for a number of human resource functions and processes, not the least of which will be how military careers are managed.

The Nature of Work

The increased entry of women into the labour force, the growth in service industries, and government policies designed to increase employer flexibility and competitiveness has led to large disparities in the hours worked among employed people. There has been a marked shift away from the norm of a full-time job of about 40 hours per week. Between 1988 and 1998, both the proportion of people working part-time hours and the proportion working at least 45 hours per week increased. Generally, those working longer hours were older males. As a result, the proportion working 35-44 hours fell from 42 *per cent* to 36 *per cent*.⁹ These results suggest that Charles Handy's observation that half the people will be doing twice the work for three times the pay may be coming to fruition.¹⁰

Overall, 37 *per cent* of people are working less than 35 hours per week. The largest proportion of new entrants to this category since 1988 are men and women aged between 15 and 24 years. This represents increased rates of under-employment in this age range.

What does this mean for Army?

As more Australians become involved in a series of part-time jobs rather than full-time work, there may be an opportunity for the Army Reserve to become a viable alternative for many people. To fill this niche it is likely that Army Reserve service will need to become more flexible than it is at the moment, particularly in terms of the training requirement. Army Reserve personnel members in full-time civilian employment are likely to have less time to attend formal training. As the trend toward part-time employment increases, Army Reserve employment may become some member's primary source of income.

Additionally, increasing numbers of the youth labour force are under-employed,¹¹ yet they are not choosing the Army as a long-term career.¹² Army needs to review the behaviour drivers for the Options Generation and determine why the Army is not seen as an attractive career.¹³

Underlying these figures is strong growth in the Service industry. However, these are "low-knowledge jobs" in that they require relatively specific experience or narrow on-the-job training.¹⁴ There are similar low-knowledge jobs in manufacturing and heavy industry and it could be argued that traditionally those who did not complete school filled these positions. The majority of Army's GE applicants were selected from the same pool. As more school leavers complete secondary school and tertiary education and their expectations of what constitutes suitable employment changes, the pool of applicants willing to fill traditionally physical, low-knowledge positions will become smaller. Potentially, the competition to attract applicants to fill low-knowledge soldier positions will increase.

Family

Increasingly, families with children under 15 years have both parents in paid work. There is an ongoing challenge to balance family responsibilities. The median age for men at their first marriage is 28 years (26 in 1987) and for women it is 26 years (24 in 1987). The median age for mothers at first birth was 27 years in 1997 with 28 *per cent* of all births occurring outside marriage (increase from 18 *per cent* in 1987). The proportion of divorces to marriages has increased from 1 in 3 in 1987 to 1 in 2. The proportion of children under 15 living in one-parent families has increased from 13 *per cent* in 1990 to 20 *per cent* in 1998.

Preliminary research based on those who applied for GE between 1993 and 1996 has found that 41 *per cent*

of all male applicants come from "broken homes".¹⁵ Moreover, these applicants were 10 *per cent* less likely to have finished year 12 than their peers. Early analysis suggests that even higher proportions of female GE applicants are from "broken homes". Army is attracting significantly more people from "broken homes" than the national average.

The proportion of people aged 20-24 living with their parents has increased from 43 *per cent* in 1988 to 48 *per cent* in 1998. Similarly, those aged between 25-34 living with their parents has risen from 9 to 12 *per cent* in the same time frame. Increasingly, young people appear to be delaying the move to social independence. Initial military training is based in part on the assumption that the recruit or cadet has the psychological maturity to separate from their family as well as some basic personal and social skills required for independent living. A delayed move to social independence in the wider community may require Army to revisit and revise these assumptions.

Couple families with children under 15 where both parents are employed have risen from 50 *per cent* in 1988 to 56 *per cent* in 1998. Children under 15 living with families where no parent is employed has fluctuated around 18 *per cent* since 1993, in 1998 it was 20 *per cent*. For a growing proportion of the population "marriage" and "family" are associated with change, instability and uncertainty. As family life plays a major role in the formation of values and belief systems it is important to note that the world-view of these young people may well be markedly different to their parents.

What does this mean for Army?

Many of the key life-stage milestones are extending further into adult life than they have with previous generations. This may change the traditional timing between key life-stage and career goals. Increasingly, young people are delaying their entry to the workforce, this may have flow-on effects for career management as key career and family decision points are also delayed. Army career management and workforce planning will need to monitor these changes closely to effectively manage individual expectation and organisational need.

A larger proportion of the population is likely to have a different (and more varied) understanding of what constitutes a "family" than previous generations. It may be that those from "broken homes" are attracted to the traditional view of Army as an "extended family" or a source of social stability in adult life.

There may be a growing percentage of the population whose family experience does not involve an understanding of the nature of work or whose work ethic is fundamentally different to previous populations. Initial military training for officers and soldiers is as much about socialisation as it is about skill development. It is about creating and reinforcing an alignment between the individual and organisation. The social conditions under which the Options Generation has been raised may require the Army to place greater emphasis on early career socialisation to build the routines of work, work ethic, team skills and values.

Summary

The Baby-Boomer Generation forms a large cohort of the national population. This generation has had, and will continue to have, a profound influence on the fabric of Australian society. There is some concern that as this group ages the following cohort will not be large enough to generate the resources required to support a large aged population.¹⁶ The Baby-Boomer Generation and those that follow are more likely than previous generations to have completed higher education. A larger proportion of the population than ever before has an expectation of professional employment. A combination of social change and government policy has resulted in an uneven distribution of work across the population. While some people are working longer hours others, particularly younger Australians, are underemployed. The definition and experience of family has changed markedly, as has the institution of "marriage".

This is the environment in which subsequent generations are being socialised. If the Army is to understand and make best use of Australia's upcoming generation, then it is important to understand that their perceptions of the world will be very different from their Baby-Boomer parents.

The next section of this article examines the attitudinal and behavioural drivers of the Options Generation. This generation will be the senior officers and soldiers of the ECF.

Part Two – Characteristics of the "Options Generation"

Studies of the Options Generation reveal a recurring theme of individuality. Individual strengths and weaknesses may be the only thing over which they perceive they have control. These people are being raised in an environment where a rapid rate of discontinuous

change is a given: today's technology will be superseded, there will always be something over the horizon to make today's approach redundant.

It has been argued that understanding a culture's concept of time is essential to gaining an understanding of how a culture assigns meaning to events and how individuals assess whether time is being valued.¹⁷ The Options Generation thinks about the future as a short period of time, typically two to three years, and there is evidence that it is becoming shorter.¹⁸ While it could be argued that having a short-term view has always been typical of young people, there are indicators that the Options Generation does not have faith in the long-term plans once held by their parents. Long-term planning assumes a level of predicability – selling present time for future gain. The established formulas for success such as marriage, family and progression in the organisation have lost credibility.

The Options Generation and Organisational Commitment

There has been a change in the psychological contract, in particular, in relation to work and the desire and ambition to compete and succeed.¹⁹ It is the result of a perception that most organisations are simply incapable of delivering promises with any certainty, even when it is their intention to do so.

A recent study of young lawyers in Western Australia found that the Options Generation was no longer prepared to make the traditional personal sacrifices for the sake of a career.²⁰ Quality of life issues emerged strongly in the study to the extent that young lawyers were more likely to choose lifestyle over work. The employers' ability to convince young people to sign-on for short-term pain to receive long-term gain has been severely undermined. Human resource strategies based on long-term traditional motivational assumptions based on "short-term pain for long-term gain" are likely to be flawed.

Clearly, Army's ability to attract and retain the Options Generation will require changes to recruiting strategy, but more importantly it will require changes to how careers are structured and managed and how people are rewarded within the organisation. Army's existing motivational strategy and reward systems are based on the long-term incentive of promotion. The Options Generation is likely to view this approach as inflexible and entirely inconsistent with their world-view.

The Options Generation is more likely to make career decisions based on questions such as: How am I

feeling about the job right now? What is going to happen in the next year or two? Their view of the world is more situational and immediate than that of their parents. Commitment will be offered in situational specific terms as the individual continually assesses the organisation's ability to meet its promises and obligations.²¹ Ultimately, Army will not be able to attract or retain the coming generation if it cannot deliver on the promises made during recruiting. However, the converse may also be true. If the Army is able to meet the expectations of the Options Generation then it may well build ongoing commitment.

Having the responsibilities of having a family, mortgage and a job will still keep young officers and soldier tied to the organisation. However, increasingly employers are perceived to have a diminished capacity to deliver long-term stability, financial security, and consistent promotion. Traditionally, these were powerful levers used by the organisation to attract and retain staff. The concern is that the withdrawal of commitment associated with the breakdown in the psychological contract is such that the organisation will pay in terms of reduced innovation and creativity because it will fail to motivate and engage the imagination and organisational commitment of the Options Generation. While not measurable in Defence Reform Program (DRP) or competency terms, this will prove to be the most significant cost into the future.

The Options Generation and the Use of Time

A shortened time horizon means a sharper focus on the present. It has been argued that the "clocks" of the Options Generation are set to "anytime".²² The traditional work model of "time" is very much from the organisation's perspective. That is, work is a set of recurring events that include time-anchored routines that repeat themselves on a daily basis. To the Options Generation "anytime" means doing what you need to do when you want to do it. The Options Generation has grown up with high levels of constant exposure to all forms of communications technology and media. These are the first children of the truly high-tech world. Technology has shown them that work does not need to be geographically tied. Their number one complaint about the Baby-Boomer Generation is that they waste time on needless politics and create situations in which doing the real work takes far longer than necessary.²³

An equally important perception of time is speed, where "slow" and "frustration" are interchangeable terms.²⁴ This differs from the concept of wasting time

because even in situations where time is effectively used, if the pace is slow, the Options Generation quickly becomes bored. The Options Generation's need for speed is reflected in their media saturated world. During the 1960s a one-minute television commercial in the United States consisted on average of 8 to 12 images. A recent soft drink commercial aimed at young people presented 22 visual images in a 30-second period.²⁵ There is a positive side to this issue: exposure to these quickly changing images may also increase their ability to handle rapidly developing, complex issues. For example, fast moving video and computer games that present high volumes of information demand that the player develops complex, non-linear strategies in real-time. The player is being trained to cope with the change, develop high levels of situational awareness, filter information for critical data, and use information processing time efficiently. These are the skills required of future battlefield commanders.

The challenge for Army is to create an environment where the Options Generation is actively engaged in work that has clear purpose. The Options Generation uses time very efficiently. The notion of constantly preparing for an activity without ever actually exercising or testing those skills is inconsistent with their world-view, for example the high levels of preparedness maintained by the RDF. The message from the Options Generation is that they value a "lifestyle" and they are willing to make time to create it. Complete sacrifice to the needs of the organisation is no longer a viable concept. They recognise that they must divide their time and commitment between work, family, and themselves. They appear to understand that each element of their life will at times require a temporary commitment above the others, however they are unlikely to give sustained commitment to one element alone. Consequently, they expect to be able to build flexibility into their life.

To attract, retain and maintain the commitment of this generation the Army must become externally relevant and internally more flexible in how it manages and rewards its people. The days where officers and soldiers sacrifice their family life for promises of promotion and the good of the Service are gone.²⁶ If Army fails to adapt to the emerging world-view of its people, the cost will be high-turnover and lower productivity and creativity. However, if it can respond, it may benefit through its ability to provide a sense of "family stability" for its people.

The Options Generation's Search for a Framework

Political analysis of the Options Generation suggests that their world-view has been shaped by a combination of the after-effects of the 1960s social revolution and the 1980s economic revolution. This generation has benefited from many of the social battles fought by their parents in the 1960s to the extent where equality between the sexes is taken for granted and women work with equal rights to men.²⁷ However, they may well be the first generation whose lifetime earnings will be less than their parents. Rationalisation of the economy and the workforce has left persistently high levels of youth unemployment, increasing underemployment for those who are employed, while their parents work harder and longer than ever before. The permanence of work, organisation, family and society appears to be fraying resulting in reduced levels of social trust and heightened sense of individualism and materialism.²⁸ This in turn is said to isolate people from one another, weakening the communal bonds that give meaning and force to notions of institutional, community and national identity.²⁹ What has emerged is an ideology of pragmatism.

The traditional social frameworks of family, work, community and nation have been called into question, as they are not stable enough to provide meaning to the Options Generation. Consequently, there is some evidence to suggest that the Options Generation is searching for a meaningful framework. In the United States young people are returning to religion (many of whom grew up without formal religion) actively seeking a moral framework. Australian research supports the view that the Options Generation is seeking a framework.³⁰ However, an important observation is that they are likely to adopt a framework with zeal and push it to its boundaries, for example, religious fundamentalism. If it fails to deliver appropriate meaning then it is discarded and replaced with another framework. It must be both pragmatic and relevant.

Concurrently, the Options Generation have family-orientated aspirations and support the idea of building a strong and close-knit family as a priority, however it will be done on their terms. Family is couched in terms of established financial and emotional security. That is, these are important preconditions of marriage. They are not keen to make the "mistakes" of their parents who are seen to have immersed themselves in the responsibilities and restrictions of family life too early.³¹

An alternate (but related) view that captures the formative experiences of this generation is that the need for social independence has been reinforced at an early age. Raised in an environment of constant exposure to information, social instability and institutional breakdown, the need for social independence and reliance on their own judgement has been constantly reinforced. Consequently, they are continually looking for feedback from the environment so that they can effectively adjust and adapt to change.

The Options Generation search for a framework presents Army with an opportunity. The Army has a strong sense of tradition and reinforces a moral code where the boundaries are distinct. Moreover, the Army actively supports and sustains the team and upholds many of the social mores that the wider community values. Unfortunately, this side of Service life is not readily apparent to the casual observer. In fact, recent publicity regarding sexual harassment, faults in safety and poor leadership has sent the opposite message to the community: essentially, the Army and Defence, in general, are incompetent to the point of being dangerous.

The Army has the raw material that might satisfy the needs of the Options Generation, but there must be significant internal cultural and process reform before a values-image that is consistent with who we are can be projected to the community. The central caution from Options Generation to the Army of the future is, *don't promise what you can't deliver*.

Conclusion

The Army's human resource strategy must be an integral part of its capability development strategy. To effectively shape the ECF and AAN it is necessary to understand the cognitive, behavioural and social dynamics of the relationship between the individual and the organisation and how they combine to deliver combat capability.

The social trends in Australian society examined in this article shows that the formative experiences of the officers and soldiers who will populate the ECF and AAN are markedly different to those of the current senior leaders. However, it is the latter who are building and shaping the force of the future. As the Army derives its combat capability from its people, it is critical that those shaping the ECF and AAN recognise that the strengths and weaknesses of future generations are likely to be very different to their own.

The article also shows that the current social environment equips the Options Generation with some skills that are ready-made for warfighting on the future battlefield. For example, their world-view acknowledges the need to constantly adapt to change, and their leisure time is spent developing skills in advanced information processing and non-linear tactical and strategic thinking. They are task focused, use time efficiently and are independent. Equally, their world-view will present the Army with a number of challenges. For example, they are better educated and expect to be continuously challenged in their work. They distrust institutional promises and accordingly commitment is offered in situational specific terms and is constantly evaluated. A psychological contract based on "short-term pain for long-term gain" is no longer viable.

The combination of an increasingly competitive market for quality young people and the high-knowledge demands of the future battlefield indicate that the Army's human resource priority will be to *retain* quality people. The Army Reserve is a critical resource in achieving this objective but it must be relevant, professional and flexible enough to capitalise on the emerging workforce trends.

The social instability in work, organisation, family and society presents the Army with a number of challenges and opportunities. To make the most of this environment the Army must be professional, externally relevant and internally flexible. It is not enough to make these promises in flashy recruiting campaigns. If the Army fails to fulfil the expectations it creates, it will not retain the commitment of the Options Generation. Without the commitment of its people the Army loses the innovation, creativity and imagination that are willingly given by a motivated, satisfied and committed soldier. This loss is the essence of winning on the battlefield.

NOTES

1. Those Australians born between 1947 and 1960. The time periods allocated to generations are "elastic". This is particularly true when referring to more recent generations. The time frames should not be treated as absolutes.
2. Australian sociologist Hugh Mackay argues that for this generation, "everything is changing, everything is relative" therefore they have learned to keep the options open. He refers to them as the Options Generation. In this article the term "Options Generation" refers to those Australians born between 1960 and 1980. This term encompasses those referred to in the popular press as Generation X. Mackay, H. *Generations: Baby boomers and their parents*. Sydney: Macmillan, 1997.
3. The Group of 10. *The Macroeconomic and financial implications of ageing populations*, April 1998.
4. Australian Bureau of Statistics. *Population projections 1997 to 2051*. Canberra ABS, 1998. All projections referred to in this article are based on Australian Bureau of Statistics Series II projections.
5. Australian Bureau of Statistics, 1998, *ibid*.
6. Australian Bureau of Statistics. *Australian demographic trends*. Canberra: ABS, 1997.
7. Australian Bureau of Statistics. *Australian Social Trends 1999*. Education – National Summary Table, 1999, pp.76-79.
8. New Focus Research 1998/99. Research conducted on behalf of Defence Force Recruiting.
9. Australian Bureau of Statistics 1999, *ibid*.
10. Charles Handy. *The empty raincoat: Making sense of the future*. London: Random House, 1994.
11. There has also been an increase in the proportion of this group who would like to work more hours.
12. Defence Force Recruiting has consistently been under target for soldier and officer positions, regular and reserve.
13. DFR has begun to address this issue through a series of studies conducted by New Focus Research.
14. P.L. Ackerman, Management in the 21st century: Workforce demographics and implications for high and low-knowledge work. Industrial and Organisational Psychology Conference, Brisbane, Queensland, 24-25 June, 1999.
15. Major Anne Goyne of the Psychology Research Group is conducting this research. These are being prepared for publication in the *Australian Defence Force Journal*.
16. It should be noted that the Baby Boomer generation has created considerable wealth and is more likely than previous generations to be able to support themselves.
17. E.T. Hall, *Beyond Culture*. New York: Doubleday, 1976.
18. D. Cannon, The Postmodern Work Ethic. In G. Mulgan (Ed), *Life after politics: New thinking for the twenty-first century*, London: Fortana Press, 1997, pp.41-48.
19. For a more complete explanation of the "psychological contract" see D.J. Schmidtchen, "Rethinking the psychological contract between Army and its people". *Australian Defence Force Journal*, Jul/Aug, 1999, pp.5-8.
20. Survey commissioned by the West Australian Law Society and Women Lawyers' WA conducted by Nexus Strategic Solutions. Reported in *The West Australian*, Wednesday, 21 July 1999. Commissioned to examine, "why some of the State's best young minds were leaving the most glamorous profession".
21. J.M. Hiltrop, "The changing psychological contract: The HR challenge of the 1990s", *European Management Journal*, 13(3), 1995, pp.286-294.
22. S.M. David, *Future Perfect*. New York: Addison-Wesley, 1987.
23. D. Cannon, *op.cit*.
24. D. Cannon, *ibid*
25. D. Cannon, *ibid*
26. N. Jans, Et J. Frazer-Jans, *Defying gravity: The dynamics of partner support in the Australian Defence Force family*. Sigma Consultancy, July, 1999.
27. T. Halsted, "A politics for Generation X". *The Atlantic Monthly*, Volume 284 (2), 1999, pp.33-42.
28. H. Mackay, *op.cit*.
29. Alexis de Tocqueville cited T. Halsted, 1999, *op.cit*.
30. Mackay H. *op.cit*.
31. Mackay H. *ibid*.

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A Critical Assessment of the Relevance of a Concept of Cooperative Security

By Lieutenant Commander W. M. Heron, RAN

By pooling resources it is assumed that the security of each state will be enhanced at a lower cost than if each state attempted to provide its own security on a unilateral basis¹. Thucydides

The end of the Cold War has resulted in a significant change to the geostrategic world order. The demise of the Soviet Union has caused an end to the delicate bipolar balance between the Soviet Union and the United States which has maintained world peace based on a policy of strategic nuclear deterrence since the end of World War II. The victorious superpower, the United States, is maintaining a unipolar moment while new sovereign states emerge as part of a new multilateral world order.² This type of multipolarity in an increasingly economically interdependent world brings with it new security challenges. The old bipolar security culture has little relevance in a dynamically changing world order. Therefore, such a political and economic change requires a corresponding change in security culture. The alignment of minor powers under a balance of power concept is no longer suitable simply because the security umbrella provided by the superpowers no longer exists. States are being forced to take more responsibility for addressing their own security concerns. Consequently many sovereign states are pooling resources and gravitating towards cooperative security arrangements to achieve their security aims.

Cooperative security is defined as "a multidimensional, gradualist security approach promoting reassurance over deterrence, emphasising the value of creating habits of dialogue between potential antagonists while providing for peacekeeping and enforcement".³ This collaborative perspective on security has achieved common ground with both the realist and liberal perspectives on International Relations (IR), mainly due to the evolutionary nature of the security debate post-World War I.

The international system is in a temporary phase of transition, moving from the old bipolar Cold War structure to one of multipolarity.^{4,5} During the Cold War fewer conflict dyads existed in the international system.⁶ Foreign policies in smaller states were aligned with those of the superpowers to varying degrees. A Cold War paradigm of Cold War politics affected every state during that particular period. Even those states which

considered themselves non-aligned with the superpowers were caught up in the same paradigm, subconsciously aligning themselves with one pole or the other by accepting either communist or liberal democratic aid or "development" packages.

This umbrella of security now ceases to exist with the emerging multipolarity. The mantle of protection present under bipolarity is being dismantled and states are now breaking out of the Cold War paradigm. The United States has given up its bases in the Philippines and is focusing on domestic agendas. The Soviet Union has ceased to exist and has been replaced with many new actors, each taking a place in the international system. New dyads of cooperation and conflict are emerging as a result of increasing multipolarity. Historically, change has caused uncertainty in world politics. Deterrence is now more difficult because miscalculations of power are greater and are more likely to occur in the emerging world order.⁷ The article argues, therefore, that cooperative security offers the best arrangement to overcome uncertainty in an emerging multipolar world. Moreover, cooperative security offers the most effective mechanism to extinguish the dyads of possible tension and provide for future security through greater transparency and emerging regionalism.

The article will first define the notion of cooperative security within the current security debate. It will examine the evolution of models of security in terms of time, place and paradigm and propose cooperative security as the most logical next step. The article will then locate cooperative security within the contemporary security debate and offer the concept of cooperative security as the most suitable security mechanism for a theoretical viewpoint. Finally, the article will offer cooperative security as a solution to regional security requirements post-Cold War.

Cooperative Security Within the Security Debate

The contemporary security debate has largely resembled a tug of war between the liberal and realist perspectives. Prior to World War I a realist agenda drove

a multipolar, balance of power structure in Europe. Offence and power politics drove colonialist policies to maximise economic profit through rapid colonisation. Large offensive military forces were required by the great European powers to fulfill this aim. These large forces, combined with Realist strategies to further the national interest of the countries involved, ultimately led to the outbreak of World War I.⁸

Realist policies were largely blamed for World War I. Balances of Power were out of vogue and were replaced with liberal ideas. These ideas came from famous liberal idealists like former US President, Woodrow Wilson.⁹ Liberal policies gained sympathy because of community will to avoid future war. It was hoped that Liberalism would provide the answers that Realism had failed to do. Consequently disarmament agendas gained wide acceptance. Broader, more idealistic liberal policies were pursued over the power political agendas of realism.

Perhaps the most significant "liberal" event of the post-WWI era was the formation of the League of Nations. Its creation was an attempt to apply liberal principles to a mechanism which would maintain international order. However, the League's collective security system was undermined from its outset because it was incapable of guaranteeing action by member states.¹⁰ Realists criticise the League on the basis that human behaviour did not naturally follow idealistic thought,¹¹ causing the demise of the League and the catastrophic failure of collective security.

Realists are also critical of the vulnerability of human emotions to events and their significance to political and security choices. The principle of time and place can be applied generally to the evolution of security. E.H. Carr illustrates the point. He describes collective security as being "... not principles at all, but the unconscious reflection of national policy based on a particular interpretation of national interest at a particular time".¹² The illustration here is how important environmental factors were in terms of our security choices.

An analysis of security choices since World War I shows the importance of the environmental factors of "time and place". These factors could be interpreted as a set of reactive norms prevailing over events. Historical analysis suggests that early Liberalism was a reaction to the magnitude of World War I, while the Realist perspective post-World War II was again a direct response to the experience of war. The shift in perspective from Realism to Liberalism and then back to Realism constituted a search for a security answer

driven by the security environment. Using a similar argument the establishment of the contemporary United Nations was a result of the failure of the earlier League of Nations.¹³ The common denominator in all these events is time and place, or the security environment, which was directly influencing outcomes and causing a shift in paradigm. Realists would describe the momentum as a shift based on "the real" while Liberals would argue that it was a shift based on idealistic enlightenment.

Each paradigm came with its particular brand of security. The collective model of security adopted during the Wilsonian Liberal era in the lead-up to the League of Nations advocated the notion of "all against one".¹⁴ It was a good theoretical principle, but failed as a security principle. This was because there was no guarantee of action by member states. The next shift in paradigm, a Liberal-Realist shift post-World War I caused a parallel shift in security thinking. The ultimate failure of collective security was swept aside for a common security model.¹⁵ Post-World War II, common security promoted an interdependent view of security based on the need to avoid nuclear war and move towards disarmament. Common security developed in Europe and was criticised for its similarities with collective security,¹⁷ and especially for the fact that the "military aspect of common security ultimately lean towards a system of collective security rather than... confrontational alliances or bilateral arrangements."¹⁸

While the nature of the security debate has been characterised by the prevailing paradigm, it has concurrently become more liberal in focus and more recently has gravitated towards interdependent answers to security problems. NATO is perhaps the best example of the phenomena. The ideas of disarmament, cooperation and even adversarial engagement have emerged as part of the contemporary security debate.

The concept of cooperative security takes these factors into account. It is a more flexible concept than its predecessors because it is based on a norm of inclusiveness, a principle which draws on both economic and military interdependence for answers to security problems.¹⁹ Transparency and confidence-building activities can be developed within cooperative security activities. It is a mutually inclusive practical approach engendering mutual trust through activities such as the production of defence white papers, regular joint military exercises and multiple contact activities at the unit level.

However, cooperative security implies a greater level of cooperation between states. In an emerging multipolar world Cooperative security offers tangible security solutions to security problems without the need for nuclear deterrence. As a concept it is not a theoretical conglomeration of Liberal security ideas or a reaction to the prevailing security environment as was the case with previous security models. It is the result of a century of corporate security problems incorporating lessons learned from the international security experience over the last century. As a security model it offers the best available solution to solving security problems in an emerging multipolar world.

With the demise of the Soviet Union the world order is temporarily being influenced by a "unipolar moment".²⁰ *Unipolarity* is defined as "one in which a single power is geopolitically preponderant because its capabilities are formidable enough to preclude the formation of an overwhelming balancing coalition against it".²¹ As Layne predicts, multipolarity will eventually prevail and bring with it an increasing number of conflict dyads requiring a concerted effort to understand and manage these sources of potential conflict. Cooperative security will allow effective management of these future sources of tension simply because new levels of mutual understanding and transparency may preclude the development of any form of security dilemma.²²

An example of cooperative adversarial engagement was the "Agreement between the Government of Australia and the Government of the Republic of Indonesia on Maintaining Security" which formally recognised common interest in the "peace and stability of the region".²³ No two countries are more dissimilar than these two, yet a diverse cooperative relationship exists. This relationship was the source of the continuing dialogue between the two countries during the economic crisis being experienced by many countries of the South East Asian region, including Indonesia.²⁴ Realists must take note of the evidence before them – international anarchy is in decline while transnational cooperation and interdependence is becoming "the real".²⁵

Locating Cooperative Security Within the Theoretical Debate

Realism is defined as "a perspective on international relations that focuses on the state as the unitary and

rational actor and on the actions and interactions of states".²⁶ Realism claims that the international system is a group of sovereign states operating in an anarchic state. This premise of anarchy is becoming increasingly irrelevant in the changing world order. This is for two reasons. Firstly, the anarchic Cold War balance of power had been replaced by a liberal democratic agenda which advocated capitalism and disarmament over state control and arms races. Secondly, the emerging world order is becoming increasingly interdependent at the transnational, the systemic and the unit levels. Because of its inability to recognise the linkages between domestic politics and foreign policy, realism offers little to the study of transnational interactions and offers no answers to questions posed by the emerging economic interdependence of sovereign states.²⁷

Realism emphasises power politics and the need for strong militaries to support domestic political agendas in the international sphere. It promotes a security agenda of offence over defence, and deterrence over cooperation, causing a security dilemma for neighbouring states. While Neorealists like Kenneth Waltz focus on the structure of the international system and thus have moved away from the classical discipline prompted by Machiavelli and Morgenthau,^{28,29} Neorealism still advocates the maintenance of a balance of power which generates only short-term of "relative gain" solutions to security problems. Realism, because it promotes the maintenance of a balance of power, is the paradigm that is most often associated with causing a state of war.

Conversely, *Liberalism* is defined as "principles and institutions, recognisable by individual freedom, political participation, private property and equality of opportunity."³⁰ Liberals believe in institutions.³¹ From the Liberal perspective states need to see benefit from institutions, then they will cooperate to perpetuate this development. Liberal institutions provide the focal point for further cooperation in both a military and an economic sense. Liberalism embraces multilateralism. Two good examples of this are the Asia-Pacific Economic Forum (APEC), and the ASEAN Regional Forum (ARF). The forums coexist in the same region, perpetuating economic growth and providing for military cooperation through consensus. Liberalism therefore offers multilateral forums like these as vehicles for cooperative activities in the future. Realism does not.

In the security realm Liberals mitigate problems of anarchy by embracing transnational ties based on

economic interdependence. In stark contrast to the Realists, Liberals have the ability to offer military and non-military solutions to their security problems. This is extremely relevant to the current security debate where economic linkages are fundamentals of the post-Cold War security debate. Liberal institutions like the International Monetary Fund (IMF) are providing economic solutions to security problems in the wake of the Asian economic crisis. Liberals believe in trust, in absolute gains and advocate long-term relationships rather than the short-term, relative gain encounters preferred by Realists.

In security terms Liberals believe that if a security system is built nations will align themselves to it. While historically this premise was flawed with the failure of the League of Nations, the concept itself was improved upon and resurrected with the advent of the modern-day United Nations system. While far from perfect, today's United Nations is a much stronger institution than its predecessor.³²

Wiseman has established that commonality exists between the major perspectives of International Relations. He cites Martin Wight's research and concludes that while common ground existed between Realists, Rationalists and Revolutionists, "the truth cannot be found in any single IR perspective but in the debate between them".³³ E.H. Carr, a Realist, holds a similar view. In identifying the limitations of realism he concludes that "any sound political thought must be based on elements of both utopia and reality".³⁴ A similar conclusion can be drawn in a security context. Cooperative security must therefore be suitable to the Realist perspective in that it upholds the sovereign state as the major actor and achieves cooperation in an anarchic state. Cooperative security also upholds Liberalist principles by promoting Western institutionalism base on economic interdependence.

The Necessity for Cooperative Security Mechanisms Post-Cold War

There is an inherent need for cooperative security mechanisms post-Cold War. The world is emerging from a bipolar era where security was synonymous with a strategic superpower nuclear balance and Mutually Assured Destruction (MAD).³⁵ US resolve is now more closely aligned with its direct national interest over strategic Cold War agendas. In recent times there has been a lack of political resolve in the US to intervene in human security crises on humanitarian grounds in Somalia and Rwanda resulting in major genocide.³⁶

Under cooperative security, a mandate for humanitarian intervention by neighbouring states may have assisted in averting the genocide in the absence of US (and UN) interest in early intervention.

Cooperative security has a role to play in emerging world order. Several nations have proposed cooperative security mechanisms to embrace an emerging regionalism as suggested by the UN. These include the Canadian Conference of Security Cooperation in the Asia Pacific (CSCAP) initiative, and the Conference of Security Cooperation in Asia (CSCA) suggested by Australia.³⁷ Ironically, the CSCA was not supported by the United States, dubbed by the US as "a solution in search of a problem".³⁸ A Realist would suggest that the US, the victorious superpower attempting to maintain unipolarity, would risk losing its influence had either of these cooperative security proposals been adopted. The hazards for the United States are best explained by Layne who states "unipolar systems contain the seeds of their own demise because the hegemon's unbalanced power created an environment conducive to the emergence of new great powers".³⁹ Consequently, cooperative security offers states a "balancing" opportunity, to counter US hegemony therefore it is logical that the US would veto cooperative security proposals.

Perhaps to the US's dismay, regionalism is prevailing post-Cold War. *Regionalism* is defined as cooperation among governments or non-government organisation in three or more geographically proximate and interdependent countries for the pursuit of mutual gain in one or more issue areas.⁴⁰ The world is witnessing an emerging economic interdependence with the establishment of new trading blocks like the EU. Economic Liberalism like the agreements between the European nations is becoming the taproot of stability in the creation of a liberal economic order. This is facilitating greater integration between sovereign states in socio-economic terms. Moreover it is facilitating a change in the attitude of actors.

Globalisation, moreover, is facilitating a breaking down of cultural barriers and promoting transnational economic practices. The communications and transport revolutions are leading to increased interdependence and encouraging similarity in economic and military practice. The anarchic nature of sovereign states in billiard ball theory terms is being replaced by the egg carton theory – states lining up together in a less ordered anarchic system, aligned relative to their cooperative regional interests.⁴¹

Cooperative security is therefore the best security method for protecting our cooperative economic interests and deepening relations. It is acceptable as a security mechanism to a broad cross section of perspectives because it:

"embraces the ideas both of common security – that nations' best protective option is to seek to achieve security with others, not against them, and collective security – the notion of members of a group renouncing force among themselves and agreeing to come to the aid of any member attacked by a defector".⁴²

Conclusion

In conclusion, Cooperative security is the result of the evolution of a security concept. As an evolved concept it is already adapted to the prevailing post-Cold War environment. It can already offer a mechanism for extinguishing the conflict dyads arising as a consequence of change. Cooperative security had been sanctioned by the United Nations in the hope that it will facilitate the ability for sovereign states to take more security responsibility through an emerging regionalism. It is a liberal concept which interconnects with emerging regionalism. It is a liberal concept which interconnects with emerging transnationalism, globalisation and economic interdependence. Additionally, it offers a means of reacting quickly to regional humanitarian problems using regional assets.

Cooperative security is thus a mechanism capable of addressing the new security challenges which are emerging post-Cold War. Moreover, it offers a mechanism to extinguish many of the dyads of conflict existing in a multipolar world through transparency and mutual understanding and adversarial engagement. The enhanced transparency between sovereign states offered through a cooperative security system offers an opportunity to reverse the security dilemma resulting in a decreased risk of war. The gains associated with cooperative security can be measured economically; diplomatic prevention is much less expensive than a military cure. A culture of liberal cooperation is much more cost effective than the expense of a realist culture of conflict.

NOTES

1. M. Kauppi, and P. Viotti, *The Global Philosophers – World Politics and Western Thought*. New York: MacMillan, 1992, p.57. While Thucydides is considered a realist he does mention non-state actors in his work, and argues that political leaders must imagine events from the perspective of other statesmen. This is at odds with the classic realist perspective.
2. These new states include both the newly industrialising nations (NEU) and the states of the former USSR.
3. G. Evans, *Cooperating for peace – The Global Agenda for the 1990s and Beyond*. Sydney: Allen and Unwin, 1989, p.183.

4. P. Kauppi, and M. Viotti, *International Relations Theory*. McMillan: New York, 1987, p.574. Bipolarity is defined as the coalition whereby states align themselves between two distinct poles of power, each pole dominated by a superpower, for example the arrangement which existed between the Soviet Union and the United States during the Cold War.
5. Kauppi and Viotti op.cit. p.588. *Multipolarity* is a condition where there are more than two distinct poles, where the potential for conflict is greater because of a larger number of conflict dyads.
6. A dyad in this sense is referring to potential sources of conflict between two states.
7. J. Mearcheimer, "Back to the Future, Instability in Europe After the Cold War," *International Security*, vol. 15, no. 1, Summer, 1990, p.13. Mearsheimer states that deterrence is easier in a bipolar system. It logically follows that deterrence is more difficult in emerging multipolarity – the argument taken here.
8. G. Wiseman, "Common Security and Non-provocative Defence: Alternative Approaches to the Security Dilemma", *Peace Research Monograph No. 7*, ANU, 1989, p.19. Wiseman established five interrelated features as the conditions leading up to WWI. These are a balance of power in Europe, militarism, imperialism, the absence of European war and nationalism.
9. M. Banks, "The Evolution of International Relations Theory." In M. Banks (ed), *Conflict in World Society*, 1984, p.6.
10. A. Kupchan, and C. Kupchan, "Concerts, Collective Security and the Future of Europe," 1993, p.114. Collective security purports to provide security for all states by the action of those states operating as a united front.
11. E.H. Carr, "The Twenty Years Crisis," London: MacMillan, 1939, p.34.
12. *ibid.*, p.87.
13. E.H. Carr, op.cit. p.34. The League of Nations was based on a premise that public opinion was bound to prevail and that public opinion was the voice of reason. The League was ineffective in being able to meet force with force. It had a problem of defining aggression. The failure of the League to act early resulted in harsher wars and more difficult outcomes because the League had to wait for an actual act to be committed before it was able to act. In fact the League, first suggested by Woodrow Wilson, the President of the United States was not supported by that country, nor by Germany, Italy, Japan or the Soviet Union. The only great power members were in fact Britain and France, thus it was hardly effective.
14. C. Kupchan, and A. Kupchan, (1991) "Concerts, Collective Security, and the Future of Europe." *International Security* 16 (1): ??0
15. G. Wiseman, "Common Security and Non-provocative Defence: Alternative Approaches to the Security Dilemma", *Peace research monograph No.7*, ANU, 1989, p.39. Geoffrey Wiseman offers an account of the nature of the interwar debate and of the evolution of the common security model from a collective security base.
16. D. Dewitt, "Common, Comprehensive and Cooperative Security" *Pacific Review* vol. 7 no. 1, 1994, p.4. Common security was based on the avoidance of nuclear war by creating positive processes that lead to peace and disarmament by promoting cooperation over confrontation in resolving conflicts of interest.
17. This being the case the formal form of collective security has been adopted by the UN post-World War II using security council and the power of veto to guarantee great power consensus and thus guarantee some form of action – avoiding the problems experienced with the League of Nations concept.
18. D. Dewitt, op.cit. p.5. In the same respect that collective security was fatally flawed, common security had problems because it still required states to voluntarily

- relinquish their rights to decline from committing their own resources to a collective security action; it also meant bilateral agreements became vulnerable to collective security politics.
19. *ibid.*, p.10.
 20. The Unipolar moment from a neorealist perspective is the current state of world security where the United States as the single remaining superpower holds world security a transitionally phase, a part of the transition into a multipolar world order. Neorealists argue that new great powers will emerge which will ultimately lead to new conflict dyads arising as these new powers attempt to balance with the single remaining superpower.
 21. C. Layne, "The Unipolar Illusion – Why New Great Powers Will Rise," *International Security*, vol. 17 No. 4 (Spring), 1993, p.5.
 22. Kauppi and Viotti *op.cit.*, p.592. The security dilemma is defined as follows: State A increases spending for defensive purposes yet it is seen by other states as a deliberate act of aggression. Other states then increase their own levels of defence spending to nullify the impact of state A. Thus a continued upward spiral of defence spending begins perpetuating arms races and causing a "dilemma" of security.
 23. G. Evans, and A. Alitas, *Agreement between the Government of Australia and the Government of the Republic of Indonesia on maintaining security*. Canberra: Australian Government Printing Service, 1996, p.1.
 24. M. Vatikiotis, "Asia Crisis..." *The Asia-Pacific Magazine* No. 9/10, 1998, p.28. The article illustrates the economic interdependence within the South-East Asian region and the fact that a domino effect prevailed once the Japanese economy collapsed which affected the entire South-East Asian region.
 25. This term reflects the realist perspective of international relations that realism tells it how it is and not how it ought to be. Within Realism objects remain static, it predicts no future and reports the facts as they stand.
 26. E.H. Carr, *op.cit.*, p.91. Realists live in a permanent state of international anarchy with sovereign states randomly interacting cognisant only of their own national interests. Realism lacks finite goals, emotional appeal, the right moral judgement and ground for action. Because realism lacks finite goals it is in permanent tension with liberalist security ideas – it does not provide a good resource on which to plan future security apparatus. It does not acknowledge domestic politics as a function of foreign policy and therefore lacks depth. It therefore offers little to security architects in terms of a perspective on which to construct a meaningful interdependent security plan.
 27. Kauppi and Viotti, *op.cit.*, p.584. Interdependence is defined as the mutual vulnerability of states which are economically linked by international market forces and thus held hostage in an economic sense by each other. This makes them compelled to cooperate for mutual benefit.
 28. K. Waltz, "Realist Thought and Neorealist Theory" *Journal of International Affairs*, No. 44, Spring/Summer, 1990, pp.21-37.
 29. H. Morgenthau, "Politics Among Nations: The Struggle for Power and Peace," 1948, pp.1-15.
 30. M. Doyle, "Liberalism, and World Politics," *American Political Science Review*, Vol. 80 No. 4, 1986, p.1152.
 31. *ibid.* p.1154. Doyle gives four examples of institutions – popular government, civic liberty, private property and markets.
 32. M. Alagappa, "Regionalism and conflict management: a framework for analysis," 1995, p.359.
 33. G. Wiseman, *op.cit.*, p.82.
 34. E.H. Carr, *op.cit.*, p.93.
 35. Mutually Assured Destruction was the concept which determined that a pre-emptive first nuclear strike by either superpower would result in a corresponding strike by the other superpower which would result in the destruction of both sides. It was a lose-lose situation and the concept which maintained the delicate peace during the Cold War period.
 36. G. Hermet, "Rwanda: why Medecins Sans Frontieres made a call for arms" *Populations in danger* 1995, 1995, p.92.
 37. D. Dewitt, *op.cit.*, p.2.
 38. D. Dewitt, *op.cit.*, p.6.
 39. C. Layne, "The Unipolar Illusion: Why New Great Powers Will Rise" *International Security*, 17(4), p.7.
 40. Alagappa, M. *op.cit.*, p.361.
 41. Realism describes sovereign states as randomly interacting in international anarchy and relates this as "the billiard ball theory."
 42. G. Evans, "Cooperating for Peace – The Global Agenda for the 1990s and Beyond," 1993, p.183.

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What Are Information Operations? Why Should I Take Any Notice?

By Brian Alsop, Headquarters Air Command

"There is a war out there old friend, a world war, and its not about who's got the most bullets. It's about who controls the information – about how we see and hear, how we work, what we think. It's all about the information..."

Cosmo (Ben Kingsley) to Martin Bishop (Robert Redford) *Sneakers*, MCA Universal Pictures, 1992

"Information operations have no practical application in modern military operations. They're just about hackers attacking unprotected computer networks via the Internet anyway, and unlikely to affect the outcome of conflict on the battlefield."

This view, expressed to me recently by an ADF officer, shows little understanding of the real nature of information operations (IO) or their likely future impact. What then is IO and what does the future portend? This brief article will endeavour to answer these questions, highlighting advantages to the ADF in embracing IO as a part of its normal operations routine.

What is IO?

Firstly, IO is not just about computers – hacking, cyberwar or attacking/defending computer networks. To believe so would be a serious misunderstanding of the nature of IO and substantially limit its application. Secondly, IO is not just a passing fad – fashionable today, but gone tomorrow.

Information operations are defined as "actions taken to defend and enhance one's own information, information processes and information systems and to

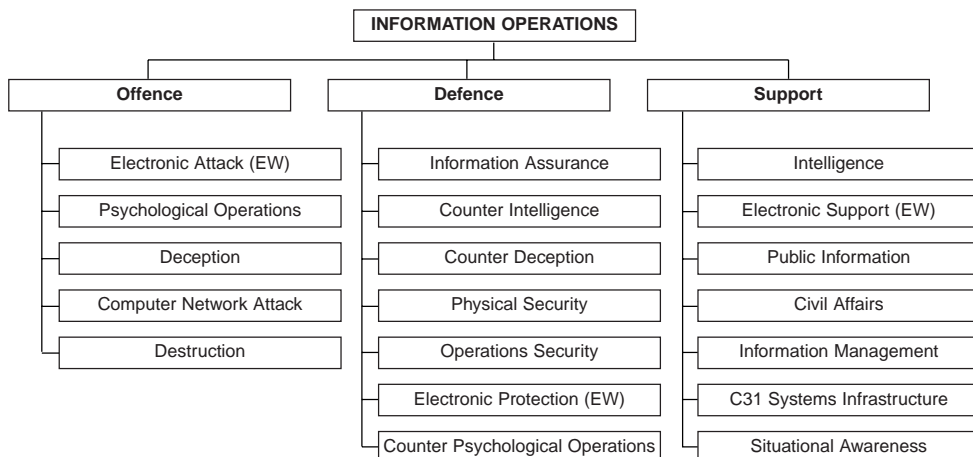
affect adversary information, information processes and information systems".¹ Note that in this context, information systems include people, as well as machines. IO is not just about computers, as is implied by some. It can be seen from this definition that IO has three principal dimensions – offensive, defensive and support activities.

IO focuses on the exploitation of opportunities and vulnerabilities inherent in decision-making processes and information dependent systems. That is, IO may be employed to impair or distort the decision-making abilities of an adversary's leadership structure, and to influence the belief or perceptions of a nation's people. Conversely, it can also be used to protect. IO targets hardware, software and the mind.

Component Disciplines and Their Capabilities

In its applied form, IO synchronises several component elements and their capabilities. These include psychological operations (PSYOPS), electronic warfare (EW), operations security (OPSEC), military

Figure 1 – IO Components



deception, physical destruction, civil affairs (CA), public affairs (PA), counter intelligence (CI) activities and other intelligence operations. Some countries are also developing computer network attack, exploitation and defence (CNA/CNE/CND) as additional elements. The mix of IO elements will depend on the level of war (strategic, operational or tactical), and the range of military operations (peacetime, conflict and war), as well as the factors of mission, enemy, terrain, time and forces available. Whatever methods are to be employed, cultural awareness of our adversaries is essential if our IO activities are to be successful. We should never assume that other people will behave, espouse the same values or think the same way we do. Timely and comprehensive intelligence product support is essential.

The Nature of IO

Since it deals with information, information processes and information systems, IO may potentially have a political, economic, societal or military focus. IO therefore needs to be conducted in a national context with central direction from the highest level, if its effectiveness is to be maximised. Although not always recognised as such, IO is conducted daily (particularly at the strategic level), as evidenced by diplomatic activity and dissemination of public information. IO is also ubiquitous throughout military missions and operations. In other words, it is omnipresent, pervading every type of military operation in some form.

Conceptually, there is nothing new about IO. Information operations have been employed for centuries in one form or another. To see this, we need look no further than the writings of Sun Tzu, Machiavelli, and similar practitioners, whose ideas were incorporated by Liddell Hart into the modern concept of manoeuvre warfare. Only the computer and high tech aspects are new. We now have automated systems to help us manage and manipulate information in order to speed up our own ability to observe, orient, decide and act while slowing down that of our adversaries to do likewise. Indeed, it could be argued that we are now re-learning how to do what we did reasonably well in 1945, but with the aid of modern tools.

When it was practiced in ancient times, IO's application was not dependent on modern computerised technology. We therefore have a choice today how we implement IO activities. We can either employ techniques such as EW and CNA that are high technology driven, or use perception shaping capabilities such as PSYOPS, deception, OPSEC and public affairs

that have been around for centuries in one form or another, but which take advantage of modern technological advances. The best choice however, is to use a combination of both, tailored for the specific circumstances.

Why use IO?

IO can benefit conventional military operations in a variety of ways.

IO can be used to "get inside" an adversary's decision (OODA) cycle and achieve decision superiority. As well as ensuring our decision processes work faster, and more effectively, this may include efforts to impair an opponent's decision cycle, whilst protecting our own. This includes forcing an adversary to make "bad decisions" as well as being too slow to make good ones.² Adversary C4I systems may also be degraded. Such an advantage, however, will only be achieved if our commanders are not saturated by too much information – a situation that will increase the "fog of war", slow down our decision cycles and rob us of decision superiority.

The widespread integration of information systems into ADF operations makes our military information functions a valuable target set, which must be protected. Effectively implemented, IO ensures protection of our own information, while affecting quality and reliability of an adversary's information.

Total force effectiveness may be enhanced by IO, since they can provide greater control of the combat environment. Through operations security (OPSEC) and perception shaping measures, IO also enables surprise to be achieved, thus further enhancing operational effectiveness. IO allows more economical use of limited force assets by enhancing the effect of their employment.

IO can be used as a force protection tool. Force protection and a more secure environment, particularly at offshore bases, could be facilitated through OPSEC, and efforts to engender support in the local community. Effective information assurance measures also contribute to force protection.

Adversary perceptions can be shaped to our advantage, particularly through the synchronised use of PA, PSYOPS and deception. Ultimately, reality – hard facts – doesn't matter. It's people's perceptions of reality that count. Perceptions drive what people do. Perceptions *are* reality!

IO can be employed to protect our personnel from adversary attempts to shape their perceptions. This is

particularly important given the present world media environment, and what has become known as the "CNN effect".³ Our people are just as susceptible as any others in this regard – only the naive would say otherwise. With an effective PA organisation a commander can also take advantage of the CNN effect.⁴

Current trends mean future ADF activities will probably include peace enforcement type operations where the use of lethal weapons is inappropriate. A greater emphasis on non-lethal means (including IO) to defeat or subdue adversaries, many of whom may be civilians, will therefore be required.

IO can be incorporated into conventional military operations (including tactical operations) through its merging into the standard targeting process. Doing so provides the commander with an additional suite of weapons (defensive as well as offensive) that may be employed at any time in the conflict continuum, even when ROE will not allow the use of lethal weapons. The targeting process in peace enforcement operations is fundamentally the same as that employed in high intensity operations. It is a logical process that decides what must be attacked, how and when it will be engaged, and then matches the best attack asset to the target.⁵

Finally, the peace that will follow a conflict may be shaped using IO, thus directly affecting what we will do and how we will do it. This may largely be initiated at the strategic level, but will intimately affect all we do at the operational and tactical levels. Such actions minimise the risk of subsequent conflict.

Specific IO disciplines contribute to the above in different ways. The essence of IO is integration and synchronisation,⁶ to leverage the maximum potential effect from these various disciplines. For example, EW can enhance the effect of PSYOPS by isolating a target audience from sources of conflicting information. Likewise credibility and effectiveness are enhanced if PA and PSYOPS messages, military actions and any deception activity all give complementary information. In this way, IO acts as a force multiplier.



Figure 2 – Vector analogy of IO effect

When Should IO be Employed?

As implied above, the short answer to this question is before, during and after conflict. Before conflict IO may be employed to condition potential adversaries and prepare the battlespace. During conflict it will assist the commander to achieve military objectives, while at the same time starting to shape the peace that will follow. After conflict, IO provides a useful suite of tools to influence the conditions and nature of peaceful society among our former adversaries. IO can make an important contribution to defusing crises. It can reduce periods of confrontation and enhance the impact of informational, diplomatic, economic, and military efforts. IO may forestall or eliminate the need to employ forces in a combat situation.⁷

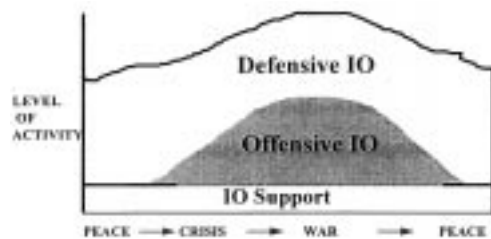


Figure 3 – IO Continuum

Where should IO be used?

IO is capable of use anywhere and at any time it is required. It is not limited geographically, but only by the communication means available. To be effective, IO should only be employed where there are identified or probable vulnerabilities. That is, the proposed target must be susceptible and accessible, with a feasible method for affecting the target available. Such exploitation of vulnerabilities is applicable irrespective of whether IO activities are offensively or defensively focused.

Potential IO target sets or areas fall into four groups.

- Human – national command authorities; commanders; troops; population groups, (the people who actually make decisions or implement them)
- Links – communications, transport etc;
- Nodes – junctions between system elements, such as processors, physical plant etc; and
- Sensors – radars, surveillance satellites etc.

Human conflict is ultimately a psychological activity, as one person, group or society exerts its will to dominate or influence another. Consequently, perception management comprises the largest and most significant

part of IO. Air Vice Marshal Peter Nicholson points out that "this may be the future kernel of knowledge warfare – changing the adversary's will, influencing his motive through controlling his perceptions of what is happening and why".⁸ Ultimately IO targets the adversary's mind – that is, what controls his conventional military capability.

Technical aspects of IO are, however, still important. Technical systems, like those used in electronic warfare, provide additional tools that may be employed to adversely affect adversary information, information processes and information systems. However, we must also be able to guarantee the accuracy of our own information and ensure it is kept in context. Information assurance (IA) programs are therefore in effect to protect data stored in our computer systems from similar treatment.

What Does the Future Portend?

A resurgence of interest in IO, particularly in the perception management aspects,⁹ is under way worldwide. Countries possessing the technical skills and the resources to do so are also likely to invest in computer defence/offence and EW capabilities.

Since the "information age" exploded on the scene, changes in the way we do business have been both fundamental and difficult to reverse. Our present ability to collect, process and exploit information is unprecedented in human history. However, it is not good enough to just use available information more efficiently, as we now have the opportunity to use information (or the ability to influence its quality, quantity and how it is perceived) as a weapon in its own right.

Advances in computer technology mean that we have substantially greater opportunities for the exploitation of available information, but at a cost. The threat to our own information, information systems, and the ability of our commanders to make timely decisions, is also increased. We, like many defence forces, have also become reliant on computer information systems for the storage of our corporate knowledge. To deal with this situation, comprehensive IA, information security and business continuity planning strategies are essential.

Likewise, perception management also presents simultaneously, both greater opportunities and greater threats. The influence of the media has become all pervasive in our society as well as in warfare – far more so than even during the Vietnam Conflict when TV brought the war into our living rooms. One implication

of this "CNN effect" is the ease with which people's perceptions can be influenced, particularly by television, which is generally accepted by people as accurate, even when it is propaganda.¹⁰ This provides great opportunity for unscrupulous governments intent on media manipulation; especially those with state controlled news organisations, and who don't subscribe to our ethical, moral and humanitarian values. Numerous other time-honoured techniques exist for manipulating the perceptions of leaders and people, both military and civilian. Such techniques are useful for disseminating truthful information about events and intentions, building support for the ADF, and protecting our people from adversary perception manipulation attempts (propaganda, etc). However, if we ignore them, those same techniques could be used against us by an adversary to diminish support for our efforts both domestically and internationally, as well as to manipulate our own perceptions to their advantage.

The only effective way to deal with the situation is through the development of a comprehensive IO capability for the ADF. We ignore it at our peril!

In the words of US Air Force Colonel Carla Bass, "We are sitting on the cusp of a new millennium and a new manner of waging war. We must become prolific in planning and executing information operations and fully appreciate our adversaries' approaches to IO, as well as our own vulnerabilities."¹¹

Conclusion

To fully exploit the potential advantages of IO, integrated planning and execution is required, to ensure synchronisation and deconfliction occur. Without this, given historical evidence, conflicting messages will probably be sent to the adversary, with a consequent reduction in operational effectiveness. Such synchronisation of alternate means to achieve desired outcomes is the nub of IO.

IO is not just the effective use of information, or more available information to support operations decision-making. IO entails the deconfliction and synchronisation of information "management and manipulation" tools in an holistic way to achieve planned operational outcomes. It involves specific targeting to affect the quality, quantity or nature of information available to an adversary commander; to degrade or modify it, or change an adversary's perception of that information, whilst simultaneously protecting our information, information processes and information systems. Decision superiority achieved

through simply having more information and making better use of it than your adversary is an example of exploiting "information in operations". On the other hand, achieving decision superiority by manipulation of the quantity, quality or nature of information available to that adversary is "information operations".

To quote Air Vice Marshal Nicholson, "Decision superiority and precision engagement are key operational concepts in future warfare."¹² Neither can be fully exploited without effective information operations.

NOTES

1. ADFP_, Information Operations Staff Planning Manual, draft, 1999.
2. AVM P.G. Nicholson, "Controlling Australia's Information Environment or Decision Superiority and War-Fighting" in Shaun Clarke (Ed.), *Testing the Limits*, APSC, 1998, p.147.
3. The term "CNN effect" highlights the ability of electronic media organisations to act as instant electronic interlocutors, able potentially to influence events and outcomes pertaining to both national policymaking and military operations. For a discussion of the CNN effect and it's impact on decision making see Frank J. Stech, "Winning CNN Wars", *Parameters*, Autumn 1994, pp.37-56.
4. See Nicholson, op.cit. particularly pp.155-158.
5. See LTCOL S. Curtis, CAPT R.A.B. Curris and MAJ M.J. Romanych, "Integrating Targeting and Information Operations in Bosnia", *Field Artillery*, Jul-Aug 1998 for a discussion of the issues surrounding IO and targeting during peace operations.
6. Synchronisation = Process + Effect. For a useful discussion on the nature of synchronisation see COL Stephen J. Kirin, "Synchronisation", *Naval War College Review*, Autumn 1996, pp.7-22.
7. ADFP_, Information Operations Staff Planning Manual, draft, 1999, pp.1-4.
8. Nicholson, op.cit., p.146. MAJGEN Robert H. Scales and LTGEN Paul K. Van Riper, put it this way in their essay "Preparing for War in the 21st Century" in MAJGEN Robert H. Scales, *Future Warfare Anthology*, US Army War College, 1999, p.31: "But in the end, war is a contest of human wills, not machines, in which means must be subordinated to ends if the results are to justify the costs."
9. These include PSYOPS, deception, OPSEC and public affairs. "Perception management" is "manipulating information that is key to perceptions". See Roger C. Molander, Andrew S. Riddle and Peter A. Wilson, *Strategic Information Warfare: A New Face of War*, RAND, Santa Monica, CA, 1996, pp.22-23. For another view see Rick Brennan and R. Evan Ellis, *Information Operations in Multilateral Peace Operations: A Case Study of Somalia*, Office of the Secretary of Defense, Washington DC, 18 April 1996, especially Section 2.
10. Stech, op.cit., pp.38-39. People tend to believe what they see on television, even if its only a short clip taken out of context, more readily than information received via any other medium.
11. COL Carla D. Bass, USAF, "Building Castles on Sand: Underestimating the Tide of Information Operations", *Airpower Journal*, Summer 1999, p.44.
12. Nicholson, op.cit., p.159.

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Measuring the Value of the Australian Services Cadet Scheme

By Dr W. H. Jones, Squadron Leader (AIRTC) Retired

Estimate the unmeasurable by measuring the measurable – Wing Commander Goody, ADFJ Sept/Oct 1981

The Australian Defence Force has recently launched a new website, devoted to the Australian Services Cadet Scheme (ASCS). The Mission Statement, not previously part of the ASCS, is:

By shared contribution and commitment from the Australian Defence Force and the community, the Australian Services Cadet Scheme will operate as a community based youth training organisation, which stimulates interest in the Australian Defence Force, while providing opportunities to develop personal and team qualities of benefit to the individual and the community.

The concept of military cadet training for Australian youth has been a part of Australian culture since the late 19th century, and mirrored similar systems in other parts of the then British Empire. The phenomenon of Army cadets arose almost simultaneously not only in the mother country of the United Kingdom, but in such far-flung outposts as Canada and Australia. The first Army cadet unit in Australia was formed in 1862 (Jones D, 1991; Mortenson, 1983) and naval cadets were established at the beginning of 20th century (Brewer, 1997). During World War II, air cadets, generally known as the Air Training Corps (ATC) came into being almost throughout the British Commonwealth. In Australia the ATC was established with "the first and short-term objective... to provide for the general education of young men between the ages of 16 and 18 years who desired eventually to join the RAAF" (Videon 1991, p.3).

Today, strong, "school" based, government-sponsored military cadets systems flourish in many countries which have British traditions – the United Kingdom itself, Australia, Canada, New Zealand, South Africa, Zimbabwe, Singapore and, until 1997 Hong Kong.

The ASCS, which brings all cadets under a single scheme, has been in existence since 1977, and consists of the Naval Reserve Cadets (NRC), the Australian Army Cadet Corps (ACC) and the Air Training Corps (AIRTC).

From the new website, the activities undertaken by the ASCS will:

- a. provide progressive, interesting and challenging training intended to encourage the development of positive personal and team characteristics;
- b. encourage the achievement of success in life with a spirit of service to Australia through commitment within the local community; and

- c. provide an understanding of the Australian Defence Force and specifically its place within the community, and its career options.

The question has often arisen about the value of such systems and the contribution they make, in national, military, educational and sociological terms.

As sponsoring bodies, Defence Departments have the most immediate need to seek a rationale for the continuing existence of cadets. After all, cadet systems cost money, which means that time and resources which could be expended on the defence effort are "diverted" to supporting cadet activities. At political level, supporting military cadets has a much wider social effect, and the accountability factor must be demonstrated to a wider audience.

In 1975 the Whitlam Government purported to disband all Commonwealth-sponsored "school" cadet activities (Mortense, 1983), but a specific election promise of the Fraser Government was to keep or restore school cadets. This promise eventuated in the establishment of the ASCS in November 1977 (APD 1976). Labor Governments from 1983 to 1996 had the opportunity to once again abolish Commonwealth-sponsored school cadets, but by that time, possibly in part because the anti-war sentiments engendered by the Vietnam Conflict had dissipated, the decision was made to continue with the ASCS, with minor modifications (Cabinet Decision No 2340 of 25 Oct 83, in Thorne, para 63).

A 1974 report on just the ACC (Millar, 1974, para 5.2) suggested that "the entire period of time spent by an individual [Australian army cadet] was the equivalent of a two-week recruit training course" and also stated that "School cadets have a small military value". A 1989 report (Thorne), again on the Army cadets, took the form of a cost-benefit analysis and of the main benefits

identified for the Army, only one was within the overall aims for the ACC – the benefits were (paras 30–40): public relations; training and ceremonial support; and recruiting. The report did comment on the extent to which training for Army cadets met Army Reserve (ARes) recruit course objectives.

A substantial study carried out by McAllister (1995) into all three elements of the ASCS concluded that “by any standards, the ASCS is an important recruiting ground for the Australian military”.

In Canada (Canadian Forces, 1995), the United Kingdom (Lewis, 1995) and Australia (Brewer, 1996), recent official evaluations, reviews or studies of cadets activities have led to general conclusions that government-sponsored, school-age, military cadet systems were valuable. However, all these studies concluded that it was difficult to express these findings in terms of actual “outcomes”. The cadet systems were popular, were heavily supported by thousands of volunteer officers, instructors, cadets and civilian supporters, but very little in the way of measurable outcomes could be identified.

The 1995 Canadian Forces evaluation found that while the Cadet Program (Navy, Army and Air cadets) was functioning well, it should be rationalised in terms of missions and objectives. The program contributed to youth development, enhanced the image of the Canadian Forces and increased the Canadian Forces presence in rural and remote areas (none of these are formal, stated aims of the Program), but current assessment practices were questionable, there was no measurement or tracking system for the output of the Program, there were few performance indicators and no measurement of the overall Program performance. The overall training objectives were not clearly stated.

The 1995 United Kingdom survey results for the Air Cadets (the ATC) supported the continuation of the ATC, but stated that “there is the need to re-address exactly what the objectives are and then to implement them – there is a need to clarify the role and aims of the ATC”. (Lewis, 1995)

The 1996 Australian Defence Force survey of the three elements of the ASCS (Brewer, 1996) noted that the ASCS was achieving its aim to varying degrees, “but there are no objectives as such – broad aims, but no objectives”.

A study (Jones W, 1999) made between 1996 and 1999 of only the Air Training Corps (AIRC) element of the ASCS, examined the specific question.

“Does the training provided within the AIRTC achieve the aims set out for it by Parliament and by the RAAF?”

The findings were substantially the same as the most recent Canadian, British and Australian studies. The AIRTC system received substantial support from the target group – Australian school-age youth – but it was difficult to answer the research question, because the aims were unclear and there were no established, measurable outcomes. There was, however, evidence that some outcomes could be identified within the AIRTC system, even if those outcomes were not specific and official aims for the AIRTC. For example, some AIRTC cadets received training which assisted them to make careers in civil aviation, while others entered Australian Defence Force Academy (ADFA) Recruiting for the Australian Defence Force is not a specific aim of the ASCS, but nevertheless a significant proportion of RAAF ADFA students had an ASCS background (RAAF 1995).

A major recommendation in the 1996–99 study was that if useful assessments were to be made of the value of the ASCS elements (the Australian Army Cadet Corps, the Naval Reserve Cadets and the Air Training Corps), in national, military, educational or social terms, then measurable outcomes needed to be established, and moreover, these should be in accordance with established aims for the ASCS. Taking into account the practical nature of ASCS training, a recommendation was also made that such training should be “competency-based”, with less emphasis than presently exists on written or “theoretical” training.

In summary, the recommendations from the 1996–1999 study were:

RAAF Knowledge of the AIRTC Should be Improved

It is the view of adult AIRTC members that RAAF members have little knowledge of the purpose and organisation of the AIRTC and, by extension, of the ASCS. This is despite the fact that the AIRTC is a direct RAAF responsibility. Another factor is the perception of adult AIRTC members that RAAF members have a low regard for the AIRTC adult volunteers. This is not to say that all RAAF members have this lack of knowledge or understanding and this low regard. Such a state of affairs (the low level of RAAF knowledge or understanding of the AIRTC) need not persist and the RAAF has ample means at its disposal to ensure that these deficiencies are rectified, principally through the RAAF’s own regular publicity media, such as the monthly *Air Force News*.



Air Marshal Ray Funnell, inspecting an AIRTC Flight in the early 1990s.

Regular reports on AIRTC activities and the constant repetition of the RAAF connection could go a significant way towards resolving this perceived problem.

Data on the AIRTC Should be Identified and Accumulated Systematically

There is a scarcity of useful data on the AIRTC for analysis. One area which might repay analysis is on the reasons why cadets leave – at present cadets serve an average of 1.6 years in a possible “career” span of seven years. Systematic collection of data by means of structured exit interviews could be valuable for planning purposes and could assist in policy development in the manner suggested by Goody (1981). Data could also be collected by the ADF for its own purposes, to gauge the value of the ASCS in terms of such matters as recruitment, separation rates and socialisation.

Aims Should be Clarified

The aims for air cadets in Australia appears to be unfocussed, a characteristic they seem to share with similar organisations in the UK and Canada. Military aims tend to be highly focussed, and there may be some advantage in reducing the air cadet aims (and the ASCS aims) to a single aim – e.g. “to provide military-type training for young Australians”. A set of objectives could

then be developed from that aim, in answer to the question, “why provide military-type training for young Australians?”, i.e. “what is the perceived benefit?”. The methods could then follow from the question “how will military-type training be provided for young Australians?”.

Outcomes for the AIRTC Programme Should be Developed

Whether the aims remain unchanged or not, there still appears to be a need for a specific set of outcomes and these can be developed over a period of time. The outcomes would need to be reviewed regularly and systematically against the aims, through a process which might include the current series of meetings of senior AIRTC training officers, as well as RAAF members (who have the prime responsibility for the AIRTC). Specific outcomes could lead to regular evaluations in quantitative and qualitative terms.

Recognised Benefits of AIRTC Training Should be Identified

In tandem with developing a set of outcomes for cadets, there is a need to focus them towards outcomes of specific and recognised value or benefit to the ADF, as

well as giving recognised benefits to cadets who have expended time and energy on cadet training. Mention has been made of recognising the training undertaken by adult AIRTC members (NCGT 1996) – the same consideration could be considered for cadets.

At present there are no specified, formal final outcomes and none of the MoCT training received by AIRTC cadets forms part of any recognised qualification. The RAAF, in common with its Canadian and UK counterparts, provides training for air cadets almost as an article of faith, a point made in the Canadian DND Program Evaluation (1995, paras 6-7, ii/v) "the scheme satisfied a number of worthwhile goals". While "Ground Training" subjects may not lead to any recognised qualification, by contrast, flying training can lead to pilot qualifications and be part of recognised (vocational) career training for cadets.

Leadership Development Should be Specifically Targeted for all Cadets

An aim mentioned consistently for the AIRTC is "leadership", but, for the majority of cadets, this does not appear to be well provided for in AIRTC training. Part of the problem is constraints imposed by the MoM, while other constraints are those imposed by the somewhat rigid requirements of promotion courses which pay only lip service to CBT principles. The problems are formalistic in nature and could be ameliorated to some extent by aligning the existing programmes with CBT principles, in accordance with AIRTC aims and with RAAF principles of training (MoM, 1992, 3rd ed, chapter 17). A partial solution might be to provide focussed leadership training for all cadets who have completed the Basic Training syllabus, and to include recognised elements of such training in Flight-based activities and at GSTs. There seems no compelling reason why initial leadership training should be confined to the few who are selected to attend centrally-based promotion courses.

Competency Based Training (CBT) Should be Developed for all Cadets

The question of CBT for cadets (as well as officers and instructors) could be considered as an overall

principle of ASCS/AIRTC cadet training, in place of the current system, which does not appear to meet the expressed RAAF view that AIRTC cadet training is "practically based". A start has been made in this direction by means of an expressed policy (NCGT 1996) but this now needs to be put into practice.

Conclusion

The new Mission Statement for the ASCS and the direction of cadet training, all lay particular emphasis on aspects of personal development, within a community framework. Measurable outcomes for these characteristics would be useful for future evaluations of the Scheme.

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Dr Jones was an AIRTC officer from 1982 to 1997 in New South Wales. He had previous military service as a territorial officer in the Rhodesian Army and as a reserve officer in the Rhodesian and Zimbabwean Air Forces. He completed a doctoral dissertation in 1999, entitled A Study of the AIRTC Element of the ASCS. Congruence between official aims and actual practice. One of the examiners for the doctoral thesis was Air Marshal (Rtd) R G Funnell, former CAF and recently retired as Principal of the Australian College of Defence and Strategic Studies.

The "Maritimeness" of Australia – But How Maritime is Australia?

By Lieutenant Commander P.J. Leary, RAN

In December 1998 the Australian Government released Australia's Oceans Policy¹ which provides the policy framework for the integrated management of Australia's maritime territories. The policy was in response to calls for better management of Australia's maritime affairs, especially in view of the additional rights and responsibilities bestowed by the 1982 Law of the Sea Convention (LOSC). As one of the first countries in the world to produce a comprehensive Oceans Policy it is timely to question the extent to which maritime affairs have influenced Australia, and how Australians view their maritime responsibilities. These questions are fundamental in any assessment of how well we can expect to manage our marine environment in a responsible, sustainable fashion.

In his 1986 book, *Maritime Strategy for Medium Powers*, Rear Admiral Hill discusses the concept of a country's "maritimeness" in an analysis of sea power.² He also discusses how a people's view of themselves impacts on the very nature of their country.³ The "popular consciousness" of the people is a significant factor in shaping the character of the country and its citizens. In other words, how they see themselves is, to a large extent, reflected in who they are, and how they are viewed by others. Australia has a maritime-based history and a high dependence on the oceans, and this is reflected in the maritimeness of the country's popular consciousness. The maritimeness of Australia has had, and will continue to have, a significant impact on both the economic development of Australia and the country's security.

The maritimeness of a country can be viewed as a composite of tangible and intangible factors that shape and influence the maritime affairs of a nation. The tangible factors are objective and relatively easy to understand. They include a country's geography, sea-trade figures, merchant marine tonnage, the size and capability of the navy, the scope of the shipbuilding industry and the value of key maritime industries. The intangible factors are primarily based on the popular perceptions held by the citizens; their history, culture, interests, lifestyles and ambitions. These factors all combine to produce a popular consciousness amongst the people, and are key components of a country's maritimeness.

Australians have a heavy reliance on the oceans, and see themselves as a maritime people for good reason; maritime affairs encroach, at least indirectly, on virtually every aspect of Australian life. Over one quarter of Australia's population live within three kilometres of the coast, and three quarters live within 50 kilometres.⁴ The coast is a very popular place to holiday, and the

beach has become synonymous with the Australian way of life. The promotion of Australia overseas is dominated by images of a fun-loving country with the beaches and other marine recreational activities (most notably the Great Barrier Reef) being at the forefront of most advertising campaigns.

One of the most obvious impacts the oceans have on Australia is through international trade. Being an island nation, the vast majority of trade travels by sea, with the State of the Marine Environment Report (SOMER) ranking Australia fifth in the world in terms of frequency and volume of shipping.⁵ This is primarily due to the large number of heavy bulk cargo exports and the large distances that Australia's trade must travel. While air freight is playing an increasing part in transporting high value items, (ironically many of which are from the ocean, such as blue fin tuna and lobsters) Australia's 68 commercial ports will continue to play a vital part in the country's economic well-being.

Australia also derives substantial wealth from maritime industries, many of which are experiencing significant growth. In 1994 an *Ocean Outlook Congress* was held in Canberra at which Australia's leading marine science organisations, government departments and marine industry representatives came together to discuss the implications of the Exclusive Economic Zone (EEZ) for Australia.⁶ The value of Australia's maritime industries was estimated by the congress to be \$21 billion per year. Significant contributors to this figure were offshore oil and gas (\$8.2 billion), shipbuilding and shipping (\$2 billion) and commercial fisheries (\$1.3 billion), with a further \$2 billion estimated to be spent by recreational fishers. Tourism was identified as another significant and rapidly expanding industry, with the

1994 value of marine tourism placed at \$8 billion, with the potential to double in value every five years.

With the establishment of significant rights over the EEZ, Australia is well placed to reap even richer rewards from many marine related industries. The congress estimated that, properly developed, Australia's maritime zones could contribute up to \$85 billion a year to the national economy by the year 2020.⁷ In particular, the formalising of access rights under the EEZ regime and the advancement of technology should see greater investments being made in the fisheries and aquaculture sectors. Ecologically sustainable tourism was also recognised as a boom industry that is expected to experience significant growth for the foreseeable future.

In addition, new industries in the pharmaceutical and biotechnology arena should develop, as technology allows bioprospecting to move from the traditional terrestrial arena to exploit the huge array of biodiversity in the oceans. The congress estimates that Australia has the potential to earn between \$2 billion and \$5 billion from pharmaceutical and agrochemical based industries by 2020.

While the discussion above has centred on the economic benefits Australia can derive from proper marine management, the "popular consciousness" Australians have regarding maritime affairs is only partly explained by economic dependence. Australia's history and the population's culture, expectations and ambitions have also impacted on the maritime flavour to Australia's way of life and national psyche.

The maritimeness of Australia is seeded in the country's history. Prior to European settlement, coastal Aboriginal communities made extensive use of the oceans. Although many indigenous methods of exploiting marine resources have now been impacted upon by modern Western methods, many important cultural and historical links to the sea remain. The most publicised example is the Torres Strait Islanders. Many of the islands in the Torres Strait region are infertile and the 5200 Torres Strait Islanders have long had a significant reliance on seafood. The SOMER identified this group as amongst the greatest seafood consumers in the world.⁸ There are also other examples of coastal Aboriginal communities maintaining their traditional association with the sea, including those around the Cape Leveque region of Western Australia and the Koori communities of New South Wales.

Due to vastly different perceptions on resource ownership between indigenous and Western cultures,

indigenous interests in coastal zone and maritime management have not been well catered for since European settlement.⁹ In recent years however, recognition of the importance of indigenous input into national policies has increased, and Australia's oceans and coastal policies now both have sections dealing specifically with indigenous issues.

Modern Australia evolved from the First Fleet landings in 1788, and has developed with traditional Western views on resource ownership. As a penal colony for Britain, maritime transport was integral to the success of the settlement. All the materials and infrastructure that were required to establish the colony were brought to Australia by ship; everything from convict labour to domestic animals and familiar (British) flora. The maritime nature of early Australia was reinforced by the settlement being a British colony in a time when Britain was the dominant maritime and naval power in the world and was further enhanced by a succession of governors, Phillip, Hunter, King and Bligh, appointed from a naval background.

Being an island country herself, Britain had been subject to numerous attacks from across the sea and had been a maritime nation for centuries. The character and perceptions of those early British who first settled in Australia resulted in a transfer of this maritimeness to the new colony. This was further perpetuated by the clear reliance on maritime transport and sea trade for the colony's very survival. Australia is a very dry and arid country, with significant desert areas inland. With the most productive and easily accessible land on the coast, travelling inland was quickly found to be harsh and dangerous. Coupled with the fact that essential supplies could only be obtained by sea, most settlements remained on the coast. This trend continues today.

The formal links between Australia and Britain continue, albeit now confined largely to a ceremonial role. While the republic debate continues in Australia, there can be no denying the contribution Australians have made to support Britain in times of crisis, and these contributions have always relied on sea transport and naval power. Even Australia's most defining military battle at Gallipoli, viewed by Australians as the country's "coming of age", was heavily reliant on sea power and the Navy, as highlighted in Swinden's 1990 book, *First In, Last Out – The Navy at Gallipoli*.¹⁰ Maritime power has been significant in the shaping of Australia.

The maritime nature of Australia is also evident in the country's strategic situation, with the sea-air gap



HMAS Brisbane and HMAS Newcastle at sea

around the island continent being a key consideration in national security. The Australian Government released a White Paper, *The Defence of Australia* in 1987, which stated:

...those basic facts of geography highlight the fundamental importance for Australia of maritime forces capable of preventing an enemy from substantial success...¹¹

This was followed in 1994 by an updated White Paper titled *Defending Australia* which again highlighted the priority on maritime force for Australia's security:

Developing our capabilities to take advantage of our strategic geography means, most importantly, making our sea and air approaches an effective barrier to attack. We therefore give clear priority to the naval and air capabilities required to deny our sea and air approaches to an adversary so that we can limit the lodgement and support of land forces or the mounting of air attacks.¹²

This guidance from the Australian Government clearly demonstrates the importance of protecting the country's maritime approaches, particularly to the north. Evidence of this commitment can be seen in the

Government's investment in the Jindalee Over the Horizon radar network, ANZAC Class Frigates, COLLINS Class submarines, and Airborne Early Warning Aircraft.

In addition to traditional military considerations, recent activity in the illegal transportation of drugs and (increasingly) people has highlighted the danger to Australia's security from large scale criminal activities. Of major concern is the sudden increase in people attempting to enter Australia illegally, driven by the false lure of an immigration amnesty and guaranteed employment during the Olympics. A number of actual landings of illegal immigrants over the last 12 months has prompted the Federal Government to revitalise the Coastwatch organisation, with the coordinating role being upgraded and given to a Navy Rear Admiral. This again highlights the importance of maritime affairs in Australia's security, and reiterates the importance that the sea-air gap plays in managing these problems.

While Australia's strategic outlook has traditionally been focused to the north, the advent of Exclusive Economic Zone responsibilities around Australia's offshore territories has led to a requirement to patrol areas deep in the Southern Ocean. The Australian

Fisheries Management Authority (AFMA) estimates that during the 1996–97 season, between 10,000 and 18,000 tons of Patagonian Toothfish were taken illegally from within the Heard and McDonald Island Exclusive Economic Zone, while the licensed Total Allowable Catch allocated by AFMA was 3800 tons.¹³ This represents a significant quantity of Australian resources being stolen, as well as a major threat to the long-term viability of the fishery. Both the Royal Australian Navy and commercial vessels have patrolled and apprehended a number of illegal vessels fishing in the EEZ around Heard and MacDonal Islands in recent years. These apprehensions were followed through with successful prosecutions and, although expensive to conduct, are indicative of the seriousness with which the Australian people take their maritime responsibilities.

The ability to project maritime power is also important to Australia. With jurisdiction covering areas from the tropics through to Antarctica, patrol assets must be capable of operating in a vast array of different conditions. The large distances involved also mean new naval vessels such as the ANZAC Frigates and COLLINS Submarines, as well as maritime patrol aircraft, must have a significant range as a critical part of the required capability. The importance placed on range and endurance of these surveillance assets is evidence of the commitment Australians place on protecting their maritime areas and how important the oceans are to Australia's national security.

This commitment is further demonstrated by examining Australia's Search and Rescue (SAR) responsibilities. The Australian Maritime Safety Authority manages Australia's SAR organisation and is responsible for 47 million square kilometres, – over one ninth of the earth's surface.¹⁴ This is a significant responsibility bestowed on Australia's 19 million citizens, especially considering the area covers a diverse range of environmental conditions. While there was some public debate over the value of Australia rescuing around the world yachtsmen from the Southern Ocean during the 1990s, Australians were generally proud to accept their responsibility and associated cost to stage these rescues.

There is also ample evidence of a high level of commitment to maritime affairs by Australia at the policy and legal levels. An assessment of Australia's contribution to the development of the Law of the Sea Convention is one example. The evolution of the LOSC began with the Trueman Proclamations of 1945, aiming to formalise the competing principles of territorial

sovereignty and high seas freedoms.¹⁵ Around the same time, the United Nations was formed with the aim of providing an international forum to debate issues of international significance, and the concepts of international law were emerging. Being clearly a global issue, the Law of the Sea was quickly afforded a high priority within the International Law Commission of the UN, and the first Conference of the Law of the Sea was convened in 1958.

A second UN Conference on the Law of the Sea followed this in 1960 and a third conference (UNCLOS III) commenced in 1973. The UNCLOS III negotiations continued until 1982 before the Law of the Sea Convention 1982 (LOSC) was finalised. The required number of countries (60) ratified the LOSC by 1993, and the Convention entered into force on 16 November 1994.

Bergin has summarised Australia's role in these negotiations and shown that Australia was one of the leading actors at UNCLOS III.¹⁶ Australia's influence was widely accepted as being greater than expected given our economic position and population, and is indicative of the importance with which Australia is viewed in the international maritime arena.

Broadly speaking, Australia's goals at UNCLOS III were biased towards increasing the rights of coastal states to control offshore resources. This view was often in contradiction to other Western powers and maritime states that were inclined towards maintaining traditional high seas freedoms. Australia was influential in negotiating compromises that saw the eventual extension of the territorial sea to 12 miles, the creation of the 200-mile Exclusive Economic Zone and rights to the continental shelf (in certain circumstances) beyond 200 miles.

While essentially siding with the coastal state groups, as a maritime nation Australia also relies on many of the high seas freedoms espoused by those traditional maritime states opposing the extension of jurisdiction. Hence, Australia worked to ensure that the regimes of Innocent, Transit and Archipelagic passage were developed and incorporated into the LOSC. These provisions have a significant impact on Australia's maritime affairs given our geography and location.

Analysing the partnerships Australia formed with other countries highlights the delicate nature of the LOSC negotiations. Bergin has identified 62 different countries that were, at one time, negotiating partners with Australia.¹⁷ Again, this demonstrates the extent to

which Australia's delegations would go to maximise their influence during the negotiations, and is a reflection on the importance Australia placed on developing a universally agreed convention governing oceans use.

A specific example of Australia influence was in successfully seeking provisions to protect special sensitive marine areas. This was driven by a desire to protect the Great Barrier Reef, but is equally applicable across a number of other environmentally sensitive areas. Australia initiated provisions for such areas to be recognised internationally, and to be covered by coastal state pollution control measures, regardless of what maritime zones the areas are located in. LOSC Article 211 covers this situation and, although weaker than Australia had intended, was agreed to in the face of significant opposition from the maritime powers. The Great Barrier Reef was declared the world's first Particularly Sensitive Sea Area in 1991. Australia has also been very active in the International Maritime Organisation in negotiating agreements on a wide range of issues, such as pollution control, ballast water restrictions and crew training proficiency.

The development of the LOSC coincided with an increase in public awareness in environmental matters. The increase in world population together with a rapid increase in economic activity over the last 50 years has seen pollution and resource depletion become issues of global concern. Throughout the 1960s the environmental movement gained momentum, and the United Nations Conference on Human Environment (UNCHE) was held in Stockholm in 1972 specifically to discuss global environmental issues.

Up until the late 1980s there was a widely held view that conservation and economic development were mutually exclusive, with a resultant confrontationalist approach to managing many issues. In 1992, the UN hosted the United Nations Conference on Economic Development (UNCED) in Rio de Janeiro; the so-called "Earth Summit". UNCED was designed to mark the 20th anniversary of the UNCHE and to update the issues from that conference. A major outcome of UNCED was the concept of Economically Sustainable Development (ESD); the notion that conservation and development were not mutually exclusive, and in fact had to compliment each other. ESD has been defined as:

Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.¹⁸

Australians have been world leaders in pursuing environmentally friendly initiatives, such as recycling and placing strict pollution controls on industry. The country has been described in the press as being an ecological superpower based on the vast area over which the country has some form of jurisdiction, and the diplomatic successes in challenging environmentally damaging activities, notably the French nuclear testing in the South Pacific.¹⁹ Australia also has an enviable reputation in seeking to limit activities such as whaling, and keeping pressure on those who seek to flaunt internationally recognised standards on such activities.

In a maritime sense, this public commitment can be seen by investigating a number of community based coastal protection programs operating in Australia. A good example is the extremely successful "Clean Up Australia" campaign initiated by Ian Kiernan. This started as an effort to remove litter from Sydney Harbour, but quickly grew to be a major national event with an extremely high level of public support. In 1991, the Australian Prime Minister launched the Ocean Rescue 2000 program. A significant part of the program was the establishment of a Marine and Coastal Community Network (MCCN), aiming to foster community involvement in marine affairs, and develop a strong constituency for the Oceans Policy.

One hundred and twenty-five million dollars of government funding has been made available to support a wide variety of community based projects under the Coasts and Clean Seas and Coastcare programs.²⁰ In 1997/98, there were 423 separate projects funded under the Coastcare program, ranging from beach regeneration to marine education programs.²¹ This community support towards self-help programs is further evidence of the concern Australians generally feel for their maritime areas. Their desire to protect marine areas is enhanced by a growing realisation of how lucky the country is to have relatively few environmental problems, and the obvious benefits of tackling any problems early before they become acute.

In the last 10 years there has been a number of government reviews and reports, culminating in the release of Australia's Oceans Policy in December 1998. Significant amongst these has been Professor Ken McKinnon's Oceans of Wealth 1989, the Coastal Zone Inquiry 1993, and the State of the Marine Environment Report 1995. Together with Australia's coastal policy released in 1995, these reports all reiterated the need for

a consolidated and integrated approach to ocean management.

The Commonwealth Government commenced the formulation of a comprehensive oceans policy with the release of a consultation paper titled *Australia's Oceans, New Horizons* in March 1997. The aim of this paper was to promote discussion and debate on the full range of activities that would impact on an oceans policy. The document provided a vision for managing Australia's maritime areas, together with draft aims and objectives for the policy to meet. Feedback was sought from a wide variety of industry, scientific, environmental and academic interests.

The next step involved the release of *Australia's Oceans Policy – An Issues Paper* on 19 May 1998 which sought comment from both maritime interest groups and the public. A total of 533 submissions were received and considered before the final release of *Australia's Oceans Policy* on 23 December 1998.

To assist in assimilating inputs and feedback into the policy development process, a Ministerial Advisory Group on Oceans Policy (MAGOP) was established. The 18 members of MAGOP were drawn from industry, recreational, legal, conservation, scientific and academic groups, and represented a very good cross section of the Australian community.

As discussed earlier, integrated oceans management is premised on the concept of economically sustainable development; the realisation that economic activity and conservation must be managed together and not be viewed as competing aims. While Australians have become more aligned to this way of thinking over the last 10 years, analysis of the public feedback does not bear this out. The general thrust of public comment to the consultation paper was that the policy was too heavily biased towards the economic considerations at the expense of environmental ones.²² It is arguable whether this assessment is an accurate reflection of public concern, or is artificially biased due to those with a pro-environmentalist stance being more vocal with their views than the average Australian. While difficult to judge, it is fair to say that this element cannot be discounted.

The resultant oceans policy is based on the development of Regional Marine Plans based on large ecosystems as a whole. In order to manage the process, the Government has established a National Oceans Ministerial Board of key government ministers to have the decision making authority in regard to the plans.

This board will be advised by a National Oceans Advisory Group consisting of key government, industry and community representatives to provide technical advice. At the working level, Regional Marine Park Steering Committees will be formed to develop specific plans relevant to each area. These committees will consist of local stakeholders from all sectors involved in a particular area.

This approach seeks to capitalise on the popular consciousness of Australians with regard to maritime affairs. By having a maritime flavour intrinsic to Australia's way of life, the people have a natural affinity for the oceans and a desire to see them managed properly. Rather than have restrictions imposed from a central government, it has been left to the stakeholders who will be affected to be actively involved in the management. This approach will also enhance the appreciation each sector has for the problems faced by the other sectors, and by including federal, state and local government involvement, jurisdictional problems, which can be particularly complex in Australia's case, should be minimised.

The Government has moved quickly to translate the intention of the oceans policy into action. The National Oceans Ministerial Board met for the first time on 11 May 1999 and agreed to the composition of the National Oceans Advisory Group.²³ Funding was allocated in the 1999/2000 federal budget, and on 25 June 1999 the Minister for the Environment and Heritage announced the establishment of the National Oceans Office, charged with implementing the policy, in Hobart.²⁴ Work is already well underway in developing the first Regional Marine Plan for the south-east section of Australia's EEZ.

It is clear that Australia has a strong maritime heritage, and that there is a significant degree of maritimeness to the Australian psyche. This popular consciousness within the Australian people stems from the history of both pre- and post- European settlement, the reliance on maritime links to establish the country, and the dependence modern Australia has on the oceans for economic wealth, trade and national security. As Admiral Hill stated, the intrinsic nature of a country's citizens is very much a function of how they view themselves. In this regard, the dependence Australia has on maritime affairs, together with the cultural affinity Australians have for the sea has developed a strong maritime trait in their popular consciousness. Coupled with a general concern for environmental protection,

this has seen Australia become well respected in international fora dealing with maritime affairs, with influence beyond what would be expected from a country the size of Australia.

The maritimeness of the Australian psyche has also played a significant part in developing *Australia's Oceans Policy*, which in turn provides the framework for the country to manage and develop sustainable uses of the oceans. Since the policy was launched, the Government has moved to provide the funding and resources necessary to successfully move to implementation. It behoves Australia to keep this momentum going.

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British Army artillery on exercise in Bosnia

Analysis of the NATO Information Campaign – In the War Against Yugoslavia

By Major Mathew Smith, RA Sigs

In April 1999, at the height of the NATO (North Atlantic Treaty Organisation) led war against Yugoslavia, CNN televised an interview between a war correspondent from the Washington Post and a Pentagon spokesman. During the interview the CNN newsreader asked the two men if NATO forces should attempt to eliminate President Slobodan Milosevic. The war correspondent replied in the affirmative. He believed that Milosevic was the driving force behind the Yugoslavian war effort and that without him, not only would they be leaderless, but the Serbians would lack the political resolve to sustain hostilities. He firmly believed that removing President Milosevic would shorten the war. The Pentagon spokesman was more diplomatic. Despite the row upon row of decorations that he wore, he believed that NATO did not have the right, nor did any other political organisation, to remove a head of state. That, he said, must be the decision of the people whom that person represents.

The Pentagon spokesman may have simply been stating his opinion. However, he may have been delivering yet another missive that had been carefully designed to place responsibility for the suffering that the Serbians were enduring with President Milosevic. This statement may have been part of an information campaign designed to increase Serbian dissatisfaction with both President Milosevic and the war, with the intention of undermining political support in an effort to shorten hostilities. In fact, it may have been considered long before the question was posed that eliminating President Milosevic would immortalise him and turn his campaign into a jihad.

It may be some time before the specific details of the NATO information campaign are available, however there is equal value in postulating how the campaign may have been conducted. This article will discuss the range of information operations (IO) capabilities, both national and military, that might have been applied by NATO in Yugoslavia. An information strategy that would support the operations as they occurred will be developed and then discussion will focus on individual elements of the NATO campaign and how each element fitted into the information warfare battlespace. This article will conclude with an examination of how NATO achieved information superiority. Where possible, discussion will draw on the Allied Coalition's use of command and control warfare (C2W) in the Persian Gulf War.

Information Strategy

Given the lessons that the Allied Coalition learnt in the Gulf War regarding the importance of information superiority, a comprehensive information strategy would

certainly have been developed for the war in Yugoslavia. NATO would have done this if only to ensure that the information superiority the Coalition enjoyed in the Gulf War would be repeated in Yugoslavia. It is likely that the information strategy developed for the initial stages of the war against Yugoslavia was replaced when the coalition realised that Milosevic was not going to capitulate as quickly as he did when confronted in Bosnia. In fact, it appears that NATO political and military leaders were quite unprepared to respond to Milosevic's intransigence and the ferocity of his ethnic cleansing campaign which necessitated a rapid increase in the intensity of the air war. It is possible that President Clinton and his intelligence analysts failed to realise the importance of religion. Kosovo contains the historical roots of the Serbian Orthodox Church. No Serbian leader would easily agree to a hostile foreign power demanding that Serbians leave Kosovo.¹

The war had three discernable phases. The information strategy of each phase would have evolved as the Serbian centre of gravity shifted. NATO's initial information campaign strongly resembled the Allied Coalition approach in Operation *Desert Storm*. Yugoslavian aircraft detection and strategic communication systems were promptly destroyed leaving Milosevic blind and, for the most part, defenceless against the NATO air strikes which relentlessly struck at various military and infrastructure targets in the hope that he would see the hopelessness of his situation and concede to UN demands. When it became obvious that coercive diplomacy was not succeeding the objective was changed to "degrading" Serbian military capabilities and Milosevic's instruments of power in such a way that he would eventually give

up.² Trunk communication networks and power generation facilities became regular NATO targets.

While Serbian command, control and communication (C3) assets were high on the list of air strike priorities, the information campaign also took on a psychological aspect. Milosevic restricted all foreign radio and television broadcasts within Yugoslavia in favour of his own continuous barrage of pro-Serbian propaganda. He was unable, however, to keep the coalition from capitalising on its technological superiority which allowed it to beam its own video stream into Yugoslavia via satellite and broadcast its messages on the BBC's Internet channel. It is also plausible that supporters of NATO's cause, or even NATO itself, were providing support to the multitude of other privately funded, Internet based organisations that were resisting Serbian efforts.

In its final phase the war became a test of resolve. This also had interesting information aspects. NATO representatives were unwilling to confirm or deny the possibility of a ground offensive which it was known would be economically and politically costly to the Coalition, but would certainly bring the war to a rapid close. Was this dis-information? Given the political unacceptability of losing soldiers in what had thus far been a bloodless operation, a ground offensive is not a decision that NATO would have taken lightly. Was the prospect of a NATO ground offensive designed to create an air of uncertainty among Milosevic and his supporters? Given Milosevic's aversion to journalists, it may never be clear why he capitulated. A popular belief is that he realised that he had stretched his political popularity to the limit and that a ground war would have made his political career unsalvageable. If this were known to be true, NATO may have been aware of the affect of rumours of a ground war.

The NATO Information Operation Taxonomy

Having examined the strategies upon which NATO's information operations in the war against Yugoslavia may have been founded, it is worthwhile examining the array of weapons and resources that were employed by NATO; the array of weapons and resources that secured its clear information superiority. The United States Air Force (USAF) has developed an information warfare taxonomy based upon the categories of military operations that can be employed to conduct warfare. USAF defines information warfare as any action to deny,

exploit, corrupt or destroy the enemy's information and its functions while protecting friendly forces from similar actions and exploiting the resulting information superiority.³

Figure 1 shows the tactical options available to NATO and the way they may have been employed in the war against Yugoslavia. The way each resource contributed to NATO's information superiority will be assessed in the context of each phase.

Figure 1 shows that NATO information operations in Yugoslavia utilised the full range of attack and defence operations specified by USAF in its information operations taxonomy including:

- a. **Psychological Operations:** Activities that use information to influence an adversary's reasoning.
- b. **Military Deception:** Attacks designed to mislead an adversary about intentions or capabilities.
- c. **Security Measures:** Operations and technical security to protect friendly information sources and processes.
- d. **Physical Destruction:** An adversary's war making capabilities are destroyed by the conversion of stored energy to destructive power.
- e. **Electronic Warfare:** Attacks through the electronic spectrum to deny accurate information to the adversary's electronic sensors.⁵

Phase 1 – Make Milosevic Blink

Klaus Naumann, a German army general and Chairman of the NATO Military Committee until May 1999, stated that the first phase of the war against Yugoslavia was designed to make Milosevic blink via sudden military attacks at minimal loss of human lives.⁶ NATO's strategy was to seize the initiative by destroying Yugoslavian radar and air defence assets and then undermine Milosevic's ability to continue hostilities by quickly destroying his command and control assets.⁷ Selecting from the operations described above, NATO operations in the first phase of the war were typified by employment of security measures, physical destruction and electronic warfare in an attempt to increase NATO's information superiority.

Security Measures

Space control in the Gulf War was achieved by members of the Coalition negotiating an agreement with Spot Image, the corporation that operates the Spot series of satellites. The agreement stated that Spot Image would only sell its images to countries belonging to the Coalition. The space imagery embargo against

Iraq was possible because the few countries capable of providing space imagery of the Middle East region consented to the Coalition's general aims.⁸ NATO brokered a similar arrangement in the war against Yugoslavia. In this way, NATO secured its access to vital satellite imagery while denying its adversary the same information.

Yugoslavia's theatre level reconnaissance activities were reportedly restricted to open source news reports which, in the first phase of the war, were a valuable source of intelligence to President Milosevic's forces.

Military censorship was stepped up, however, when the *Washington Post* reported NATO plans to widen air strikes to target ministries in Belgrade supposedly two days in advance of the first attack.⁹ Was media censorship another aspect of NATO's information strategy? NATO attributed its intervention to the sophistication of global communications technology which allowed the public, and therefore Yugoslavian forces, to receive vital information before NATO can assess its strategic importance.

Figure 1. *Information Operation Taxonomy*⁴

Operational Objective	Information Operation Category	Direct or Indirect Action	NATO Example in War Against Yugoslavia
Exploit Information	Acquisition, storage or transformation of information that enhances the employment of military forces	Direct	Interception of Serbian radio communications (Mercury, Mentor and Trumpet) to locate forces and extract other information
		Indirect	Satellite surveillance (Keyhole and Lacrosse) and UAV reconnaissance of Serbian forces
Attack and defend information	Psychological operations: the use of information to affect the enemy's reasoning	Indirect	Distribution of video and audio messages into Serbian public media
	Military deception: misleading the enemy about friendly capabilities or intentions	Indirect	Discussions about a ground offensive may have been dis-information
	Security measures: keeping the enemy from learning about our military capabilities and intentions	Direct defensive countermeasures	INFOSEC countermeasures designed to deny access to NATO computer networks
		Indirect defensive countermeasures	NATO physical defences, physical hardening of C3I assets, OPSEC, COMSEC
	Electronic warfare: the denial of accurate information to the enemy using the electromagnetic spectrum	Direct	NATO generation of deceptive radio transmissions to insert false information to the enemy's information system
		Indirect	NATO jamming or deceiving (U-2) radar sensors
	Physical destruction: affecting information system elements through physical destruction	Direct	Destruction of Serbian command and control assets by NATO forces
		Indirect	Destruction of Serbian electrical and other infrastructure assets by NATO

Physical Destruction. The intensity of the initial air strikes is one essential difference between the Gulf War and the war against Yugoslavia. Not since World War II had the US military deployed three types of heavy bombers (B1, B2 and B52) against an adversary. The NATO bombing campaign in the war against Yugoslavia involved many different types of aircraft and many different types of munitions however over 90 per cent of the bombs dropped were precision guided bombs. In the first phase of the war, surveillance and C² assets were favoured targets.

Electronic Warfare. All air strikes against Yugoslavia were part of a complicated choreography charted for each of the 4000 daily sorties. All air strikes were provided suppression of enemy air defence (SEAD) protection. This consisted of US Navy EA-6B radar jammers which were accompanied by USAF radar targeting=F-16Cs which scoured prospective flight paths for electronic clues betraying SAM radar.

Phase 2 – The Degrading of Yugoslavia's Military

Phase 2 of NATO's information campaign was modified to support the need to target tanks, artillery and other military assets. This required NATO aircraft to fly much lower increasing reliance on the E-3 AWACS and E-2C radar planes, E-8 Joint STARS ground surveillance planes and R8 Rivet Joint planes. These aircraft search the sky and ground for enemy, provide target information and provide air traffic control information to friendly aircraft. Most of this technology was employed in the Gulf War and provided the Coalition forces with technological advantage that secured the Iraqi defeat. Degrading Yugoslavia's military, however, also included another essential ingredient; psychological operations.

Via their experiences in Vietnam, the US military were aware of the danger of using limited military means to undermine an adversary's will to continue hostilities. Such a strategy dictated an air campaign characterised by a gradual escalation to find the adversary's breaking point. NATO supported their physical destruction activities with a psychological campaign designed to discredit their opponent and undermine political support for their war effort.

Claims of the use of human shields abounded in NATO's reporting of the Yugoslavian tactics. These were broadcast on global news reporting services and beamed to Yugoslavian homes continuously via the NATO

satellite link that Yugoslavian forces were unable to sever. Yugoslavia's civilian infrastructure was also a regular target. According to G17, a self-proclaimed independent Belgrade based economic organisation, 60 per cent of Serbia's electrical transformers were out of action by the end of the war. G17 further claimed that it was unlikely that the Yugoslavian Government would be able to restore electricity to the war ravaged parts of Yugoslavia before the onset of Winter. It has been argued that the targeting of civilian infrastructure constituted a contravention of Protocol I of the 4th Geneva Convention of 1949 that states that civilian infrastructure is off limits to IO tactics.¹⁰

Such use of psychological operations would have been designed to undermine Serbian will to continue hostilities and push President Milosevic toward capitulation. However, it may have been a subtle deception operation that provided the pique that was to force Milosevic to submit on 3 June 1999.

Phase 3 – Threat of a Ground War

In President Milosevic's case, it appears that a ground war would have placed his political survival in jeopardy. This would explain his sudden change in demeanor on 19 May when special envoy Viktor Chernomyrdin explained that in order to avoid a ground war Russia would support NATO's position. According to NATO's deployed forces commander, General Wesley Clark, while there were no plans made for a ground invasion, nothing was done to discourage popular belief. NATO quickly capitalised on this belief by moving troops, intended for use in peacekeeping operations at the conclusion of the war, into border regions in Albania and Macedonia.

The Information Warfare Battlespace

Clearly the war against Yugoslavia extended into physical, information and perceptual realms. Figure 2 illustrates how the physical, information and perceptual aspects of information warfare battlespace extended across all phases of the war against Yugoslavia.¹²

In most conflicts prior to the Gulf War, there was a clear distinction between the various information operations of which hostilities were comprised. Since the Gulf War, however, the dividing lines between different information operations categories have become far less clear. Aspects of the information operations that are conducted in each of the physical, information warfare and perceptual realms contribute more directly to operations conducted in another realm

more directly now than ever before. For example, aspects of the propagation of television and audio transmissions via NATO satellites belong in both information and perceptual realms.

Information Superiority

One thing all information operations have in common is that they are all designed to contribute to a clear information superiority over one's adversary. In order to ensure that NATO enjoyed a similar information advantage in the war against Yugoslavia as the Allied Coalition in the Gulf War, NATO employed similar information strategies and technologies. Significant advantage was gained through NATO satellite and space control operations. Military Satellite Communications (MILSATCOM) formed the C² backbone of operations throughout the war against Yugoslavia. This highlighted growing US dependence on MILSATCOM to provide the operational flexibility required to meet C² needs. Even the precision weapon systems used against Serbian forces depended upon high-speed MILSATCOM data systems for success.

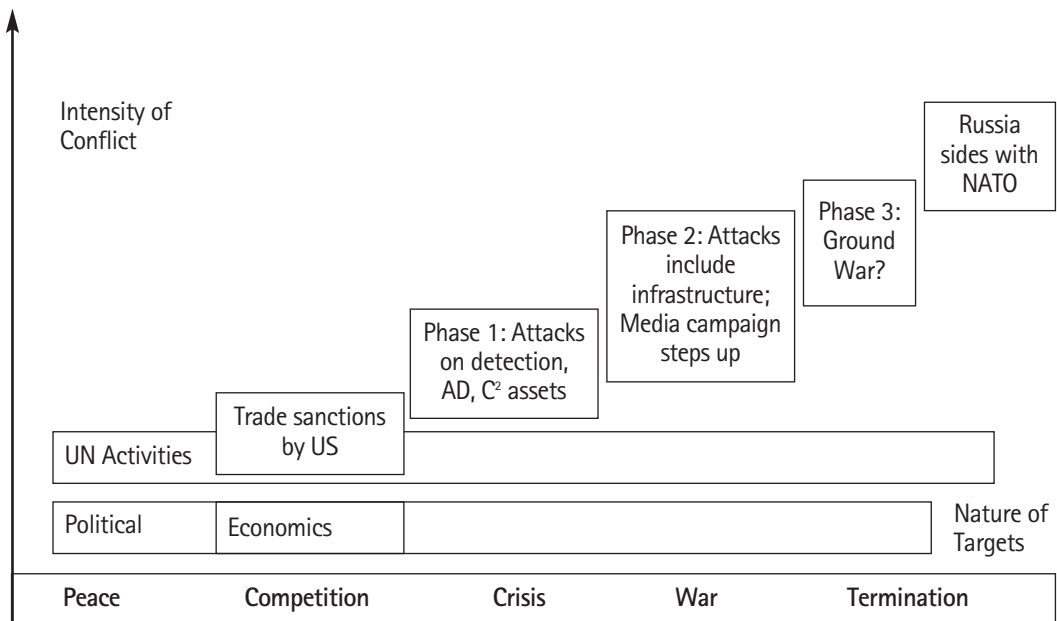
NATO ensured that Yugoslavia was denied access to satellite imagery and used its own extensive satellite communications networks to transmit more than 150,000 messages per day. Satellites provided reliable intra theatre communications, including secure and non-secure voice, data and fax. Information superiority

was achieved despite equipment differences between NATO forces. Several generations of equipment and many different command and staff elements were combined during the conflict. More than 35,000 frequencies were managed and monitored daily to ensure that radio communications nets were free of interference from Serbian forces. Unprecedented diplomatic and military coordination was achieved among NATO participants.

NATO forces capitalised on the lessons learnt in the use of satellite and airborne surveillance technologies in the Gulf War in its war against Yugoslavia. In fact NATO's heavy reliance on similar strategies made fighting the war in Yugoslavia more difficult than it could have been. Many of the targeting systems employed by NATO against Yugoslavia use line-of-sight which performed well in the desert battlefields of the Gulf War, but not so well in Yugoslavia. The craggy nature of much of the Balkan terrain ensured that a few Serbian soldiers were always hidden from sight. The terrain also worked against Milosevic's forces who were often forced to travel on roads.

The objective of information-based warfare is full spectrum dominance. This is the effective application of military power by information based planning and execution of military operations. Did NATO achieve this during the war in Yugoslavia? Almost certainly. However the effectiveness of NATO's psychological operations

Figure 2. Information Warfare Battlespace



must be questioned considering that during the conflict the majority of Yugoslavians believed that Milosevic was protecting them from NATO bombing. When Milosevic finally capitulated CNN televised Belgrade citizens celebrating as though it were a victory. How did Milosevic achieve this despite NATO's information superiority?

Conclusion

This article's aim is to illustrate how the NATO information campaign may have been conducted and how NATO secured its information superiority in the war against Yugoslavia. USAF's information operation taxonomy provided a useful framework for describing the range of weapons and resources that were employed by NATO. The way each of these resources contributed to NATO's information superiority was then assessed within the context of each of the three discernible phases of the information war. NATO's domination of the information warfare battlespace was then illustrated which conclusively demonstrated NATO's information superiority in the war against Yugoslavia.

The information operation strategies and technologies employed by NATO in the war against Yugoslavia strongly resembled those that were pitted against Iraq in the Gulf War. The Allied Coalition's information superiority in the Gulf War made a significant contribution to the military advantage required to secure the victory it achieved over Iraqi forces as did NATO's information superiority in the war

against Yugoslavia. However, NATO's failure to accurately assess the importance of religion and the fact that political support for NATO's activities was dissipating could be considered defects in NATO's domination of the information battlespace.

NOTES

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2. The term "coercive diplomacy" was coined by James Kitfield in his article "War Making by Committee" published in the *National Journal* on 8 May 99. He describes coercive diplomacy as the exertion of diplomatic pressure followed by limited war to obtain a political objective.
3. Presented in Waltz, E. *Information Operations; Principles and Operations*, 1998, Artech House Inc., p.24.
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5. Waltz, *ibid.*, p.26.
6. Kitfield, *ibid.*, p.29.
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12. Display adapted from Waltz, p.29. Waltz describes the information warfare battlespace as extending beyond the information realm. According to his definition the information warfare battlespace deals with information content and processes in the physical, information infrastructure and perceptual realms.

Better than Monash? Compare the Performance of Monash, Currie and Russell on the Western Front

By Major S.J. Watts, RAR

[It] Shows Monash's great power of grasp and of lucid expression at their best – the officers to whom they were read at the time recognised, with flash of pride, "the old man's masterly touch". The situation that called for each phase of action was clearly explained and the action crisply ordered.¹

If C.E.W. Bean is to be believed, then General Sir John Monash was probably one of the most gifted commanders to have served on the Western Front. It can not be denied even after a cursory study of Monash's accomplishments that he was not a high achiever in both his military and civilian life. Equally the same accolades could be awarded to Major General Sir Andrew Hamilton Russell and Sir Arthur Currie, but as a commander the question still remains, does one of them stand out amongst the others? Bean wrote of the achievements of Monash, he was a great supporter and in the capacity of the Australian Official Historian his opinions carried great weight at the time. Very few other people wrote of Monash and his achievements, with the exception of himself until the publication of A.G. Serles' biography in 1982,² nevertheless "historians have lauded Sir John Monash as a commander with exceptional vision and ability".³

This article will initially examine the background of Monash in order to explain his characteristics and abilities as witnessed on the Western Front. Currie as commander of the Canadian Corps and Russell as commander of the New Zealand Division will be secondly assessed and their styles and command strengths compared to those of Monash. It is only through a synopsis of reported incidents and notable command traits that any form of comparison can be formed and it should be noted that any direct comparison of command ability must be tempered by historical accuracy. Great national historiographical rivalry existed at the time and some still does which to some extent can be laid at the feet of the dominion official war correspondents, each with an obvious agenda. Each of the dominions liked to see themselves as "elite forces, the shock troops *par excellence*, among all the formations within the British Expeditionary Force".⁴ The British official historian, Brigadier General J.E. Edmonds referred to the Australians and the Canadians as the spoiled children of G.H.Q.,⁵ General Horne was to "confide to Haig that the Canadians had

become swollen headed"⁶ Additional to this nationalistic fervour on behalf of the dominion historians is the lack of British historical reporting of the dominion forces efforts, which would create the necessary balance, this is especially so in the case of coverage of the battle of Amiens.

John Monash was born in Melbourne on the 27 June 1865. He was very much a gifted child, leaving Scotch College in 1880 as the dux in both mathematics and modern languages as well as winning the English prize almost every year.⁷ He studied engineering at Melbourne University and after a somewhat erratic start gained his degree, followed by a master's degree in engineering, a Bachelor of Arts and a Bachelor of Laws. Monash took to field engineering upon graduating, involving himself in projects such as railway and bridge construction as well as practising as an engineering legal attorney. Monash's education and initiation into the workplace was a diverse experience, ranging from near poverty and redundancy in the depression of the 1890s to the amassing of considerable wealth just prior to the war. Monash's civilian career background although very different to his British counterparts was remarkably similar to that of Russell and Currie. Russell although gaining some limited professional experience whilst serving with the British Army in the Border Regiment was very much a militia officer and committed sheep farmer prior to the war. Currie similarly was a militia officer prior to hostilities and practised as an estate agent in British Columbia. Interestingly, Currie also experienced the effects of near poverty when he lost everything in the depression of 1913, a fact which burdened him for the entirety of the war.⁸

Monash's military career was no less diverse than his civilian career was. He entered the Army as a sergeant in the Melbourne University Company of the Victorian Rifles in 1884. He showed great promise and was promoted Lieutenant in 1887, transferring to the Victorian Garrison Artillery and by 1897 was

commanding a battery. The appointment of battery commander would be Monash's only real command which involved direct contact with the soldiers he was responsible for. There would appear to be little evidence to support Monash's leadership abilities from this period of his life. Pedersen credits him with the defence of a warrant officer at a courts martial as his only testimony of leadership ability.⁹ Monash was to serve in yet a further corps when he was transferred to the Australian Intelligence Corps in 1908 upon his promotion to Lieutenant Colonel and was put in charge of Australian military mapping. Monash had one final appointment prior to the outbreak of war when he was promoted Brigadier and given command of the 13th Infantry Brigade. Monash as can be seen by his short biographical account was not a soldier's soldier, he had little experience of intimate leadership of soldiers with the exception of his short period of sub-unit command in the Artillery prior to the war. This observation is supported by his "clinical" attitude to his men, "he never buzzed about the tents of his men to see if they were properly provided for but what he did do was to think out all things and detail officers to work out the details and report to him as to their satisfactory development".¹⁰ "His chief staff officer in the 3rd Division, Colonel G.H.N. Jackson, said that he never got him nearer than the third line and he did not seem to enjoy even that."¹¹ This "detached" form of command was to be Monash's style for the entirety of the war. Monash prided himself on his organisation and meticulous planning; things were run as a machine, war in his eyes was very much a science rather than an art. "Everything is being done with the perfection of a civil engineering construction as far as regards planning and execution" were the terms used by Monash to describe preparation for the attack on the Messines-Wytschaete Ridge.¹² For this one attack Monash wrote and issued 36 instructions and personally briefed all his subordinates down to a least brigade commanders. His vision for the operation was clearly understood by all but method of command was most certainly not by the use of directive control, an accusation levelled at him many times. "Their contributions at these conferences also served to balance Monash's frequent intrusion into his commanders' responsibilities."¹³

Monash was a proponent of the sequence battle, he had a gift for visualising the battle unfold and taking every preparation necessary to ensure a successful outcome. Once his plan had been visualised he

demonstrated great ability to pass on that vision to his subordinates. "[It] shows Monash's great powers of grasp and lucid expression at their best – the officers to whom they were read at the time recognised, with a flash of pride 'the old man's' masterly touch."¹⁴ The ability to visualise a battlefield down to the minutiae of detail was a skill Monash developed from his experiences in the Intelligence Corps and as a practising field engineer, but it was not always infallible. Monash found to his cost on at least two occasions that he would have been far better served had he bothered himself to visit the ground prior to operations. "Had Monash seen the state of the ground before the attack on Passchendaele, his objections to it might have been much stronger."¹⁵ On a second occasion during the breaking of the Hindenburg Line a visit forward to see the battle and gain first hand knowledge for himself would have served him and those in his command a great service. The 27th and 30th American Division failed in their tasks in the preliminary stages of the battle. The 27th Division subsequently lost a large percentage of its officers, became lost and dispersed into small ineffective and unled groups.¹⁶ Gellibrand and Hobbs commanding the 3rd and 5th Division, respectively pushed on and defying orders captured the objectives allocated to the Americans. The blunder was admittedly initiated by Monash's poor assessment of the Americans' ability, but was most seriously exacerbated by his command from the rear and failure to visit to front. "He had no 'feeling' for the battle because he did not visit his subordinate commanders fighting it."¹⁷

Monash's preference to command by second-hand information was very different to that of Russell who in many reports and by several actions can be seen to be very much a front-line commander. "Unlike his Australian contemporary, Russell was a front-line general who closely monitored the state of his units, demanded improvement and then ensured his commanders carried it out."¹⁸ "Russell by nature and background was a man who had to see things himself. The inspection of units in and out of the line was part of his routine."¹⁹ It is worthy of note that Russell's subordinates felt that at times he was too much of a front-line commander, taking too many risks and putting himself in unnecessary danger. "In 1917 one of his brigadiers was killed at his side and two days later a sniper's bullet passed through his steel helmet, creasing his scalp."²⁰

Russell monitored closely his units training and the abilities of those units' commanders. He saw the merits of selecting the best man for the job, which is evidenced by his acceptance of several British staff to his headquarters when the feeling at the time was very much of nationalising the contingent. Russell was unable to find a New Zealander as well trained and capable of replacing his British GSO1 Operations (principle staff officer), Lieutenant Colonel H.M. Wilson DSO.²¹ He spent considerable time weeding out those who were not up to standard and as he noticed himself becoming ever prone to sickness, "was conscious that perhaps it was time that he too was replaced".²² Russell concentrated in the training of his soldiers, demonstrating great innovation and cohesiveness unmatched by British Forces in France at the time. As much as the Dominion forces were talking of themselves as elites and the Germans were developing "elite" battalions, Russell concentrated on the cross-training of all soldiers in the unit. "This does not mean that men are to be trained as specialists in certain weapons. The ideal to aim at is – every man should be able to throw a bomb, fire a Lewis Gun, or rifle grenade, and use a bayonet."²³ Russell set out with the ambition of having the best division in France and as such demanded the best of his men. "I certainly do expect New Zealand Infantry, both in thought and action, to be at least 50 per cent quicker than the New Armies."²⁴

Currie possessed similar qualities to those of Monash in the respect of his ability to "mix with the troops." Currie was again not a soldier's soldier, looking and feeling awkward with his men he kept his contact with soldiers to only formal occasions. "In front of a large audience he became abrupt, formal and spoke inappropriately."²⁵ Currie was unfortunately blessed with an ability to "say the wrong thing at the wrong time". In the words of a veteran of the 11th Battery, Canadian Field Artillery, General Currie "did not seem to have the gift for stroking the fur the right way."²⁶

Currie's abilities as a commander lay in his zeal and enthusiasm for innovative thought, devoting his efforts to doctrinal development and the evolution of tactics. "He was vitally concerned with the weapon technology from which his tactical doctrine was derived."²⁷ Currie recognised that the development of tactics based on the small unit was the key on the battlefield and as such reorganised his corps to achieve success. Not bound by his British counterparts conservative outlooks, Currie was quick to grasp the problems of modern warfare and

tailor his forces to fit. He recognised his engineer companies into engineer brigades allowing his infantry to concentrate on infantry tasks. Currie was so sure of the advantages of the machine-gun he formed an extra battalion making a total of three companies attached to each division without the Army commander's permission, "official sanction can come later".²⁸ Currie was similarly innovative in the use of indirect fire supporting the use of machine-guns in this role, perfecting the creeping barrage and use of predicted artillery fire.

Each of the three commanders reviewed share some similarities but on the whole offer greatly different attributes as commanders of divisions and corps. As touched upon earlier it is difficult to make direct comparisons of abilities due to the fact that they commanded different units at different times and were reported on by separate historians.

Monash was a highly able commander with a great capacity for attention to detail and a certain ability to visualise a battle. Upon study one could form the opinion that he viewed his forces as a well-oiled machine, which was unfortunately to his disadvantage on occasions. He did not know his men well but more importantly their condition and abilities. Should the war not have ended in November of 1918 it is debatable whether the "machine" would have been capable of further work. Currie was similarly hampered by a lack of ability to relate to his soldiers but as an organiser and planner his competence has been widely recognised. Currie's testimony is that of an innovator and developer of doctrine earning himself and that of the Canadian Corps great respect in the eyes of the Australians and very mixed feelings on behalf of the British. "Sulphurous language and eccentric to his staff" are some of the traits alluded to by Griffith.²⁹ Russell's command was to be limited to the New Zealand Division and as such was not granted the freedoms of action available to a corps commander experienced by Monash and Currie. It should be noted though that he was offered a British corps by Haig, but declined the offer possibly for reasons of the relative size of the New Zealand Division at the time.³⁰ Russell was very much a soldier's soldier who demanded a lot of his men but knew well their capabilities. "He demonstrated his mastery at the set piece attack and the battles of 1918 showed his mastery of the advance and encounter battle at divisional level."³¹

In simple answer to the original question posed it would be Currie who demonstrates the finer command skills at corps level and the human touch of Russell that makes him the better divisional commander.

This is a personal view, but one I am sure will be debated for many more years to come.

NOTES

1. Bean, *Official History*, Vol.5, p.177.
2. Monash, *The Australian Victories in France in 1918*.
3. Wise, "Australian and Canadians at Amiens," *Defining 1918 Victory*, 1988, pp.5-7.
4. Pedersen, "General Sir John Monash: Corps Commander on the Western Front," *The Commanders*, 1985, pp.85, 89, 90, 98, 99, 101, 102, 122.
5. Smithers, *Sir John Monash*, 1973, pp.255-267.
6. Pugsley, *Russell, Andrew Hamilton 1868-1960. - Soldier, Sheep Farmer*, pp.4, 5, 7, 8.
7. Pugsley, "The New Zealand Division at Passchendaele," in Peter Liddle, *Passchendaele in Perspective* p.275.
8. Pugsley, "Those "Other" Diggers in 1918", *Paper given at the Australian War Memorial History Conference*, 1993, p.3.
9. Russell to brigadiers and Cos dated March 1918, Russell Papers, Russell Family.
10. Hyatt, *General Sir Arthur Currie: A Military Biography*, 1987, pp.50, 109, 110.
11. Rawling, *Surviving Trench Warfare. Technology and the Canadian Corps, 1914-1918*, 1992, p.178.
12. Griffith, *Battle Tactics on the Western Front, The British Army's Art of Attack, 1916-1918*, 1984, pp.92-93.

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Reviews



Books



TRENDS IN AUSTRALIAN DEFENCE: A Resource Survey by Allan Shephard, Australian Defence Studies Centre, Canberra, 1999. 219 pages.

Reviewed by Wing Commander John Steinbach, RAAF

This book is the second edition of a collection of defence statistics gleaned from official sources and presented to illustrate personnel and financial trends in Defence. It is unique and *ipso facto*, invaluable: its alternative is the prospect of wading through the same primary material that Allan Shephard uses and trying to make the data consistent throughout the period under discussion, which is from the mid-seventies onward. I first thought that a compendium would be like reviewing mathematical tables or a *Commonwealth Year Book*; however, by providing a qualitative overview and offering critical explanations for some of the tendencies (albeit some that are arguable), *Trends in Australian Defence* is more than tables and graphs. What I liked about this publication. Chapters 1 and 2 outline the subject, the defence function, in terms of policy and higher organisation respectively, to give a broad background. The treatment of policy changes, particularly since the release of Paul Dibb's 1986 *Review*, is excellent and most useful to anyone needing a succinct introduction to the recent evolution of Australian defence policy and organisation. (I prefer (evolution, to Shephard's term, (metamorphosis, which conjures images of complete transformation rather than the financially induced incessant downsizing which is taking place, sometimes justified by reappraisals of Australia's security needs in changing strategic circumstances). On that score, I cannot help but agree with Shephard that not many original ideas have been brought to the Australian defence debate since 1986, a lack of creativeness that may give rise to the externally driven reviews that cause so much anguish to members of the ADF. The Chapter on Permanent Personnel devotes 15 pages to women, a timely and extremely relevant inclusion, and it is therefore disturbing to read that there is still a large minority of men in the ADF who cannot relate to women as professional equals. Surprisingly, the figures (Table 25) show a significant increase in female enlistment in the RAN (from 7.48 to 27.63 *per cent*) in the three years after the inquiry into

the HMAS *Swan* incident. I look forward to the third edition to see the outcomes of the DER/DRP process over the next five years or so, which brings me to what could be done by way of improving this useful book, namely better book design, some attempt at editing and/or effective proof-reading, quality control and perhaps original analysis of the data, for example, *per capita* expenditure on defence in the region. What I did not like. The book as received had pages 25 and 143 blank. There are no Endnotes for Chapter 8 so I could not find out who suggested that Australia needs to redefine its security objectives in less ambitious terms: ones which can be achieved inside the national means *per cent*, (in any case, I think that is an absurd thing to say). Only 63 Endnotes appear against Chapter 1's 68 superscripts, while those for Chapters 10-12 were lumped together, a convention I had not previously encountered. How did the conclusion end up at the end of Chapter 12? There is considerable repetition: why present a graph of data already tabulated, eg Tables 1 and 2 versus Graphs 1 and 2 and Tables 3 and 4 and Graphs 3 and 4, etc; and is there any need to (talk, detail to the figures presented. I also think that the New Zealand material is best left for an expanded Chapter 6.

There is, in my view, a need for a defence annual, something akin to the problems in Australian Foreign Policy, articles appearing every six months in the *Australian Journal of Politics and History*, which would usefully complement the gamut of official pronouncements and give a yearly overview of Defence happenings by an invited expert. An annual edition of *Trends in Australian Defence* would be the right vehicle for that.

In summary, a book which because of its unique nature, is most useful and which given a chance, should become a standard, something the folks at the Australian Defence Studies Centre might like to think about.

DARWIN BOMBED: by Jack Mulholland, \$20.00 from AMHP 13 Veronica Place LOFTUS 2232, Soft cover, 146 pages, numerous photos and maps.

Reviewed by Flight Lieutenant H.S.Brennan, RFD (Retired)

Previously published under the name *Use The 1916 Ammo First* this amended and corrected edition is a Unit History of 14 Heavy Anti-Aircraft Battery which

consisted entirely of Militia Forces as they were known before and during the 1939–45 War as the Battery of soldiers on the nominal roll had the prefix N before their allotted number which for 95 *per cent* of the troops began with 99 followed by three other digits. This Unit embarked for Darwin on 22 November 1940, I joined the old 6th Light Horse in March 1941 and was given the number N 4165 which leads me to believe Army numbering was a lotto system.

After leaving Sydney the troops moved up the coast via Brisbane and Thursday Island thence to Darwin, the author has described their boat trip in some detail, the main one being the lack of knowledge of the Northern area of the tropics to most of the troops as not many had ventured past Brisbane. Camp facilities at Darwin were primitive and some of the Unit were under canvas, others in tin sheds, luckily the climate did not require heating or hot water as none was available.

Just to digress for a moment, I can remember our Troop Leader in 1st Armoured Division AIF who had been in the 6th Division Middle East often said that conditions in Western Australia while on garrison duty were worse than he had experienced overseas, however back to the story.

On reading Jack Mulholland's account of service in the Darwin area prior to the initial raid by the Japanese was one of largely boredom and repetition of training plus the local civilian population did not seem to worry, until the Japanese raid on 19 February 1942 brought home to those civilians still living in Darwin the shock of war. For their part the 14th. Battery did what they could in a very military manner conducted themselves very well. The author's comments throughout the book dispel the rumours of panic which was supposed to have taken place, it is hard at this point in time to realise just what happened to the civilian population and the Army Units which had been in the area for a long time with only training to keep them occupied and the author's comments on remarks made by politicians who were not in the area should be noted.

The book contains a dedication, acknowledgments, contents, list of maps and photographs, an introduction, a foreword and a glossary of abbreviations. The style of writing lends itself to anyone interested in the value of the Army Units who were compelled by the Government of the day to remain in Australia on garrison duties. As we said when in the Armoured Division "we went where we were sent, not where we wanted".

NEVILLE HOWSE: Australia's First Victoria Cross Winner, by Michael B Tyquin. Published by Oxford University Press, Melbourne. 212pp including maps, appendix, notes bibliography and index.

Reviewed by Lieutenant Colonel Derek Roylance (Retired)

On 24 July 1900, during the Boer War, Captain Neville Reginald Howse, a member of the NSW Army Medical Corps, entered Australian military history by becoming the first member of an Australian unit to be awarded the Victoria Cross.

At Vredefort in the Orange Free State, seeing a young trumpeter slump from his horse with what appeared to be a stomach wound, he galloped forward and, under fire, treated the man. His own horse was shot and Howse carried the wounded man to safety. Later he said he had performed this tremendous deed of valour while suffering from temporary insanity!

This book is the latest in the Australian Army History Series, and it is appropriate that it be published as we mark the 100th anniversary of the Boer War, and the centenary of Australia's first VC is just a few months away.

Howse has not figured prominently in the many books written about Australia's role in the wars of the 20th century, nor the chronicling of its political life. Tyquin's book fills that void.

Howse was a remarkable man. He migrated to Australia in 1889 after he had been forced to resign a medical post in England. He was advised to travel to Australia – no doubt because of the milder climate. Indeed his entry to his adopted country was inauspicious. He was carried from the ship on a stretcher at Wingham, near Taree in NSW.

Restored to vigour from what was described as an unspecified chest complaint he took up practice in Taree, later moving to Orange, where he became a prominent figure in the life of the town and district.

His health was obviously a problem. At the end of his second tour of duty in the Boer War, cut short because the war ended soon after his arrival, he went to England, apparently for health reasons, before returning to Australia. Again, during World War I, while serving as Surgeon General to the AIF, it is recorded that he suffered from heart problems.

Nevertheless, despite these problems the picture painted of Howse was that of a man with an intense zest and enthusiasm for whatever he undertook, particularly where the medical health of Australian soldiers was concerned.

He played no small part in the formation and organisation of the embryonic Australian Army Medical Corps (now the RAAMC), and it is for this, perhaps more than his "temporary act of insanity" for which he won his VC – the only Australian Army medical officer to be so honoured – that he deserves his place in our military history.

It was General Sir Brudenell White who described Howse's achievements at the landing at ANZAC as invaluable and indispensable.

There is no doubt that the plans for evacuating wounded from ANZAC were almost non-existent and Brudenell White wrote: "... for a time the beach at Anzac looked like a holocaust. Then it was that Howse became a giant. He took the whole matter into his own hands, giving and disregarding orders in a manner most shocking – but strangely and rapidly productive of results... April 25th, 1915 was a black day on the beach but it produced many heroes. Could they now be asked to name the greatest, the palm would go to Neville Howse."

One of the greatest battles Howse fought during the 1914–18 was against the authorities at home who kept sending out reinforcements for the AIF that were not fit for military service. One group that arrived in 1917 contained many older men and boys who were either "senile or physically immature." Apart from their unfitness for active service Howse regarded their recruitment and sending across the world, only to be turned round and sent straight back home, a waste of public money.

After the war the then Sir Neville Howse entered politics and at one time held three ministerial portfolios, health, repatriation and Home and Territories. He also represented the Department of Defence in the House of Representatives and was Cabinet Secretary.

All this continues the picture of a man, in failing health and yet blessed with boundless energy.

He lost his seat of Calare in the 1929 election with the victory of the Scullin Government.

Howse died during a visit to England on 19 September 1930 and was buried in London's Kensal Green Cemetery next to his father.

Tarquin's book is not easy to read, but it's nevertheless worth the effort to fill in the unacceptable void previously caused by the lack of writing about a man who earned his place in Australia's military history, for more than just an act of "temporary insanity".

This book is not any easy read. It is, nevertheless worth the effort because it puts on public record, however belatedly, the full value of Howse's contribution to our military heritage.

WORDS OF WAR: by Geoff Howe. Published by Geoff Howe, 2F Stiles St, Croydon Park, NSW 2133. Price \$20 plus \$4.50 postage and handling.

"SHELLS" burst all round, and pom-pom burst at my elbow, and instead of killing me as it should have done, simply covered me with dust."

A private in the NSW Mounted Infantry was writing to a friend in Sydney from Kimberely during the early months of the South African War.

A new book, *Words of War*, by local historian Geoff Howe, chronicles letters and interviews from more than 40 Australian soldiers who fought in the first war of the 20th century.

The 124 page illustrated book includes material on Fighting Charlie Cox, the controversial NSW Lancers officer who commanded the first Australian detachment to land in South Africa and later led the 1st Light Horse Brigade in WWI.

Also featured is Lieutenant Russell Watson who took the surrender at Pretoria and later took part in the capture of German New Guinea in 1914.

Units mentioned include the Lancers, the Mounted Infantry, the NSW A Battery, the contingents raised in South Africa.

The book has been published to coincide with the centenary of the outbreak of the war – Australia's first major military commitment.

The book has been supported by the Federal Department of Veteran Affairs under the *Their Service – Our Heritage* program. Burwood, NSW RSL Sub-Branch, has also supported it.

BORNEO: Australia's Proud but Tragic Heritage by Kevin Smith, Published by Kevin R Smith, Armidale NSW, 1999, paperback and illustrated, 402 pages.

Reviewed by A Argent

On 8 July 1942 B Force of 144 officers and 1351 NCOs and men of the AIF left Changi in Singapore for Sandakan in what was then British North Borneo. Eight months later another group, E Force of 19 officers and 484 NCOs and men, left for the same destination. When the war ended in August 1945, 89 *per cent* of them were dead, victims of Japanese brutality.

This book not only details the story of Australians at Sandakan to August 1945 and the death marches to Ranau 160 miles (255 km) to the west and of the six sole survivors but also tells of the eight Australians who escaped to the Philippines from Berhala Island in Sandakan Bay; the resistance network around Sandakan and the heroism of an Australian local doctor, Dr J Taylor and such officers as Captain L Matthews, 8th Division Signals; the Python and Agas operations which were small parties inserted by submarine or parachute into Borneo from October 1943 onwards and *Kingfisher*.

Kingfisher was a plan to drop the Australian Parachute Battalion to rescue the prisoners in Sandakan and even after more than 50 years the missed opportunities make sad reading.

The Australian and, later the British, POWs were sent to Sandakan to build an airfield, a little more than two miles from the compound. It was cruel work and the construction was never fully completed due to the magnitude of the task and the attention of the US Army Air Force. Up to May 1945 about 745 Australians had died in the Sandakan compound. Following the invasion of the Philippines in October 1944 the Japanese feared similar landings in Borneo so began moving troops from the east to the west coast. The POWs of Sandakan were part of this movement. The first group of the first march to Ranau left on 29 January 1945 and the remaining eight groups left on successive days. Of the 470 men (350 Australians, 120 British) who left Sandakan, only 203 reached Ranau. The second march began on 29 May 1945. 536 (439 Australians, 97 British) left, 183 reached Ranau. The Japanese then torched the compound leaving the 288 remaining POWs without food or shelter. 75 of these men were detailed by the Japanese to make the third march to Ranau. They left on 9 June. All died or were murdered within a few days of departure. By 15 August 1945 all of the remaining 213 Australians and British had been executed or had died of starvation and disease. It is terrible to read that US Navy PT boats had been coming to the Sandakan wharf since 10 June and that the crews had no idea what was going on only a few miles inland.

The author makes a strong case that the tragic loss of lives could have been avoided had *Kingfisher* gone ahead. The civil and military authorities in Australia knew of the plight of the POWs in Sandakan through the US Army guerrillas in the Philippines and through three of the Australians who had escaped from Berhala Island in June 1943, one of whom was the only successful escaper from the Sandakan compound and

who carried a letter from a POW Member of Parliament addressed to the Prime Minister and Minister for the Army. The three reached Darwin by US submarine on 11 March 1944. There were also reports from the Python and Agas (Malay for sandfly) parties of Z Special. The Japanese were weak on the ground and had no air support. There were suitable drop zones close to the compound, including the damaged Sandakan airfield. MacArthur and Blamey approved of the project. *Kingfisher* was not mounted because of the lethargy of the Services Reconnaissance Department and their reports of 4 April 1945, "All signs indicate an enemy evacuation of Sandakan" and on 21 May, "There are no POWs left in Sandakan." (There were about 1000 Australians and British POWs still in Sandakan, as the second march to Ranau had not yet left.) The author aptly sums it up, "Our POWs were not abandoned so much in a callous manner as in a careless manner." Of the eight officers and 1775 men at Sandakan on 31 October 1943, only six were to survive.

The author, a retired senior lecturer at the University of NSW, Armidale, has widely researched his subject, has visited Borneo three times and plans another visit this year. For the reader it has all been well worthwhile. In the epilogue he urges Australians to think of Sandakan and Ranau as we do of Gallipoli, France and Flanders and Kokoda.

I have long had an interest in the story of Sandakan. A classmate's father commanded B Force; post-war, I served with one of the only six survivors and gained an inkling of what happened and why and how he survived. A fellow Legatee was in Z Special and led three operations in the North Borneo area, all up and back by Submarine. In 1965 when serving in a battalion in Sarawak I occasionally went to West Brigade in Kuching and drove past the area where the Lintang POW compound was. Initially, it held officers of field rank and lower and also a few Australian soldiers, a number of British and Dutch soldiers and European civilians including children. Most of the officers at Sandakan were transferred without warning to Lintang on 27 October 1943 as the Japanese were fearful of an uprising following their discovery of the underground network. This left only eight Australian officers for their 1775 men at Sandakan – one artillery, one infantry, one unallotted, three doctors, and two chaplains. All were to perish.

Videos

THE LAST GOD-KING: The Lives and Times of Cambodia's Sihanouk, by James Gerrand. Rated M for 15+ Mature audience only. War footage. \$49.95, Film Australia.

Reviewed by Lieutenant Colonel Noel Sproles (RL)

This is a 118 minute video in two parts of equal length telling the story of His Majesty King Norodom Sihanouk Varman of Cambodia. It describes his life from when he was a boy until *circa* 1996. Images from various stages in his life show him as a young boy before he went to school in Vietnam through to recent times when he re-assumed the throne as King. It shows him when he was initially appointed King by the Vichy French Government in 1941 and during the period in the 1950s when he orchestrated a non-violent campaign against the French for Cambodia's independence. There are, of course, more recent images of the visits with the Chinese Communist leaders, of his time of exile in China and North Korea, of the Pol Pot era, and of the war in Vietnam. He is portrayed as an astute politician with a wry sense of humour dedicated to the independence of Cambodia. Whether he is a democrat or an absolute monarch at heart is a question which, like the consummate politician he is, he adroitly avoids. Parallelling the chronicle of his life is the history of modern Cambodia with the conflicts and suffering experienced by the ordinary Cambodian.

The story is told by means of interviews with the king and various observers interspersed with scenes from around Cambodia, particularly Angkor and its temples. These images vividly portray the result of the turmoil in Cambodia since the 1970s with the occasional graphic scene adding emphasis, as if this was needed. There are not many interviews with the other major players, such as Hun Sen, but brief descriptions of their path to power and political affiliations are provided. It is sobering to realise the connections that many members of the current leadership have had, or still have, with the Khmer Rouge. Some impressions which remain after viewing the video are of the loyalty of the Communist Chinese to Sihanouk; his single-minded attitude to Cambodian sovereignty; his disclaiming of knowledge at the time of Pol Pot's "Killing Fields"; and the almost feudal personal devotion he receives from the populace in general.

The first part of the video is relatively fast moving and describes events from Sihanouk's early life until the 1970s. It contains interesting archival footage and explains the sequence of events succinctly. The second

part is slower and more analytical as it discusses the present situation in Cambodia, questions Sihanouk's culpability for the Pol Pot years, queries his relevance to modern Cambodia and the future of the monarchy.

This video is intended to be informative, as against entertaining. It would be suitable for anyone desiring to know the sequence of events in recent Cambodian history and the part played by particular players. The extensive footage of interviews, speeches, and commentary by Sihanouk himself should also provide a useful primary source for serious researchers.

IN SEARCH OF THE TIGER: The Vietnam War 1968. Produced by Lieutenant Colonel Don Keyes. Directed by Andrew Williams, Headquarters Training Command, 1996, \$19.95, Film Australia.

Reviewed by Major Jim Truscott

This 43-minute video is a thoroughly informative historical documentary of Operation *Coburg*, the 1st Australian Task Force's role during the Tet Offensive in early 1968. It combines live footage with interviews of a cross section of the Australians involved, from the Task Force Commander down to private soldier. All together it provides a succinct understanding of the many actions that occurred over a dispersed area in just a few days. Although all of my 25 years of service have been in the post-Vietnam Australian Army, I found it particularly enjoyable as I could personally relate to many of the identities that were interviewed – one still serving. Not all viewers will share this experience, and Training Command are to be commended for documenting this important battle in the military history of Australia, New Zealand and Vietnam.

Operation *Coburg* is unique in Australia's involvement in the Vietnam War for two reasons. It occurred just as a third infantry battalion was added to the Task Force's Order of Battle, enabling the Task Force to conduct operations outside of Phuoc Tuy Province at Task Force Level. Indeed the Task Force Headquarters did deploy with two infantry battalions and supporting artillery to block the North Vietnamese Army's planned attacks on allied headquarter complexes at Bien Hoa and Long Binh, both about 50 kilometres from the Task Force base at Nui Dat. At the same time, the third infantry battalion with Armoured Personnel Carriers was committed to actions in clearing enemy from villages inside Phuoc Tuy. The operation was also in marked contrast to previous Task Force tactics that focussed on search and clear, and cordon and search missions.

The allies had accurate intelligence enabling the blocking force to be inserted just in time, and the video focuses on subsequent actions at platoon and company level. The interviews record how North Vietnamese units moved through the blocking force to conduct their attacks on Bien Hoa and Long Binh in the last week of January 1968, and their withdrawal back through the blocking force in the first week of February. Throughout this period platoons and companies were engaged in ambushes, and attacks to clear defended positions with the potential for significant Australian casualties. The documentary records the pivotal role performed by close-in fire support when infantry are clearing defended positions, and the importance of infantry and armoured cooperation in clearing villages.

My criticism is minor. The statements of comparative body counts were important to the Task Force at the time because of Australia's small role in the overall Vietnam Conflict, but they should have been stated from the perspective of the overall Tet Offensive that was a moral victory to North Vietnam. The video could have been better balanced by interviewing one or two NVA battle commanders or by portraying enemy footage in slightly more detail. None the less the video has been released for general exhibition, and I recommend it to military and civilian viewers alike.

THE FORGOTTEN FORCE: Film Australia, \$24.95.

Reviewed by JA Cox

The video *The Forgotten Force* is an impressive reminder of the impact of World War II on post-war Japan. The video tells of the devastated country that met the arriving Australian men and women of the British Commonwealth Occupation Force (BCOF), arguably Australia's first peace keeping force by its nature.

While the book of the same title is a detailed historic account, providing detail and fact, the video uses rare footage to convey the suffering and enormous damage inflicted on Japan. The images of post-atomic Hiroshima are powerful and leave a sense of sorrow at the suffering by that city's people. The image of a baby, not old enough to have been born at the start of the war and not responsible for its cause, having been roasted by the atomic fire-ball is not easily forgotten.

The video uses first person interviews with members of the BCOF and also the Japanese people present at the time. These portrayals re-create the atmosphere and issues relevant at the time, like:

- Was the stated policy of "no fraternisation" consistent with a force which was to support General MacArthur's plans to build a system of democracy in Japan?
- Was democracy possible in a nation that still revered its Emperor?
- Why is the high rate of cancer in returned BCOF members who served in the Hiroshima Prefecture not automatically recognised for military compensation in Australia, when it is by the US for US service personnel serving in the same conditions?

This is the film which helped to have members of the BCOF recognised as performing active service by the Australian Government, and it is highly recommended for viewing by anyone interested in the history of Australia's overseas defence activities.

THE BATTLE OF MARYANG SAN: Presenter Steve Bisley, Film Australia, \$19.95.

Reviewed by Bruce Turner

The introduction and cover notes to this enthralling and impressive video about an important battle of the Korean War says (quote) "This is a story of courage, discipline and imaginative application of the Principles of War." It is certainly that and much more.

The video describes and depicts in epic detail the courage and effectiveness of the Third Battalion Royal Australian Regiment in a classic infantry action in most difficult terrain during the Korean War. It is a fine account of a gallant offensive action. During this operation towards the end of 1950, Third Battalion Royal Australian Regiment took on numerically superior Chinese units and bravely carried their assaults to a successful conclusion. Well written and directed by Andrew Williams the film is eloquently presented in graphic detail by Steve Bisley. The courage and determination of Australian soldiers, led by well trained Officers and NCOs show what such units can achieve.

Other features of the film are the air cover provided by the P51s of No 77 Squadron RAAF and as an example of traditional ANZAC cooperation, the fine artillery support by No 16 Field Regiment, Royal New Zealand Artillery.

I strongly recommend this video to all interested in Australia's military history. It would, I feel be an inspiration to all, especially to young Officers and NCOs. Well done.