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Letters to the Editor

The Development of Leadership Theory

Dear Sir,

Regarding Captain Mike Barry's article pertaining to the development of leadership theory, it is such a shame that he restricted his research and theorist applications to those from the United States from some time ago.

We are very fortunate here in Australia to have LIVING one of the World's greatest Industrial and Behavioural Psychologists, yet like so many other Australian products, his work is widely acclaimed beyond our shores but given little recognition within, as typified in Captain Barry's article. The man I refer to is Wilf Jarvis who has developed a model of leadership called "Four Quadrant Leadership".

In Captain Barry's article, he raises the many problems and complexities of each of the theories. Using Wilf Jarvis's model, there are no such complexities, it is a simple model, which asks just three questions. However, it is not so much the technique that is used but the development of relationships between leader and colleague (this term is used deliberately as opposed to subordinate, but that is an entirely different debate).

The development of the relationship, which Captain Barry hints at on several occasions, is the leader's ability to empathise with his/her colleague. If the leader can empathise with the colleague, then the leader will know how efficient the colleague is at doing the task, how they feel about doing the task and how they feel at that time.

In the illustrations that Captain Barry provides, there are some serious flaws in assuming that given situation (a) that autocratic leadership is the only possible leadership style to be used. If this was the case, what would happen if the leader wasn't there? Would the colleagues not know what to do, and therefore fail? History provides us with many fine Australian examples which show that this is not the case! In situation (b), laissez faire is fine, but who organises the situation? Again, history cites many examples where failure occurs if this style of leadership occurs.

I wish Captain Barry success in his academic pursuits but hope that his future research is not just restricted to the American influence. Isn't it about time that the efforts of Australians were recognised within this country, especially when they are so outstanding.

R.H.J. Webb
Lieutenant

Air Power

Dear Sir,

I have enjoyed the considerable literature on Air Power in recent editions. Could I make some observations I hold to be pertinent?

The whole question of air power as addressed so far in the Journal has been absolute, or theoretical if you like, and has taken no account of the size of the RAAF. There are limitations which pose fundamental questions that cannot be ignored. Peter Firkins addressed an important one of them.

History has proven air power can only be totally effective when it is in overwhelming strength or has been directed against a specific target or a series of targets. Against the probability that the RAAF will never enjoy total superiority, our interpretation of air power doctrine must be sensibly qualified. Simply, the RAAF does not have the means to be totally effective, either strategically or tactically. The problem only compounds if it attempts to operate in both mediums simultaneously.

A multitude of questions follow. On that basis what is to be the distribution, the priority, of air effort between the strategic and the tactical? What is to follow if the adversary, from a basis of equivalence or better, chooses to open hostilities by bringing our air asset to battle at some disadvantage? How will the air commander redeploy the assets which remain after attrition? What priority could be given to the support of the other services?

There are two points I wish to make, not so much in criticism of air power doctrine, but rather to acknowledge the limitation RAAF capability imposes on doctrine.

The first is that existing national strategy is incomplete because it is too dependent on the RAAF and takes little account of the RAAF's inability to defend all approaches in the vastnesses of the North.
A determined adversary will always get through. The ADF, as currently structured, does not have the balance to properly meet that option.

Secondly, existing ADF doctrine accords the RAAF specific responsibilities for the air defence of the Fleet and the Field Army and for the close air support of the Army. Those services are structured and equipped on the basis of that guarantee; a guarantee which obviously cannot be fulfilled. Norman Ashworth expresses the RAAF view of the issue when he highlights a RAAF dilemma, a choice as to whether air power is best used in the direct support of troops in combat or against the enemy's rear areas. Obviously the doctrine should be re-drafted and the Fleet and Army restructured and equipped on the basis that RAAF support is a bonus and not guaranteed.

The consequences of the doctrinal change would be considerable. I don't know how the Fleet would be affected but would presume the ships would require supplementary air weapons and systems much more substantial than those provided in such an 'ad hoc' way for the Gulf.

I am not much better informed about the Army's need but the bill would be hefty. The existing air defence assets in the Army are far from adequate. The new requirement would demand at least a Rapier battery for each brigade with a scaling of shoulder controlled surface to air missiles for each combat unit. Acquisition radars and an air warning system would now become essential for the Army.

The loss of guaranteed air support creates an enormous gap in the scaling of Combat Support. Attack helicopters armed with air to ground missiles become imperative. The existing close support tank ratio of one regiment for the infantry division (60 tanks for nine battalions) would have to double at least. Each cavalry and APC troop would require at least one cannon or the equivalent. Artillery assets would have to be considerably increased to provide at least one medium battery for each brigade in addition to the field regiment. Each division should be given a battery of heavy or super heavy artillery (8 inch or 240 mm) and also a regiment to Multiple Launched Rockets. Infantry units would all require an increase of direct fire supporting weapons.

I just don't believe the issues are about separate air forces or whether airmen should live in the field. There is a disjunction between ADF doctrine and air power doctrine over air support which puts the RAAF at odds with the other services. The solution would seem to lie in the recognition that the RAAF could seldom guarantee support. The other services should therefore be structured and equipped to redress the inadequacy.

D.M. Butler
Maj. Gen. (Rtd.)

Ground Defence

Dear Sir,

It is very admirable that one finds in Sgt S.J. Brasher RAAF, the author of The RAAF Needs a Regiment Jan/Feb 1992 issue, a very dedicated and professional airman. It is obvious that he has both an extensive knowledge of his own area of skill together with a desire to see his mustering not only survive the impact of the FSR but hopefully, grow into a force to be reckoned with.

Unfortunately, Sgt Brasher knows very little about maintaining aircraft serviceability, particularly under active service conditions. As a member who served in the Republic of South Vietnam under active service conditions I can assure Sgt Brasher that technical mustering's would be hard pressed to find a spare hour in which to take up arms. The Sgt does not tell us who would rectify faults, carry out repairs, replenish and rearm the aircraft while the technicians are all out looking for the enemy. I would contend that all technicians are technicians because that is what they wanted to become. Had they wished to become a soldier they would have joined the ARA.

Sgt Brasher is quite correct when he says that the present weapons skill level within the technical trades is low. However, I would contend it is adequate even under the active service conditions that I have experienced. As for his comment that outside the ADG mustering, RAAF NCO's are not required to be leaders, the Sgt now loses his credibility. The comment does not even justify an answer.

Finally, although Sgt Brasher puts forward a logical and well presented argument for the formation of a RAAF Regiment, he has I fear, a snowballs chance in hell of ever seeing it come to fruition.

D.E. Hadfield
Flight Sergeant

Ground Defence

Dear Sir,

I read Sgt Brasher's article 'The RAAF Needs a Regiment' (published in ADFJ No. 92, January/
LETTERS TO THE EDITOR

February 1992) with much interest as no doubt a lot of RAAF non-commissioned officers would have. The author's comments concerning the justification of a RAAF ground defence unit based on the Royal Air Force Regiment and his personal perceptions on the tactical training and competency of non-airfield defence mustering NCO's should be constructively debated in light of the current ADF re-structure review.

It should be recognised that the attempted alliance of the RAAF airfield defence units with the RAF Regiment is probably very unrealistic as the RAF Regiment is a very large and complex ground combat unit with fifteen operational squadrons encompassing rifle, airborne, commando assault and light armoured vehicle units operating 'Scorpion' AFVs and high-tech anti-aircraft artillery and missile systems.

The above organisation is entirely justifiable given the RAF's large and diverse aircraft inventory and its expected area of operations in Western Europe which has culminated in a RAF ground defence force trained to handle very high density attacks under chemical, biological and sustained enemy ground assaults.

Given that the ADF is presently structured to meet low-level insurgency operations, is there a need to equip the RAAF with expensive and complex ground combat weapons that would require increased technical and manpower support from an already lean reserve of operational resources?

The RAAF ADG force has been developed as a credible, largely self-reliant force and the procurement of the type of equipment that would be required to equip an RAAF 'RAF Regiment clone' would need an increased level of technical reliancy that could require the posting of technical trades staff into an airfield defence squadron. This would erode the efficiency of the AFDS by employing the need to deploy an extended support line for its operations, similar to the technical support required of a flying squadron. It is doubted that the RAAF can support such an expanded ground defence unit that would conform to a 'pocket army' concept.

Sgt Brasher's comment concerning his opinion of the training of RAAF personnel in ground combat is slightly biased towards the perceived comparison of specialists in the ADG mustering and the staff employed in technical and support musterrings. Recent events have shown that non-ground defence personnel can be trained to carry out required tactical skills to defend operational airfields in a low to medium threat environment and I have seen first-hand how efficiently 'clerks and technicians' can absorb ground defence skills when their life could be put on the line.

In reply to his perception that the ADG NCO cadre is the only credible force capable of leading ground defence units in the RAAF is inaccurate as all RAAF Police graduates have been trained as ground defence tactical section leaders since 1988, indeed by ADG NCO's and I have no doubt that the vast majority of RAAFPOL corporals could efficiently lead a section with the training absorbed under the current RAAFPOL combat training curriculum.

I was trained in the finer points of in-country and urban warfare as part of 2/89 RAAFPOL Combat Course and I have vivid memories of myself and my course-mates being orientated towards tactical thinking in the true infantry sense by the continuous battle tactics and section level exercises.

The RAAF trains its 'pilots and techos' with the ground defence skills they require to ensure their safety in an active environment and all RAAF personnel are trained to a realistic level of competency. The ADG's are the specialists and the RAAF has them as a dedicated ground defence unit but in an emergency there is a reserve of competent people who can augment this efficient little force.

W.L. Wans tall
Corporal, RAAF Police

Hell of a Mine

Dear Sir,

Wing Commander A.J. Curr, RAAF, is wrong when he states (p.32, ADFJ '91) that Admiral Sir Tom 'Phillips' first experience of flying his flag at sea was ended by the aircraft whose value against capital ships he had so long denied.'

Admiral Phillips flew his flag at sea from 10th January, 1939 to 18th May, 1939, in the light cruiser HMS Aurora, as Rear Admiral (D) Commanding Home Fleet Destroyer Flotillas.

Whilst Wing Commander Curr may argue that this point does not detract from the thrust of his article, there are other facts that do so.

Whilst there is no question that the loss of Prince of Wales and Repulse was a disaster, it should be emphasised that much of the dispute over the effectiveness of airpower between the Royal Navy and Royal Air Force was over conventional (i.e. high level) bombing. However, no major British warship was lost to this cause during World War II.
The Prince of Wales and Repulse were sunk not by bombs but by aerially launched torpedoes. During World War II the submarine launched torpedo proved the most effective weapon against major British warships. Submarines sank 18 major warships against airpower's 10. Except for one sunk by a glider bomb, all those sunk by bombs were sunk by dive bombers — not by the level bombers advocated by the RAF.

In this respect, the Royal Air Force got it wrong. In 1939, the RAF had no dive bomber in service nor, so far as I can ascertain, was one planned, nor did one enter RAF service during World War II. Thus the RAF neglected what proved to be a very effective form of airpower. In this neglect, the RAF left the British Army badly disadvantaged in their 1940 operations in France and Norway.

It should be noted that the first major warship sunk by airpower during World War II was sunk not by Germany, not by the RAF, not by the Japanese Navy but by the Royal Navy's Fleet Air Arm — whose dive bombers (sic) sank the German cruiser Königberg in April 1940.

Further, a study of secondary armaments of major British warships designed from 1935-39 demonstrates clearly that the British Admiralty were prepared to devote a substantial proportion of ships' armaments to AAW. The King George V class battleships, Illustrious class carriers and Town and Fiji class cruisers demonstrate the point. The AAW armament modifications made to the modernised Queen Elizabeth class battleships, battle cruiser Renown, and County, Leander and Arethusa class cruisers all reinforce the point.

Nevertheless, the weapons chosen proved inappropriate for defence against a type of air attack the RAF failed to forecast. The money would have been better spent on other forms of AAW.

All these facts detract from Wing Commander Curr's conclusion that 'nothing would make most (British) naval officers understand the air threat to their beloved battlewagons . . .'

The tactics and weapons of World War II are irrelevant to the ADF today. However, there is one major lesson which is very relevant to us in the 1990s. That is the reason the British Navy got the wrong AAW answer in 1939 and the British Army had woefully inadequate air support in 1940.

In the 1920s and 1930s, the three British Services devoted much energy to disputing the need for an independent air force and arguing about the allocation of resources, instead of considering how each could best help the other win the war they all knew would come.

The ADF starts the 1990s comparatively well placed. There is a CDF, supported by an HQADF. The British had no such organisation in the 1930s. The AAW training given by the RAAF to the RAN Task Force enroute to the Persian Gulf is one of a number of examples of what the ADF has done.

However . . .

Although I hold no brief on Admiral Phillips, I commend to Wing Commander Curr The Fighting Admirals, by Martin Stephen (published by the Naval Institute Press), to provide some balance to a case against an officer who did not live to defend himself against his detractors.

A.W. Grazebrook
Commander, RANR

Safety First

Dear Sir,

Unless my rheumy old eyes deceive me yet again, I fear that the Lance-Corporal pictured on page 11 of the Jan/Feb issue of ADFJ No 92, 'an exercise trained soldier', has put himself at risk from traumatic amputation of the ring finger of his left hand by wearing his wedding ring during training.

Perhaps it is just a posed photo, but if someone doesn't warn the young man, he may well wear that ring again on exercises or operations. In 1967, one of my diggers 'ring-barked' his finger in Vietnam — he was extremely lucky not to lose it — when he jumped from a truck. In 1968 or 1969, Field Operational Research Section made a file study of accidental injuries to troops in Vietnam, and from memory eight soldiers had suffered 'traumatic amputation of the ring finger', apart from those who had like my soldier severely injured a finger by having a ring snagged on a projection. Truck tailgates seemed to be a frequent cause of injury.

Please, Corporal, wear the ring on your ID tags, not on your finger. I just hope I'm not too late with the warning.

E.S. Holt
Lieutenant Colonel (Rtd)
The Clausewitz Posthumous Analysis of the Gulf War

By Major Russell W. Glenn, US Army

The following is the full transcript of Carl von Clausewitz's recent analysis of the decision to halt the 1991 Persian Gulf War on 28 February. The forum for the presentation was the annual Warriors' Symposium, Valhalla.

My thanks to Boney for that fine introduction. He has mellowed over the last 170 years (polite laughter). It is no small honour to speak to you veterans of the ages. My subject tonight is the year's war in southwest Asia. It was a potent demonstration of many concepts developed in my work On War, a work for which I never received a pfennig in royalties (laughter). Certainly the subordination of war to political objectives was evident, as were the notions of centre of gravity and friction. However, it is not the obvious that I will discuss tonight. Ours is a topic of considerable contemporary earthly debate: the coalition decision to terminate the war after four days of fighting.

Fundamental to this analysis are the concepts of culminating point and end state. The former appeared in On War; the latter is just beginning to work its way into western military doctrines. Both are key to campaign planning and execution. I think you too will conclude that the coalition leadership's decision to force a ceasefire on the morning of February 28, 1991 shows the wisdom of good analysis. It reflects the linkage of the desired end state and the culminating point of victory essential to the successful completion of a war.

There are actually three types of culminating points. The culminating point of the defence is of little interest today as our perspective is that of the attacker. There is the culminating point of the attack, "the point where [an attack's] strength is just enough to maintain a defence and wait for peace." Logistical requirements stressed coalition support systems, but the combined and joint force was far from its culminating point of the attack at 0800 on February 28th. Remember that strength in war is relative, and although the coalition's military might had been weakened by its attack in absolute terms, it gained a great deal in the relative sense. There is little doubt that the coalition had the ability to sustain further air and ground attacks against the Iraqi military. Therefore I do not find this second culminating point worthy of your attention tonight. That leads us to the culminating point of victory. I might note that at the time of my death I was still working on the full development of this concept. Were I still alive today I would nearly have it straight (laugh and applause). Let me give you my pre-demise thoughts and then elucidate a bit. I will quote extensively, but have selected only the most pertinent passages. From Chapter Twenty-Two of Book Seven:

Often even victory has a culminating point. The matter is particularly important in military theory and forms the keystone for most plans of campaign. Every reduction in strength on one side can be considered as an increase on the other. One cause of reduced strength for an invading army is the change in political alignments. If the defeated state is smaller, protectors will appear much sooner if its very existence is threatened. Others who may have helped to endanger it will detach themselves if they believe that the success is becoming too great.

This culminating point in victory is bound to recur in every future war in which the destruction of the enemy cannot be the military aim, and this will presumably be true of most wars. If one were to go beyond that point, it would not merely be a useless effort which could not add to success. It would in fact be a damaging one which would lead to a reaction, and experience goes to show that such reactions usually have completely disproportionate effects.

It is at the strategic level, strategic in the contemporary sense, that we view the culminating point of victory in the war against Iraq. Coalition nations agreed to join forces to liberate Kuwait. They did not agree to the total destruction of the Iraqi armed forces, nor to the removal of its leader from power. Conducting military operations to pursue these latter goals would conjecturally have surpassed the culminating point of victory and threatened coalition cohesion.

Let me now introduce the concept of "end state" to our analysis. For our purposes, the end state is "the situation as it will exist at the conclusion of operations." End states can be favourable or
otherwise. The objective is to conduct operations to achieve a favourable end state. Operations must be planned and conducted accordingly.

End states vary at different levels of war and command. At the strategic level, the coalition political leadership sought an end state with Kuwait liberated and Iraq strategically on the defensive. Coalition military leaders at the operational level linked their end state conditions to those at the strategic level. They sought an end state in which Kuwait was free of enemy forces and the Iraqi military was incapable of retaking that nation. Corps and division commanders in turn sought supporting favourable end states through their tactical operations. End states at various levels will differ, but seniors must ensure their end states are achievable with the means available to subordinates.

Let us now consider the situation had the coalition not stopped on the morning of February 28th. Assume the end state sought by political leaders at the strategic level was the complete destruction of the Iraqi military and establishment of regional peace. A supporting operational level end state requires the destruction of all Iraqi armoured and mechanised forces. Was this achievable? Although coalition forces performed a most admirable envelopment, the distance that Iraqi forces had to move to ‘escape’ into Al Basrah was much less than that necessary for coalition forces to catch and destroy them.

Al Basrah seems the logical location into which Iraq’s forces would flee. Highway 8 had been cut by the XVIII Airborne Corps. The routes north across Lake Hammer or adjacent to the Iranian border are too few in number and too restricted to allow rapid movement of the heavy forces Iraq still had moving north (especially in view of coalition air supremacy). Escape into Iran was not a viable alternative. The destruction required would have been difficult to achieve short of Al Basrah; it would therefore have to occur in the city.

Fighting in urban areas is generally characterised by high casualty rates, rates which coalition political leadership and citizens may have been unwilling to accept. The coalition would have been restrained in its use of its overwhelming firepower by the need to minimise civilian casualties. Now remember what happened in Al Basrah after the declaration of a temporary ceasefire; the citizens of Al Basrah rose against the Baghdad dictatorship. With coalition forces just outside their city, similar uprisings would have almost been guaranteed. Iraqi forces would have been slaughtering the citizens of Al Basrah.

The coalition would have had to either attack with the previously-noted restraints, and accept the almost guaranteed exponential increase in friendly casualties, or wait outside the city while its citizens were butchered by the Iraqi army. Considering the situation, it is arguable that the coalition has already passed the culminating point of victory, and remember, the favourable end state had a second component. The coalition must subsequently ensure peace in the region, a peace made difficult in the power vacuum left by the absence of Iraq’s army. The resultant instability in the region could have ranged well beyond the borders of a single nation.

The coalition powers were aware of these dangers. Military action beyond the 28th of February may have precipitated the dissolution of the alliance. Both a decision to attack into Al Basrah or one leaving coalition forces outside the city would have been politically unpopular. Complete destruction of Iraq’s military could have expanded the regional conflict beyond Kuwait and southeast Iraq. The benefits of victory would have quickly been lost were its culminating point surpassed. The coalition did not go beyond that point where further action “would not merely be a useless effort [but] in fact be a damaging one.” Coalition leaders established an agreed upon favourable end state. They recognised the limitations of coalition warfare and its relationship to the culminating point of victory. They linked these two concepts and achieved a brilliant victory.

NOTES

2. Clausewitz, p.566-570. Emphasis in all quotations are in the original.
3. The concept of end state is applicable to any of the three levels of war. Application is not limited to military conflict. It is arguable that the United States used defence spending during the Reagan administrations to defeat the military might of the Soviet Union. If that is the case, the current situation appears to signal what would be movement toward a favourable end state as sought by U.S. strategic leaders in the 1980’s. The related question, however, is whether or not they passed the culminating point of victory in the economic sense in the process.
4. Unless Iran sees the threatened destruction of Iraq’s total heavy force as undesirable. Iran then might have changed its effectively neutral position and permitted Iraqi ground forces to enter its territory. This would be an example of what Clausewitz meant by nations detaching themselves from political alignments when the existence of another belligerent is threatened.
5. Clausewitz, p.570.
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The Lack of Pan-Arabism as a Counter to Saddam’s Terrorism Weapon

By Major G. Wahlert, RACMP

Oh Arabs, oh Muslims and faithful everywhere, this is your day to rise and defend Mecca which is captured by the spears of the Americans and the Zionists . . . keep the foreigner away from your holy shrines . . . revolt against the oil emirs who accept to push Arab women into whoredom.

President Saddam Hussein’s call for a *jihad*.

**Introduction**

Baghdad attempted from the beginning to link its occupation of Kuwait with a pan-Arab, Moslem, anti-Israel and pro-Palestinian propaganda campaign, portraying its aim as a radical restructuring of the whole Middle East and as the first stage in justice and a redistribution of wealth to the benefit of the Arab masses as a whole. It was on this claim that Saddam Hussein endeavoured to attract mass popular support for a *jihad* against the West and Israel, who was seen as a puppet of the United States.

The early concern of the Western partners of the Multi-National Force (MNF) was that Saddam’s call for a ‘holy war’ might receive widespread popular support within the region and undermine the coalition, especially with regard to its Arab members. This became particularly relevant after the first Iraqi Scud attack on Israel and the possibility of an Israeli counter-attack. Counter-terrorism planners from the states of the MNF were anxious that the appeal of Saddam’s call might be manifested in a wave of terrorist attacks against Western interests, as was indeed threatened by both Saddam Hussein and the leaders of a number of radical Palestinian terrorist groups.

This article examines why the appeal of Saddam’s call to arms does not appear to have been sufficiently enticing to have moved the major regional terrorist organisations, in particular those that had previously pledged their support to Iraq’s cause, to action. It argues that one of the reasons for their silence was the myth of pan-Arabism: the inability of the Arab-Islamic factor to provide adequate motivation for these groups to act in the face of a pragmatic realisation of the probable consequences of such action.

**The Appeal of Saddam’s Message**

In the mid to late 1960s there was some substance to a claim of Arab solidarity on regional issues. The ship of Pan-Arabism appeared to be sailing in the Middle East with President Nasser of Egypt at the helm. However, since Nasser’s death in 1970 such a degree of unanimity in the Arab world was lost. Various Arab leaders attempted to take Nasser’s place, including Saddam Hussein in the late 1970s, but none of them had the power, the resources or the ability to either govern or manage inter-Arab politics. An indication of the degree of disagreement and division amongst Arab states in the 1980s can be seen in their inability to convene an Arab summit from 1982 to 1987.

Although there were indicators that a consensus was emerging between Arab states and that common strategies were appearing on a range of issues, underlying differences continued to frustrate the emergence of a pan-Arabic spirit. Relations between Iraq and Syria remained stagnant on ideological and political differences, and economic issues between states remained uncompromising.

Yet this is not to deny that the ideal of one Arab nation is not a powerful and enduring one. Saddam showed that he understood this by his use of the language of Arab nationalism. Such messianical rhetoric as quoted at the beginning of this article may have appeared to the Western observer as simple opportunism, but it would be a mistake to underestimate the appeal of the message and the consequent threat to the West. The Iraqi President was deft at tapping resentment and anger: he appealed to the atavistic impulses of resentful Arabs and their sense of deprivation relative to the more prosperous Kuwaitis and Saudis. He also invoked the traditional hatred and mistrust of the West in general, and the United States and Israel in
particular. Additionally, he used religion — ‘keep the foreigner away from your holy shrines’ — and culture — ‘who accept to push Arab women into whoredom’ — as powerful symbols in an attempt to inflame and unite the Arab world.

To many Arabs, Saddam Hussein came to symbolise the revival of Islam as a major political and cultural force in world affairs. His appeal has been described as ‘Saddamism’: the magnetism of ‘a strongman and populist who promises to unite the Arabs, address their problems and confront their enemies.’

Arab Fragmentation

Saddam Hussein’s appeal was largely restricted to the ‘have nots’ in the Arab world. Those living under oppression and in privation were a natural support base for the Iraqi leader; it was predictable that the stateless Palestinians found inspiration in his words, especially after an Iraqi withdrawal from Kuwait was made conditional upon an Israeli withdrawal from the occupied territories. However, he failed to attract the ‘haves’ — those with power and influence who saw it in their vested interest to support the status quo. Consequently, a yawning gap remained between most Arab rulers and the majority of their citizens.

Indeed throughout the crisis and the fighting the Arab world continued to be deeply divided. Egypt, which only a year earlier had joined with Iraq, Jordan and Yemen to form the Arab Co-operation Council, and Syria, the only other Ba’athist state, were among the major contributors to the coalition forces, while Saudi Arabia, the font of Arabism, provided the launching-pad for the liberation of Kuwait. Arab Maghreb countries, whose populations were among the most supportive of Saddam, as well as Jordan and the Palestinians, organised huge demonstrations and engaged in a great deal of anti-American rhetoric, but their support did not go much beyond words. Morocco, meanwhile, had it both ways: its people were the loudest supporters of Saddam and it organised the biggest demonstrations, while 1,200 Moroccan troops were fighting the Iraqis alongside other coalition forces.

Even the bank-rolling of the PLO displays the disparate interests of Middle East states and the difficulties, therefore, of presenting a unified front on even the most fundamental of the alleged ‘Arab objectives’ — the creation of a Palestinian state. James Adams, in his book *The Financing of Terror*, states that:

despite all their rhetoric and public support for the PLO, the Arab nations have never managed to divorce their own personal ambitions sufficiently to donate money to the PLO as a single unit rather than to their own pet groups within it. This has led to the PLO and its leaders having to spend more time trying to hold the different groups together [instead of working at] establishing a new Palestinian state.

Adams goes on to assert that there is a cogent argument that the Arabs have no interest in seeing the PLO establish a state. Many of the Middle East countries have come to rely on the Palestinians to run their industries and hospitals. Indeed, the apparent reluctance of Saudi Arabia and Syria to expel their Palestinian populations, in spite of the early rhetoric after the Gulf War, may be evidence of this.

There was also the risk that an anti-United States position by an Arab state would severely affect its economy and the level of aid from both the West and some of the donor Arab states, such as Saudi Arabia. Jordan had been used by the United States as an example to other Arab countries of the consequences of tilting towards Baghdad. In March 1991 the United States Congress suspended aid to Jordan following King Hussein’s ‘pro-Iraqi and anti-US’ speech the previous month. This included US$56 million not yet disbursed from the 1990 programme and more than US$57 million in allocations for 1991. Similarly, in January the United States cut aid grants to Yemen from US$20 million to just under US$3 million, and was threatening to reduce the following year’s aid by approximately 87 per cent. These actions were seen as a sign of United States’ displeasure at Yemen’s vote on 29 November against UN Security Resolution 678, which authorised the use of force against Iraq.

Meanwhile, a number of Middle East states appear to have been richly rewarded for joining the coalition, or at least remaining neutral. Syria had a loan package of US$205 million unlocked by the European Community Foreign Ministers in February, thereby ending a four year freeze on financial cooperation with the West. Germany offered Damascus DM1,000 million and Japan was reported to have proposed a US$500 million loan package. Additionally, Iran was extended a loan credit for US$250 million from the World Bank, the first since 1978. (This loan was made possible by the United States’ decision to remain neutral on the matter.)
It was this deep division of interest in the Arab world which precluded its unity behind Saddam Hussein and prevented the unwavering support of terrorist organisations. A number of states, for example, had no love for Saddam and were unwilling to risk their security in support of his crusade: he had attempted to subvert Syria's position in Lebanon and had fought a long war against Iran. It was seen to be in the interests of these states to reign-in those terrorist groups over whom they had some control.

Additionally, the appeal of Saddam's message was not sufficient for these groups to ignore the demands of their sponsor states. With the end of the Cold War and the disintegration of the Soviet Union, the support that had been previously available to terrorist organisations from Eastern Block countries, in particular East Germany, also ended. Middle Eastern terrorist groups have consequently become more reliant on state sponsors within their own region.

They would also have been reluctant to back a loser. By mid-January, with no break in the coalition appearing, and the resolve of the United States to force an Iraqi withdrawal from Kuwait solid, it would have been apparent to most terrorist leaders that Iraq would eventually lose any military contest. Even those who may have continued to see an Iraqi victory as possible would have soon lost heart with the stunning speed and success of the allies in the air war. Perhaps more importantly, Baghdad's willingness to accept the Soviet proposals for a negotiated settlement is likely to have been viewed by many in the region as an end of Iraqi resolve; an acceptance that Iraq was already beaten.

It would also appear that the disparate Palestinian terrorist groups were unable to put aside their factionalism and present a unified front of support for Saddam Hussein. The PLO is an umbrella organisation that includes a number of constituent groups and individuals who hold differing and often opposing views on terrorism. Discord within the PLO was most evident after its Chairman, Yassar Arafat, recognised Israel's right to live within secure borders and denounced terrorism. Some of the more radical Palestinian groups, such as the ANO, PLF and PFLP, have condemned Arafat's 'pact with the devil' and may have seen in the Gulf War an opportunity to undermine his authority and thereby further their own more radical aims.

It is an irony that such messianical language came from Saddam Hussein — one of the most thoroughly secularist leaders in the Middle East. In Iraq religion plays little part in the political structure of the Ba'athist regime. Indeed, Ba'athist ideology is fervently secular and rationalistic, contrasting sharply with the fundamentalist Islamic ideology that had been espoused by Khomeini. 'Pan-Arabism is after all an overriding principle, and the party has never demanded conversion to Islam as the price of entry.'

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The Islamic Factor

To add to this irony both Saddam Hussein and Muammar Gaddafi, at a meeting in Baghdad in early 1990, agreed that their greatest threat remained from Islamic fundamentalism. The leader of the Sanusi Muslim sect, Prince Idris al-Sanusi, labelled the call to a *jihad* a 'blasphemy' and pointed out that Saddam and Gaddafi had worked for years against Islam: 'What they are proposing is religiously heretical.' Some Arab states may also have been concerned to prevent emotions about the war impacting on domestic stability. This was certainly the case in the predominantly Muslim countries of Malaysia and Indonesia. The Prime Minister of Malaysia, Mahathir Mohamad, stated his position that this is no *jihad*, or holy war. Saddam Hussein was not waging an Islamic crusade but using Islam to enhance his own power. Indonesia attempted to play down the religious and racial aspects of the conflict mindful that anti-war sentiments could spill over into domestic unrest. Saddam had also earned the distrust of the Shi'a Muslims throughout the region: He had put an end to the independent life of the Shi'a shrine towns of Najaf and Karbala in Iraq. In 1980 Saddam had executed Iraq's most distinguished Shi'a jurist, Ayatollah Mohammed Baqir al-Sadr, as well as many others, and banished hundreds [more to Iran].

This alone would have been suffice to make the Shi'a terrorist groups, such as the Party of the Islamic Call, the Islamic Action Organisation and the Party of God (Hizbollah), question Saddam's motives and loyalty to Islam. Additionally, while calling for a holy war Saddam kept on his Christian Foreign Minister, Tariq Aziz.

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The Israeli Factor

Pan-Arabism and hatred of Israel go together. Indeed hating Israel has helped Arab governments...
keep the spirit of Pan-Arabism alive long after they abandoned serious attempts at unification. Saddam's strategy reflected this. His aim in attacking Israel was to provoke retaliation, thus turning the war into an Arab-Israeli conflict. However, Israel's restraint undermined this strategy and saved many Arab and Islamic countries the embarrassment of fighting alongside Israel against their Moslem brothers or even kept them out of the conflict altogether. Had Saddam succeeded in portraying his aggression as a 'war against the Zionists', then this may have placed intolerable pressure on several of the coalition members resulting in some terrorist groups having a freer hand to act.

Conclusion

The success of Saddam's call for a jihad was ultimately dependent upon some sense of pan-Arabism by the region's states and an acknowledgement that Iraq's actions were in the common good. This was not the realisation. 'Saddamism' did have some appeal, but this appeal was primarily restricted to the 'have nots' of the Arab world, not the Arab leaders. Indeed, Saddam's inability to sell the Gulf War as a pan-Arab, pan-Islamic, anti-Zionist struggle precluded him from undermining the coalition and presenting a unified front against the West.

Consequently the solidarity of the coalition in turn undermined the ability of a number of terrorist groups from responding to Saddam's calls, even if a desire to do so existed. They were either unable or unwilling to cut their ties with their state sponsors and to overcome the discord and factionalism that continued to inhibit their operations. There was also a realisation that for Hussein, pan-Arabism was a vehicle to push secular claims to increased political and economic power. It had little to do with any grassroots movement or ethnic solidarity.

NOTES

2. The quick and severe castigation by both President Bush and Secretary of State Baker of King Hussein of Jordan, for his apparent support of Baghdad, is an indication of their unease about the solidarity of the coalition.

3. For example the Abu Nidal Organisation (ANO), the Popular Liberation Front (PLF) and the Arab Liberation Front (ALF).
4. Pan-Arabism is the notion that there exists some fellowship of all Arab-speaking peoples which is more authentic than the modern states into which the Arabs are divided. This ideology, which underpins both the Iraqi and Syrian regimes, is drawn from Ba'athism—an ideal that advocates the creation of a larger Arab nation as the ultimate expression of freedom and the realisation of an Arab ba'ath, or renaissance.
5. For example, the May 1990 Arab Summit in Baghdad displayed a united Arab front on several important issues, especially the continuing Palestinian problem.
10. Even Kuwait has not totally evicted all Palestinians. The deportations appear to have been selective.
12. Ibid.
13. Ibid., p.38026.
14. Tunisia also had its aid substantially cut — by approximately 76%. This was probably due to Washington's perception of Tunis tilting towards Baghdad. Ibid., p.38026.
15. Ibid., pp.38025 & 37989.
16. Ibid., p.38119.
17. In 1988 Yassar Arafat accepted the UN resolutions 242 & 338 so as to open dialogue with the US.
18. Disagreements between Abu Nidal and Yassar Arafat over the use of violence to achieve political aims are well recorded. For example, in 1974 Nidal attempted to assassinate Arafat. The result of this attempt was the sentencing of Nidal to death by a PLO court and the commencement of a bloody factional fight between Nidal's Black June movement and the PLO's Al Fatah. (See Adams, The Financing of Terror, op. cit., p.61; and Andrew Gowers & Tony Walker, Behind the Myth: Yassar Arafat and the Palestinian Revolution, (W.H. Allen, London, 1990, p.105).
22. Ibid.
24. Ibid.
25. Foreign Affairs, Winter 90/91, p.4.
Technical Mastery — Essential Standards for RAAF Engineering and Maintenance Personnel

By Group Captain E.M. Weller, RAAF

Introduction

As an advanced Air Force, the RAAF operates high technology equipment. To perform effectively in both peace and wartime conditions, aircraft and equipment must be engineered and maintained by personnel proficient in a wide range of technical disciplines. Recent changes in organisations and technical management systems, together with the proposed introduction of contracted and civilianised maintenance, appear to compromise the ability of the RAAF to maintain the necessary levels and disciplines of technical mastery and expertise. In turn, the RAAF may therefore be losing essential core skills and expertise to such an extent that effective engineering and maintenance of weapon systems could be jeopardised. This article outlines a plan to ensure the retention of essential standards of technical mastery expertise in the RAAF.

Definition and Descriptions of Technical Mastery

Technical mastery is defined in DI(AF)TECH 2-5 as the possession of the knowledge and skills needed to exercise control over technical equipment including the management of maintenance of technical equipment at all levels whether that maintenance is performed by RAAF tradesmen or by approved contractors. For a generic technology type, technical mastery can be gained by managing and practising engineering and maintenance at all levels on an item representative of that technology.

More specifically, technical mastery is an inherent level of accumulated knowledge, experience, proficiency, skill and expertise of a given engineering or trade discipline. It provides the basis for confidence that a RAAF engineer or tradesman can assess and evaluate the condition of an item of technical equipment and if necessary, competently plan and undertake corrective action such that the equipment can operate effectively. In terms of technical management, it provides the ability of RAAF engineers to specify equipment either existing in, or being introduced into service. In a broader sense, expertise can be classified as that degree of essential competency required for the regulatory control of RAAF airworthiness standards.

Given the complexity of aircraft and associated equipments, the range of engineering and trade disciplines in which the RAAF must maintain expertise is accordingly very extensive. In particular, and given that the RAAF is a small Air Force, the necessary levels of expertise need to be rationalised and centralised in common functional groups rather than being distributed in small isolated packets. An essential element of expertise is that a hierarchical order of competency and experience exists so that a necessary degree of supervision and counter check can be applied. In turn, this implies that mastery and expertise is built through training, experience and work involvement.

Disciplines of Technical Mastery

The various engineering disciplines and trades in which the RAAF must maintain technical mastery are defined by the nature of the technical equipment which the RAAF operates. Considering the advanced nature and diversity of the technology of such equipment, the range of disciplines is necessarily wide and complex; a complete list can be developed under the following categories:

- weapon or role system knowledge (fighter, strike, maritime, transport, rotary wing, air defence radars, ATC systems, etc)
- professional engineering knowledge (aircraft design, stability/control, aerodynamics, fatigue, materials, EMC, explosives, corrosion)
- equipment sub system (propulsion, weapon control, flight direction, electrical generation/reticulation)
- functional activities (aircraft salvage, recovery, crash investigation)
• trade skills (aeromechanical, avionics, welding, painting)

Functional Activities Requiring Technical Mastery

The fundamental essentiality of technical mastery to the RAAF's operational capability, means in reality that most of the processes and functions involved in the technical management of RAAF technical equipment requires some degree of technical mastery. Consequently, and in respect of the management of equipment in both the acquisition/introductory and in-service phases, technical mastery is a totally pervasive and all embracing trait of the RAAF uniformed technical strength. These functions and processes of technical management can be identified, and classified as:
- Policy Development
- Support Definition
- Equipment Design and Specification
- Equipment Maintenance/Repair
- Project Planning/Management
- Test Evaluation.

Acquisition of Technical Mastery

Initially, expertise is acquired through the education and training processes; basic levels of training at both civil and service institutions provide the base-grade range of expertise. More comprehensive levels of expertise may then be acquired through post graduate courses. For example, the expertise of a base grade practitioner in aircraft fatigue is acquired through an initial tertiary engineering qualification and a follow-on post graduate specialist course in structures. Education and training is thus an important means of restoring expertise and in circumstances where expertise levels are being degraded through other causes, increased training could help in the restoration of such levels.

Employment and consequent experience provides an important means of developing expertise. RAAF engineer staff gain expertise by being employed on a wide variety of positions at varying levels of seniority. Additionally, quite specialised expertise can be gained through specific avenues of employment. Engineers, for example, could gain basic design experience in unit engineering sections, experience in design review in HQLC or AFO staff appointments, systems knowledge and experience in operating units, and heavy aircraft maintenance experience in ILM and DLM organisations. It follows that expertise levels can be seriously degraded if these avenues of employment are lost through changes in organisations.

RAAF technical mastery can be augmented by the expertise available in organisations such as DSTO, universities and civilian contractors. Whilst such expertise is of value, the limiting factor is the nature of that expertise. In the case of DSTO and universities, the expertise is research in nature; in respect of a civilian company, the expertise is subject to commercial interests. In both cases, the issue is one of relating the expertise and technology to the specific application of the RAAF in an operational and performance sense. The problem inevitably becomes one of having uniformed RAAF expertise in such cases to define the requirement and then to review and judge the adequacy of the solution against that need.

With the widespread change in RAAF technical organisation towards system structures, the RAAF has now gained a preponderance of system mastery over technology mastery. In the past, system mastery was reasonably well developed through employment experience on aircraft and equipment at unit level. This source of system mastery of course will continue but effectively it will now be augmented by the additional opportunities for personnel to gain system experience. The effect is that apart from rotary wing, training and strike aircraft, for the reasons outlined later, the mastery base of the RAAF is now quite strong in systems.

Application and Justification of Technical Mastery

The mastery of RAAF technical functions is fundamental to the ability of the RAAF to conduct effective air operations. The ability of proficient aircrew to operate advanced, high technology weapon systems is totally dependent on such equipment being available for operations in a serviceable and reliable condition. In turn, such highly advanced technology weapon systems and the equally advanced technical equipment required for its support can only be kept in a serviceable condition through the expertise of technical personnel. This fundamental essentiality of technical expertise is equally
Repairs have to be developed and implemented by RAAF engineers and tradesmen.

relevant to the operations of an Air Force in both peace and war.

In peacetime, technical mastery provides the fundamental ability of the RAAF to conduct its training role in preparation for war. Expertise is applied through the whole diverse range of technical management functions required for the day to day running of a modern, advanced Air Force. Importantly, peacetime activities of the RAAF provide the opportunity for expertise to be developed and sustained in the technical workforce.

With the emphasis on mission accomplishment, wartime conditions provide perhaps the most fundamental and concentrated need for technical mastery in the uniformed workforce. Operation of aircraft under active service conditions produces a requirement for the modification of equipment and the rectification of a wide range of battle damage under extreme conditions of urgency. The pressing need for aircraft to be made available for operations together with the extent of damage often means that many aircraft cannot be flown to a rear echelon for repair by civilian industry. Nor is it acceptable for non uniformed, maintenance non combatants to be present in the forward area. Consequently, repairs have to be developed and implemented by RAAF engineers and tradesmen.

In general, the extent of damage requires ILM and DLM expertise. For example, a wing or structure holed by a projectile will generally need the same degree of repair expertise required in peacetime to rectify a seriously corroded section of structure. The same situation applies to an electrical loom destroyed or disconnected; the loom will require replacement in the same manner that an aircraft would be rewired in an ILM/DLM peacetime facility. Equally, an engine may require an urgent rebuild or replacement of blading. Uniformed maintenance personnel with the requisite ILM/DLM skill and experience must be available to undertake the repair. An important element of the combat repair process is that maintenance personnel must have the confidence to undertake a complex repair task. Such confidence is bred from past experience with the certain knowledge that the repair is feasible and that the appropriate tooling, repair parts and support equipment are available and can be operated or installed correctly.

These wartime requirements are not hypothetical but are derived directly from active service experience in Vietnam. For example, on many occasions, the ability of the RAAF to generate sufficient Iroquois for support was utterly dependent on the availability of experienced ASTFITTs, AFFITTs and
ENG FITTs particularly to undertake extensive airframe and engine rebuild in the most trying of conditions. Field Service Representatives and other contractor representatives in the field with US forces were found not to have either the technical skill or the application to do this work.

Australian Aircraft Industry Performance Standards

Whilst contractorisation/civilianisation is currently very much an in vogue ‘holy grail’ concept, technical mastery of uniformed personnel must be retained to provide protection and insurance against the possibility that a civilianised or contracted workforce may be unable to adequately perform a designated role. Such inability might conceivably arise through industrial disputes or the application of unsatisfactory standards of workmanship. Because of the essentiality of technical mastery of operational capabilities, the RAAF cannot accept a risk that such standards might be compromised. History and experience of Australian aircraft industry would suggest that the risk is real and must be countered. For example, the use of Australian forces in active service has consistently been opposed to some extent by various trade unions. During the Vietnam conflict, this opposition compromised the ability of the RAAF to conduct operations. Aircraft repair and construction engineering standards have been compromised on a number of occasions in recent years by Australian industry. The RAAF requires a cadre of available personnel with the technical mastery to offset such problems on a contingency, as required basis.

Thus far, the article has argued the essential need for technical mastery of the uniformed technical workforce in both peace and war and has identified the disciplines of technical mastery and the management processes in which disciplines are currently practised in the RAAF. Next, the article addresses the risk and effects of technical mastery being lost in certain disciplines through organisational and other changes, and the management actions required to offset and minimise the effects.

Effect of Organisational Changes

Changes that result in either reduced manpower resources or organisational structures can adversely affect the extant levels of technical mastery. Indeed, changes in the AFO organisation towards a systems structure has already significantly reduced the generic technology knowledge base. Prospective changes from contractorisation and civilianisation initiatives will affect the technical mastery in aircraft maintenance and repair.

The Sanderson changes in 1990 resulted in the loss of about 90 per cent of technology capability in the DGENG organisation. This loss has compromised the ability of the ENG Branch to meet its roles; for example, the definition of new operational capabilities, oversight of developing technologies and the DSTO interface have been affected. Similarly, the move in HQLC towards a systems based organisation will drastically reduce generic technology knowledge. Moreover, any future devolution of HQLC responsibilities and personnel to units would further dilute the technical mastery base and widen the need for mastery in particular disciplines. The transfer of helicopters to Army has also diminished the technical mastery of the RAAF in rotary wing at all levels. The combined effect is to very seriously reduce RAAF capability to apply generic engineering technology in the acquisition of new equipment or the maintenance of in-service equipment. This situation is not acceptable and must be corrected.

Civilisation/contractorisation of various RAAF maintenance units would remove a valuable and fundamental source of technical mastery particularly of aircraft and associated trade skills. Aircraft depots provide the most important source of technical mastery in the areas of aircraft structural repairs and engine overhaul and rebuild. The technical mastery of ENG FITTs, AFF FITTs, AST FITTs gained in these activities will largely be lost together with the expertise of tradesmen in the relooming of electrical systems and the repair of fuel tanks and circuit boards. The introduction of contractorisation or civilianisation at 3AD would have a significant impact on technical mastery levels in strike systems. Similarly, alterations to the maintenance arrangements of training aircraft will reduce technical mastery although this will be of significance only in management since the force element does not currently produce ILM/DLM experience.

Over the years, the RAAF has had an enviable reputation for being able to apply initiative and resourcefulness. Unless this loss of technical mastery is corrected, our aircraft tradesmen will virtually become capable of supporting only flight line level maintenance activities. This loss of technical mastery
Specialised training courses need to be continued. and consequent risk to the RAAF's capability to operate, is not acceptable.

**Methods to Offset Technical Mastery Loss**

In addressing ways of offsetting and minimising the effects of the loss of technical mastery, this article acknowledges the inevitability of resource limitation and organisational changes. That is, the solution is not simply to revert to past arrangements although in some cases, a revised organisational approach may be the only means. Rather, the RAAF must initially positively identify those areas over which technical mastery must be mandated and then establish alternate means of developing and instilling that essential mastery in selected personnel.

**Priority of Mastery**

The relative priority of need for various technical mastery disciplines in the RAAF is dependent on both operational and functional requirements. In respect of the operational need, sufficient technical mastery must be available in squadrons to provide adequate insurance for aircraft and equipment repair and maintenance and expertise at both unit and command level for the development of engineering solutions. For example, the priority of need for maintenance support mastery would be greater for tactical combat aircraft normally deployed to forward areas (F/A-18, F-111) and lesser for aircraft such as P-3/C-130 which are generally operated from a home base with a comprehensive degree of technical support. Conversely, the priority of design and specification mastery would be equivalent for all aircraft because the need is independent of the operational scenario. Similar logic can be applied to other weapon/role systems such as Air Defence radars and ATC equipment.

In respect of technical functions and processes, the relative priority cannot be defined as clearly. Firstly, the priority will vary according to the existing state of force structure development and operation. For example, in a period of peak equipment acquisition activity, the emphasis will be on requirement definition, specification, evaluation, project planning/management. Conversely, in periods of peak operational activity, the emphasis will be on support of the force in being. Consequently, the overall requirement is for the RAAF to maintain a balanced level of technical mastery in all
functions and processes. This logic has been used to assess and indicate the relative priority of the technical mastery disciplines; three priorities, namely ‘essential’, ‘medium’ and ‘not required’ have been employed.

**Correction of Technical Mastery Loss**

Since the retention of certain levels and disciplines of technical mastery is necessary on a prioritised basis, corrective action must be implemented to restore such mastery to acceptable levels in those areas where it is being lost. The areas of loss can be broadly categorised as resulting from organisational changes and the contractorisation and civilianisation of functions.

The preservation and restoration of technical mastery in areas of loss involves:

- training
- variations to organisations
- industry placement of RAAF personnel
- extended usage of RAAF centres of expertise.

Training clearly can be utilised to restore technical mastery. The current range of specialised post graduate and specialised training courses will need to be continued. However, opportunities to utilise additional specialised courses for both professional and trade mastery will need to be continuously reviewed. For example, if the loss in engineering technology mastery in AFO and HQLC cannot be offset through organisational corrections, then a very wide suite of courses will need to be set up at various institutions such as RMIT and universities, and USN and USAF post graduate aviation engineering schools. Similarly and to correct the diminution of technical mastery in RAAF tradesmen through the lack of opportunity to gain experience in DLM facilities, extensive training courses of the aircraft battle damage type need to be utilised. RAAF trade courses should continue to provide basic hand skills which form the very basis of in-depth maintenance so that RAAF tradesmen can quickly adapt in contingency situations.

In all cases, re-organised management structures which have caused losses of technical mastery, will have to be reviewed and some compensating adjustments introduced. This will be particularly so in respect of the loss of technology mastery which has occurred in AFO and HQLC. This loss is very serious because it threatens the whole knowledge infrastructure of RAAF engineer staffs. Consequent-
Action is required to restore technical mastery.

ly, some formalised and disciplined management arrangement needs to be put in place to ensure that mastery of the technologies is retained. Specifically, the ad-hoc, part-time manner in which the technology function is currently handled is unsatisfactory. What is needed is not so much a reversion to past organisations but the introduction of a formal and disciplined approach in existing organisations. Again, the retention of technical mastery must be a fundamental consideration in the future re-organisation of technical staffs.

In situations where contractorisation or civilianisation prevents the RAAF from gaining DLM-type experience, the placement of RAAF personnel in industry provides a means of gaining mastery. Alternatively, some existing RAAF maintenance organisations may be civilianised rather than work being transferred to industry. Placement of personnel in industry or civilianised RAAF organisations is seen as an effective way of developing technical mastery of ILM and DLM maintenance procedures; however, the placement has to be managed carefully to ensure that mastery of the tradesman, supervisor and manager functions is achieved.

The RAAF should be prepared to utilise the services of in-house centres of expertise on a consultancy basis. This would prevent the dilution of expertise by retaining skill and knowledge in specific cells. For example, the 3AD NDISL is a RAAF centre of expertise as is the 2AD Laboratory Flight for calibration. These organisations need to be used more widely by AFO and command staffs in the development of technology policy, the provision of advice on DSTO and other research requirements, and the application of specific technology to new equipment proposals. Further, it might well be that an increase in the range of RAAF centres of expertise could be justified; some possibilities include an ABDR centre, a composite repair centre and an ATE development centre. Additionally, the capabilities of DSTO, civilian industry and perhaps other Air Forces should be employed on a consultancy basis on the understanding that advice and information received from such sources must still be moulded and applied to the RAAF.

Resource Management Issues

Clearly, resource management will be extremely important in the maintenance of a technical mastery control system. For example, a record must be
maintained of the positions requiring technical mastery and the specific discipline. Personnel records will also have to carry annotations showing the technical mastery of particular individuals.

The first point that established positions will need to be recorded, requires of course that the numbers of positions and the associated disciplines are assessed for a given unit. This assessment process will be a lengthy and complex task and will require a concentrated program of effort. It should be conducted by individual units in accordance with an AFO direction. These assessments would then need to be authorised by commands and passed to AFO for establishment and personnel annotations and consequent management. The programme would need to be co-ordinated by an AFO appointment (LPOL3 is suggested). It would be facilitated by some form of unit visitation programme to provide advice in the assessment and preparation of unit returns.

The following guidelines would be appropriate for the assessment process:

- In respect of aircraft and equipment maintenance, each operational squadron with a tactical, deployed combat role should have a small cadre of tradesmen and supervisors with technical mastery to conduct major repairs of aircraft, engines and systems. The cadre should include ASTFITTs, AFFITTs, ENGFITTs and avionics trades appropriate to the technology of the aircraft.

- In terms of professional engineering mastery of aircraft technology, the RAAF must ensure that all functional areas are covered by reasonably experienced personnel (senior FLTTLT/ SQNLDR) located to provide sufficient support to equipment acquisition and in-service aircraft management. Within a given organisation, some form of supervision must also be provided within each technology discipline. This implies that mastery needs to be maintained at both HQLC and AFO.

- Technical mastery of aircraft and equipment systems similarly requires expert knowledge to be available for technical management of in-service and capital equipment. Again, mastery is required at both AFO and HQLC.

- Skilled personnel need to be available to perform the functional activities and hand skills according to assigned unit and base responsibilities. In some cases, information and advice would be gained on a consultancy basis from centre of expertise.

Finally, the restoration of technical mastery should be resource neutral; some reorganisation may be necessary but additional manpower is not believed necessary.

**Conclusions**

Technical mastery is being lost in the RAAF through organisational changes and contractorisation/civilianisation of RAAF functions to such an extent that the capability of the RAAF technical element to support operations is at risk of compromise.

Action is thus required to restore technical mastery to acceptable levels through the application of additional training, the introduction of formal and disciplined arrangements in existing organisations, the placement of RAAF personnel in civil agencies and the use of centres of expertise. The priority of technical mastery disciplines needs to be assessed against various technical functions and processes so that the overall technical mastery requirements are satisfied.

The adequacy of existing and future organisations and technical management arrangements then need to be assessed against the established technical mastery requirements. This assessment should include an appraisal of the organisation structure and the identification of actual positions that are required to carry particular technical mastery proficiency levels so that appropriate annotations can be made on establishment tables.

Subsequently, the required degree of technical mastery should be instituted at a given unit through resource management processes involving the training and movement of personnel.

**Recommendations**

This article recommends that a technical mastery program be instituted in the RAAF in accordance with the following guidelines:

- Based on the broad disciplines and functions outlined in the article, technical mastery requirements should be established in specific detail for all units with technical functions. This review should include a detailed assessment of known or predicted losses in technical mastery and the associated causes.

- Where losses are identified in specific units, a plan to restore technical mastery to acceptable levels...
An advanced Air Force.

should be developed. This plan should detail appropriate restorative action such as the introduction of additional training, the review and amendment of organisational structures, the placement of personnel, and the use of centres of expertise.

- Establishment and personnel records should be annotated with appropriate technical mastery requirements and technical personnel managed accordingly in terms of postings, training and civil placement.
- The restoration program should be co-ordinated by AFO and conducted with visits and briefs to units.

Group Captain Weller enlisted as a RAAF apprentice in January 1958. After graduating from Royal Melbourne Institute of Technology in 1963, he served in a range of engineering, logistic and project posts. His field appointments include active service with No 9 SQN in South Vietnam and more recently, he commanded No 481 Wing. Staff duties have involved him in the P3C and F/A-18 projects and he is currently Director Engineering Policy — Air Force.
Return to Greece

*Return to Greece* is an *Australian Defence Force Journal* production highlighting the 50th Anniversary of the Australian Defence Force’s participation in the Allied struggle of the Greek Campaign of World War II.

In 1941, Greece fought for survival against the might of Germany. The Greeks, aided by Australian, New Zealand and British forces fought to ward off the invasion of their homeland. *Return to Greece* tells of these battles and of the Allied evacuation.

*Return to Greece* revisits the sites of the battlefields through a selection of 50 water colours and drawings. The book takes the reader on a journey with the veterans of the Greek Campaign through the country where they fought valiantly with their Greek comrades in defence of democracy. It illustrates the pride and professionalism of today’s Australian Defence Force personnel as they pay tribute to the memory of those who fought with such bravery and self sacrifice in the cause of freedom in the dark days of 1941.

This book will rekindle memories for those who took part in the campaign of 1941 and also for those who participated in the return pilgrimage in 1991.

*Return to Greece* is illustrated by Defence artist, Jeff Isaacs with text by Michael Tracey.

*Return to Greece* is available from the *Australian Defence Force Journal* at a cost of $20.00.
The Healthy Army — Reality or Myth?

By Major S.J. Rudzki, RAAMC

Introduction

The Army is generally viewed as fit. But is this more perception than reality. If there was a sudden deployment, how many unfit personnel would we be forced to take?

The perceived fitness of the Army is attributed to the introduction of the Physical Training Test (PTT). Whilst the benefits of increased physical activity are acknowledged, little attention has been paid to the injuries and costs associated with this increased 'fitness'.

It will be argued that the level of injury resulting from our current training methods is high. This results in significant demands on scarce medical resources, and ultimately reduces the effectiveness of the Service through the absence or reduced work capacity of soldiers.

Methods

It is difficult to obtain accurate injury data on soldiers. Whilst the PM60 medical consultation form is coded for computer data entry, this is not done as no computer support is available.

The most readily available source of data is the PM24 (Report of injury or illness). This information is collected by the Directorate of Occupational Health and Safety. Computerised summaries of the data are distributed to each Military District Headquarters every six months. Most of the data used in this paper is derived from the 2nd Military District (2MD) PM24 summary for the period January to June 1989. These figures include men and women.

PM24 data is likely to be an under-reporting of the true level of injury, as it is a document completed at the discretion of the injured party. Many injuries are not reported in this way, despite being recorded on a PM60.

In the figures quoted there is no distinction made between injury and illness in the data readout. In 10 years of military medical practice this author has only seen one PM24 reporting illness. It is therefore assumed that the reports refer predominantly to injury and that the majority of illness are listed in the miscellaneous category.

Another source of injury data are Pulheems Employment Standards (PES) statistics. The PULHEEMS system of medical classification is a way of assessing a soldier's functional capacity; (Physical capacity, Upper limb, Lower limb, Hearing, Eyes, Mental capacity, Stability). Soldiers are assigned a numerical PULHEEMS profile from which a PES is determined. Most categories are graded as 2 if normal; while a grading of 3 indicates a mild disability, 7 a substantial disability and 8 indicates medically unfit for continued service.

The most common PES is Fit Everywhere (FE), the others being Communication Zone Everywhere (CZE), Base Everywhere (BE), Home Only (HO), Below Medical Standards (BMS), and Medically Unfit (MU). The PES is intended as a guide to the employment of soldiers. For example, only FE and some CZE soldiers are employed in Field Force units, while HO soldiers should only be posted to major centres.

Every soldier has an Employment Category Number (ECN). This relates specifically to his or her trade; for example a rifleman is ECN 343 and a motor mechanic is ECN 223. Each ECN has a different PULHEEMS profile for each PES. By example, a motor mechanic may have a P grading of 2 and an L grading of 3, and remain FE; a rifleman would be BMS, and a medical assistant (ECN 031) would be BE.

The accuracy of PES data is questionable for a number of reasons. Soldiers often conceal injury and medical boards may not be done until due rather than when indicated. This is understandable given the career ramifications of not being FE. PES data is likely to under-estimate the true level of morbidity (injury) in the Army population.

In the following analysis, the prevalence of the L3 and L7 gradings are examined. In the majority of cases, a grading of L3 will represent a medical downgrading; but a small number of those with an L3 grading will remain FE.

It should be clearly understood, however, that an L3 grading represents a significant reduction in
functional capability. The usual limitation being an inability to run without pain. Additional data was gathered from 1st Recruit Training Battalion (1RTB) reports dealing with injuries to recruits, and a small study conducted at Royal Military College (RMC) by the CO 5th Camp Hospital.

Injury Data

PES Data

Table 1 shows the Nov 1988 PES status of selected rank groups within the Army by gross medical classification. This data was obtained from an Army Health Records printout, with L (Lower Limb) status accessed by use of a special programme provided by DPC-A.

Some 12.8% (4,154) of the total Army was classified less than FE (Fit Everywhere) as at Nov 1988. 7.1% of the total Army were graded as L3 and 1.7% were graded as L7. If we assume that all the L3 and L7 gradings resulted in downgrading, then lower limb causes (including the back) were responsible for approximately 70% of total downgradings.

During the period Feb-April 1988 clerical staff of 2 MD audited all submitted medical boards and noted any knee or back injury recorded. The results are listed in Table 2. 19% of FE soldiers in this sample had a back or knee injury significant enough to warrant mention on their medical board.

Back and knee injuries were examined specifically because they are the injuries most likely to run a prolonged course, and result in ultimate medical downgrading. These two conditions alone accounted for 55-70% of all medical downgradings in this sample.

An examination of the distribution (Table 1) of medical downgrading by rank, shows that 15% of Majors, 10% of Captains, 20% of Sgts and 29% of SSgts were not FE (at November 1988). WO 2 differ from the trend, but this likely represents a bias against people who were not FE. That is, those who were not FE were not panelled on a promotion course.

These abovementioned personnel usually have 8-15 years of service; hence they are relatively senior and important because of their experience and skills. This group is anecdotally inclined to ‘carry’ injuries for fear that any change in medical classification may affect their promotion. They represent a substantial investment in training and their premature separation from the service due to injury is undesirable.

Injury Statistics 2MD

The causes and location of reported injury in 2MD for the period January to June 1989 are listed in Tables 3 and 4. At June 30 1989 there were 11,459 Army personnel in 2MD.

1584 injuries were reported during this six month period. Assuming that no individual had more than one reported injury, this represents 13.8% of all 2MD personnel sustaining an injury during that period. 640 (5.6%) sustained a lower limb injury and 237 (2%) sustained a back injury.

The lower limb was the most frequently reported location of injury. These injuries comprised 40% (640) of the total, yet were responsible for 59% (5,164) of lost mandays and 56% (11,433) of days on light duty (Tables 5 & 6). This represents a disproportionate contribution of lower limb injury to loss of effective work.

Physical Training Test (PTT)/ Physical Training (PT)/ Running/ Marching was listed as the cause of 384 (60%) of the total 640 lower limb injuries, and assuming a pro-rata contribution, would be responsible for 3,098 (35%) lost mandays and 6860 (33%) days of restricted duty (Table 3).

Incidence of injury is a specific medical term and is expressed as new occurrences per 1000 population. Thus the approximate incidence of injury in 2MD during the period Jan-June 89 was 138/1000, (56/1000 for lower limb). These rates appear high, but unfortunately no other figures are available for comparison. Thus it is not possible to identify any trend or gain a historical perspective.

The prevalence of injuries (new plus existing) cannot be obtained from this data. The prevalence of injury is the more important information, as it indicates how many soldiers are injured at any given time. PES data is the closest approximation, but likely to be an underestimate for the reasons stated.

These figures should cause concern, as injured soldiers are unlikely to be able to perform their normal duties. There is no agreement as to what an acceptable level of injury (or wastage) should be. If we take the 1988 PES data, then 12.8% of the Army were not operationally fit to deploy in November. Is this figure acceptable? Does this level merely reflect the inevitable consequence of hard training or are a large number of these injuries preventable? These issues warrant closer examination.
RMC and 1 RTB Statistics

Lower limb injuries constituted 60% of all injuries sustained at RMC (Table 7) during the six month period Jan-Jun 89. 30% of all cadets at RMC sustained a lower limb injury during this period. Most of these injuries were considered minor, but significant enough to warrant attention by RAP staff.

Similarly, lower limb injury increased as a cause of BMS discharge at 1RTB during the period 1984-88 (Table 8). Over 50% of medical discharges from Kapooka during 1987 and 1988 were due to lower limb injuries.

Table 1. PES status by selected rank as at November 1988 (Army-wide)

<table>
<thead>
<tr>
<th>Classification</th>
<th>Major</th>
<th>Captain</th>
<th>WO2</th>
<th>SSgt</th>
<th>Sgt</th>
<th>Cpl</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Non-FE</td>
<td>15.2</td>
<td>9.5</td>
<td>6.6</td>
<td>28.8</td>
<td>20.4</td>
<td>19.0</td>
<td>12.8</td>
</tr>
<tr>
<td>% L3</td>
<td>9.8</td>
<td>6.1</td>
<td>4.8</td>
<td>16.5</td>
<td>12.1</td>
<td>10.8</td>
<td>7.1</td>
</tr>
<tr>
<td>% L7</td>
<td>1.3</td>
<td>1.1</td>
<td>1.2</td>
<td>5.1</td>
<td>2.4</td>
<td>3.0</td>
<td>1.7</td>
</tr>
<tr>
<td>% L contribution to non-FE</td>
<td>73</td>
<td>75.8</td>
<td>90.9</td>
<td>75.0</td>
<td>71.1</td>
<td>72.6</td>
<td>68.7</td>
</tr>
</tbody>
</table>

L represents lower body status, and includes back and lower limb causes. L3 represents moderate disability and L7 is marked disability. FE is 'fit everywhere'. **Assumes that all gradings of L3 resulted in downgrading**.

Table 2. Back and knee injuries recorded on medical boards Feb-April 1988 (2MD)

<table>
<thead>
<tr>
<th></th>
<th>FE</th>
<th>CZE</th>
<th>BE</th>
<th>HO</th>
<th>BMS</th>
<th>MU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Back</td>
<td>26 (8%)</td>
<td>37 (42%)</td>
<td>9 (36%)</td>
<td>9 (26%)</td>
<td>8 (30%)</td>
<td>7 (38%)</td>
</tr>
<tr>
<td>Knee</td>
<td>39 (11%)</td>
<td>28 (32%)</td>
<td>9 (36%)</td>
<td>12 (35%)</td>
<td>7 (26%)</td>
<td>3 (16%)</td>
</tr>
<tr>
<td>TOTAL</td>
<td>342</td>
<td>88</td>
<td>25</td>
<td>34</td>
<td>26</td>
<td>18</td>
</tr>
</tbody>
</table>

**CZE (Communications zone everywhere), BE (Base everywhere), HO (Home only), BMS (Below medical standards), MU (Medically unfit)**

Table 3. Cause of reported injury 2MD

<table>
<thead>
<tr>
<th>How injured</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall/Slip</td>
<td>198</td>
<td>12.5</td>
</tr>
<tr>
<td>PT/PTT</td>
<td>216</td>
<td>13.6</td>
</tr>
<tr>
<td>Running/Marching</td>
<td>168</td>
<td>10.6</td>
</tr>
<tr>
<td>Sports (15 types)</td>
<td>158</td>
<td>10.0</td>
</tr>
<tr>
<td>Struck</td>
<td>135</td>
<td>8.5</td>
</tr>
<tr>
<td>Physical exertion</td>
<td>103</td>
<td>6.5</td>
</tr>
<tr>
<td>Parachuting</td>
<td>63</td>
<td>4.0</td>
</tr>
<tr>
<td>Rugby</td>
<td>58</td>
<td>3.7</td>
</tr>
<tr>
<td>Lift/bending</td>
<td>52</td>
<td>3.3</td>
</tr>
<tr>
<td>Touch football</td>
<td>49</td>
<td>3.0</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>384</td>
<td>24.3</td>
</tr>
<tr>
<td>TOTAL</td>
<td>1584</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 4. Reported location of injury 2MD

<table>
<thead>
<tr>
<th>How injured</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ankle/foot/toes</td>
<td>301 (19.0%)</td>
</tr>
<tr>
<td>Leg/knee</td>
<td>339 (21.4%)</td>
</tr>
<tr>
<td>Back/spine</td>
<td>237 (15.0%)</td>
</tr>
<tr>
<td>Upper limb</td>
<td>317 (20.0%)</td>
</tr>
<tr>
<td>Head/neck/eyes</td>
<td>153 (9.6%)</td>
</tr>
<tr>
<td>Other</td>
<td>237 (15.0%)</td>
</tr>
<tr>
<td>TOTAL</td>
<td>1584 (100.0%)</td>
</tr>
</tbody>
</table>
Table 5. Loss of work days and days of restricted duties caused by different types of injury
2MD Jan-Jun 1989

<table>
<thead>
<tr>
<th>Location of injury</th>
<th>Mandays lost</th>
<th>%</th>
<th>Days light duty</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ankle/foot/ toes</td>
<td>2105</td>
<td>23.9</td>
<td>3977</td>
<td>19.3</td>
</tr>
<tr>
<td>Leg/knee</td>
<td>3059</td>
<td>34.7</td>
<td>7456</td>
<td>36.3</td>
</tr>
<tr>
<td>Back/spine</td>
<td>1282</td>
<td>14.5</td>
<td>2608</td>
<td>12.7</td>
</tr>
<tr>
<td>Upper limb</td>
<td>1064</td>
<td>12.1</td>
<td>4431</td>
<td>21.5</td>
</tr>
<tr>
<td>Head/neck/ eye</td>
<td>680</td>
<td>7.7</td>
<td>1380</td>
<td>6.7</td>
</tr>
<tr>
<td>Other</td>
<td>624</td>
<td>7.1</td>
<td>721</td>
<td>3.5</td>
</tr>
<tr>
<td>TOTAL</td>
<td>8814</td>
<td>100.0%</td>
<td>20573</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Table 6. The relative contribution of lower limb injury to lost mandays and days of restricted duties

<table>
<thead>
<tr>
<th>Number</th>
<th>%</th>
<th>M.D. lost</th>
<th>%</th>
<th>R.D. days</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>640</td>
<td>40.4</td>
<td>5164</td>
<td>58.6</td>
<td>11433</td>
<td>55.6</td>
</tr>
</tbody>
</table>

Table 7. Location of injuries sustained by RMC cadets Jan-June 1989

<table>
<thead>
<tr>
<th>Location of injury</th>
<th>Male</th>
<th>%</th>
<th>Female</th>
<th>%</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knee</td>
<td>38</td>
<td>23.2</td>
<td>5</td>
<td>33.6</td>
<td>43</td>
<td>24.0</td>
</tr>
<tr>
<td>Foot/leg</td>
<td>60</td>
<td>36.6</td>
<td>7</td>
<td>46.6</td>
<td>67</td>
<td>37.4</td>
</tr>
<tr>
<td>Shoulder</td>
<td>26</td>
<td>15.9</td>
<td>1</td>
<td>6.6</td>
<td>27</td>
<td>15.1</td>
</tr>
<tr>
<td>Back</td>
<td>16</td>
<td>9.8</td>
<td>1</td>
<td>6.6</td>
<td>17</td>
<td>9.5</td>
</tr>
<tr>
<td>Other</td>
<td>24</td>
<td>14.5</td>
<td>1</td>
<td>6.6</td>
<td>25</td>
<td>14.0</td>
</tr>
<tr>
<td>TOTAL</td>
<td>164</td>
<td>100.0</td>
<td>15</td>
<td>100.0</td>
<td>179</td>
<td>100.0</td>
</tr>
<tr>
<td>TOTAL LOWER LIMB</td>
<td>98</td>
<td>59.8</td>
<td>12</td>
<td>80.2</td>
<td>110</td>
<td>61.4</td>
</tr>
</tbody>
</table>

Table 8. Percentage and number of medical discharges due to lower limb injury at 1 RTB 1984-88

<table>
<thead>
<tr>
<th>Year</th>
<th>Percentage</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1984</td>
<td>35.3%</td>
<td>70</td>
</tr>
<tr>
<td>1985</td>
<td>42.2%</td>
<td>85</td>
</tr>
<tr>
<td>1986</td>
<td>48.9%</td>
<td>138</td>
</tr>
<tr>
<td>1987</td>
<td>53.9%</td>
<td>310</td>
</tr>
<tr>
<td>1988</td>
<td>53.4%</td>
<td>99</td>
</tr>
</tbody>
</table>

Table 9 illustrates the costs of selected medical services in 2MD during the period Jul 89-Jan 90. Large sums are spent on the provision of medical services by civilian practitioners. It is not possible to provide a detailed analysis of costs as an appropriate computer system to monitor medical expenses does not exist. Medical costs will continue to rise with increased reliance on the private health sector for services we cannot provide.

Costs

Costs of injury can be divided into three main categories; direct, indirect and intangible.

Direct Costs

These are the actual monetary costs incurred as a result of injury. These include wage costs, medical and associated costs.

During the period Jan-June 89 there were 8,814 lost mandays in 2 MD (Table 5). If we apply a single value of $60.00 per day (the wage for a private soldier), then $528,840 worth of wages were paid for no work.

Medical costs, especially private costs, have risen at a rate greater than inflation during the last few years. Figures released by the Australian Institute of Health show that private sector expenditure on health increased annually by an average of 15.1% during the period 1984/85 to 1987/88. Costs for the Government sector during the same period rose an average of 10.9%. The single biggest cost increase being for wages.
Table 9. Cost of selected medical services 2MD period July 89-Jan 90 (7 months)

<table>
<thead>
<tr>
<th>Type of service</th>
<th>Amount spent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specialist fee for service</td>
<td>$809,000</td>
</tr>
<tr>
<td>Therapists</td>
<td>$111,000</td>
</tr>
<tr>
<td>GP sessional</td>
<td>$386,000</td>
</tr>
</tbody>
</table>

These figures should interest advocates of civilianisation. If the cost of private medical care continues to outpace the public system by the same differential, then the forecast savings of contracting health care to the civilian sector may be illusory.

Compensation payments are another direct cost to the Department of Defence, yet rarely considered. National figures were not available to the author, but the Compensation payout for NSW (excluding A.C.T.) for the 6 month period 1 Dec 88-3 Jun 89 was $1.43 million. This was paid to 308 claimants comprising 92 new and 216 continuing claimants (including 19 payments to dependants following death of a member). This represents $4650 per claimant for the 6 months, or (pro rata) $9305 per year.

Legal Perspective

The draft Defence Instructions (General) DI(G) Pers 27-1 deals with compensation for Commonwealth employees and members of the Defence Force. It covers the implementation of the new COMCARE scheme which came into effect on 1 December 1988. In para 35 under the heading of Rehabilitation it states:

'Where an employee suffers an injury resulting in incapacity of 28 days or more or a permanent impairment, the Department is required to provide and to manage a rehabilitation programme which will assist the employee to obtain the greatest possible recovery and to return to work as soon as possible. The responsibility for rehabilitation of ADF members rests with the respective service.'

The onus is clearly on the Defence Force to adequately care for its long term injured. This can only be achieved by developing in-house programmes or contracting the work to the civilian sector with the likelihood of substantial associated cost.

A recent High Court decision, (Australia Post vs Abalos), found Australia Post negligent for failure to provide proper supervision which could have prevented an employee from developing a painful and incapacitating condition commonly known as 'tennis elbow'.

The plaintiff's solicitor summarised the case:

'the decision clearly states the principle that there is an onus on the employer to study the systems of work and determine the possibility of a risk of injury. If the answer is yes, and there is a risk, they must look at the alternatives. And if one is reasonably available and they fail to use it they are clearly negligent'.

This ruling has obvious implications for the Defence Force, and this was reinforced by a recent Supreme Court case (Commonwealth vs De Weerd).

A former Army nurse was awarded $287,612 for a back injury sustained in February 1985. While based at Kapooka she was required to undertake a stretcher-carry of a 102kg patient. Following the injury, the plaintiff suffered persistent back pain and numbness in her right leg, and was discharged seven months after her injury.

The judge found that requiring the member to help carry the stretcher carried a 'clearly foreseeable risk' of injury and the risk 'could readily have been avoided or minimised'. He found the Army negligent.

Clearly the onus is on the Services to identify and minimise the risks associated with employment. Failure to address this issue is likely to continue the trend to litigation and its associated high costs.

Indirect Costs

These are costs associated with changes in the work performed by others due to the absence or loss of personnel through injury. The main area is increased training costs. It has been estimated that the difference between replacement cost and retention cost is $93,000 for a Captain and $75,000 for a Major.

Other costs that are difficult to quantify are the effect on unit efficiency and morale caused by manning shortfalls and personnel absences. Restrictions on injured soldiers also place a greater physical burden on the remaining fit soldiers, increasing their likelihood of injury. The loss of experienced and trained personnel may result in a degradation in the efficiency of unit operations.
Intangible Costs

These costs relate to quality of life. It is the cost in terms of pain and suffering of individuals who are injured. This has implications for the individual's attitude to his work and may be a significant factor in separation from the Army. Many soldiers with injuries are ostracised and feel obliged or compelled to participate in activities which cause pain and aggravate their injuries.

The fear of possible medical downgrading inhibits soldiers (and Officers) from revealing the extent of their medical problems. In the clinical experience of the author, many worsen their injuries before seeking appropriate medical treatment. When medical downgrading becomes inevitable, some feel they have no future career prospects and choose to leave the service.

A Proposed Approach to the Issues

The data presented demonstrates the levels of injury in 2MD. There is no reason to suggest that the situation is any different in other Military districts, although 2MD has a higher number of training units.

The life of a soldier is an active and relatively dangerous one. Injuries will always occur, but reduction of injury levels should be a priority. The approach should be threefold; (1) Research, (2) Prevention of avoidable injury, and (3) Speedy and effective treatment of existing injury. There is no quick fix, and improvements are likely to result from a number of actions.

Research

The first step is to research the extent and types of injury which occur. That is, determine the epidemiology. The rationale is quite succinctly put by Midwinter and Colley.5

"Epidemiology may be defined as the study of the distribution and determinants of disease (injury) in populations. The study of disease patterns in human populations is an early step in a chain of processes that ends in identifying the cause of disease. The recognition that some types of people are more at risk of developing a particular disease than others leads one to question why this should be so. If cause can be identified, then it may be a relatively easy matter to prevent a disease from occurring. It makes sense to prevent, rather than treat, often inadequately, the late effects of disease processes. Yet at present, and in most countries, far more money is spent on 'curative medicine' than on 'preventative medicine'."

Our current activities mirror those sentiments, in that we spend millions of dollars treating the end stages of injuries which may well be preventable. Without appropriate 'intelligence' there is no rational way to tackle the problem.

Research is a specialised full-time activity. Despite the difficult time, a new capability must be developed.

Prevention of Avoidable Injury

The PM24 data implicate Running/Marching/PT/PTT as the main cause of injury (24% of the total number). Lower limb injuries were the most common and responsible for a disproportionate amount of morbidity. Of the activities listed, running appears the most likely culprit. Numerous studies have demonstrated high levels of injury in runners.6,7

A recent study by Danish researchers8 examined 1310 marathon runners and looked at their injury rates. They found an increasing incidence of injury with increasing distance run. Runners who ran 0-30kms per week had a 23% incidence of injury with the rate rising to 53% in those who ran more than 120kms per week. Their conclusion being that the more running performed, the greater the likelihood of injury.

There is a simple rationale for this observation. In running, forces equal to 3 times body weight act through the knee joint; whereas in walking the forces are slightly in excess of body weight. The forces loading the joint determine the amount of stress on the joint.

The effects of loading on cartilage structure and function have been extensively studied in animal models. Cartilage functions best with a load placed on it, but the load needs to be optimal. Both immobilisation and strenuous exercise weaken the cartilage causing softening and pitting, with loss of elastic recoil. Physiological loading (walking), reverses the changes of immobilisation and allows cartilage composition and strength to return to normal. On the other hand, running on a treadmill
(6 miles/day) leads to the persistence of the weakness in cartilage structure caused by immobilisation.9,10,11,12

Put simply the joints are adapted to loads at or around body weight. No load, or excessive load, damages the cartilage structure.

There is little knowledge of the long-term effects on the joints of frequent, enforced running. This problem rarely exists in the civilian community, as activity is self-limited. That is, when it hurts, people stop.

This is in contrast to the Army environment, where we are compelled to run as an occupational requirement, and many continue to run despite pain. There is sufficient animal data to suggest that this activity pattern is likely to accelerate cartilage breakdown, and may lead to premature Osteoarthritis.

Alternate methods of fitness training and testing warrant evaluation. Ways of achieving aerobic fitness without the current associated injury levels require investigation.

**Conclusion**

Arguments in the area of injury have been hampered by a lack of data. This paper seeks to provide a factual basis for rational debate. The data presented indicate a level of lower limb injury which should warrant concern. Greater attention to the prevention of injury is indicated, and this may necessitate changes to current policy.

In a climate of cost constraint, it seems fundamental to conserve the health of serving soldiers, thus reducing medical and training costs. Speedy and appropriate treatment for those who sustain an injury is essential. Failure to address the issues outlined is likely to result in rising costs and a diminished effectiveness of the Army.

**NOTES**


Major Rudzki graduated MBBS Adelaide University 1982. He obtained a graduate diploma in Sport Science at Cumberland College 1986. He is currently studying for a Masters of Public Health at Sydney University part-time. He has been RMO 3 RAR, 8/12 MDM Regt, and 1 RTB. Posted as OC Clinical Services. 1 FD hospital. Major Rudzki has previously contributed to the Australian Defence Force Journal.
Space Power — The Missing Dimension in Australia’s Defence Policy

By Wing Commander K.J Drover, RAAF

Introduction

Space power ... to many, the word conjures up visions of futuristic star wars space vehicles, high technology, even higher costs and a feeling that the subject is not all that relevant to the basic requirements of warfare. Because the potential for the military use of space is only in its infancy, its importance in conventional military wisdom is all too easily played down, given lip service or just plain ignored due to more pressing problems in other established areas. This appears to be the case with Australian defence planners. The lack of emphasis placed by the government and the ADF on space, the newest and arguably the fastest expanding dimension of warfare, indicates a strategic myopia towards new military imperatives.

Flawed or ill-advised judgements over the fundamental importance of space could have far reaching consequences in obtaining the best force structure for future conflicts. This article will show that the military use of space is ideally suited to Australia’s strategic circumstances and if integrated into our defence strategy, space assets would act as powerful force multipliers to enhance current and future combat capabilities. It will then examine the reasons why I believe the ADF has failed to grasp the opportunity to benefit from this new and vital dimension of warfare and discuss options to redress the situation.

Australia’s Strategic Problems

The problems of fulfilling Australia’s current defence policy of self-reliance through the strategy of defence in depth outlined in the Defence White Paper (DOA 87), stem from the vast area to be defended, small defence force, inadequate infrastructure, low population and limited defence budget. Although we are one of the most sparsely populated nations in the world, our area of direct military interest includes our mainland, our territories and proximate ocean areas, Indonesia, Papua New Guinea and other nearby countries of the South-West Pacific. An area that stretches over 7,000 kilometres east-west and over 5,000 kilometres north-south, or about 10 per cent of the earth’s surface. One of the first questions one should then ask within the framework of defence in depth is: what are the best means of surveillance, intelligence gathering or targeting over such a large area? The answer should be obvious. Only the fourth combat dimension of space provides the coverage, the staying power, the right of overflight, the versatility and the relative invulnerability to fully and cost effectively support so many of the aspects of our strategy of defence in depth.

Maximising Our Returns

Given the fiscal and manpower constraints in Australia, and the diverse, but generally low threat environment, the force structure of the ADF must be tailored to achieve maximum efficiency for operations over the large area of interest. A major factor in achieving the maximum utility from the limited ADF resources is to make the use of force multipliers that will greatly increase the returns for the effort expended. Lord Trenchard espoused a similar concept when he said: “to expand the effectiveness of man and machine without increasing the numbers of either; in that way lies economy.” Examples of force multipliers for the ADF include: improved communication, command and control facilities, air-to-air refuelling pods for Boeing 707 tankers, over-the-horizon radar (Jindalee), a fleet underway replenishment ship (HMAS Westralia), and airborne early warning and control aircraft (AEW&C). However, apart from an implicit acknowledgement that space assets will sometimes be used as a medium of communication and/or navigation, the White Paper makes only a passing reference to the use of space assets for Australia’s defence and its tremendous potential virtually ignored.
Space as a Force Multiplier

Because of Australia’s vast area, the use of space as a force multiplier is a compelling option. For example, several low earth orbit satellites, particularly if in an equatorial orbit and with 90 minute revisit times, could provide detailed electronic, optical, infrared and multi-spectral intelligence and tactical targeting data over most of our region of military interest. Space as a force multiplier is well recognised by both the US Space Command and the Soviet Armed Forces. Indeed the US Space Systems Handbook for Staff Planners and Operators begins with words:

Using space systems, whether for communications, reconnaissance, surveillance, environmental monitoring, tactical warning or position or navigation, provides a potential force multiplier for tactical, operational and strategic forces throughout the spectrum of conflict.

The necessity for force multipliers is particularly pressing for Australia because in any credible contingency other than low-level conflict, the ADF would most likely be confronted by a numerically superior force. Thus, as Air Marshal Newham has stated, “The size of our area of interest and our probable numerical disadvantage imply that technology must substitute for size in our force structure.” The prophetic truth of this statement was borne out in the Gulf War, where superior technology applied in an offensive campaign devastated a numerically superior force in defensive positions of its own choosing. The use of space assets throughout the Gulf War was so pervasive at all levels and contributed so much to its success that some US planners are calling the conflict the first space war.

Force Enhancement Capabilities from Space

ADF conventional forces can enhance their preparedness and effectiveness through the use of a range of space capabilities such as communications; navigation; intelligence/surveillance; mapping, charting and geodesy; environmental sensing, reconnaissance and search and rescue. This list of space capabilities is not all encompassing, but it does provide an indication of the range of defensive space systems that would be most suitable for Australia’s remote location and in accord with current defence posture. While this article will concentrate on the military applications, the reader should be aware that these systems have an inherently dual nature, ie. both military and civil applications. For example, in the civil sector there are nine commercial satellite communications systems for domestic purposes and over 500 transponders in use. There are many other global, regional and domestic satellite communications systems belonging to: INMARSAT, ESA, ARABSAT, MOLNIA, Canada, Mexico, Brazil, Japan, PRC, India, Australia, Indonesia and France. Remote sensing satellites can also be used for a diverse range of civil applications from weather forecasting, mapping, geodetic surveying to crop, fishery, forestry and mineral forecasting. Let me now discuss the main ways in which the use of space would greatly enhance ADF effectiveness.

Communications

Satellite communication systems already provide significant support to military forces worldwide. Most of these satellites are either in geosynchronous or molniya orbits above the earth and provide reliable, worldwide, high capacity, secure voice and high data rate communications. The US military currently places a heavy emphasis on satellite communications systems that carry the bulk (about 70%) of the US military strategic communications traffic and a significant portion of tactical traffic. The Soviets, with the world’s largest landmass, are also highly dependant on satellite communications systems. To bridge a country that spans half the globe, the Soviets have found satellite communications to be “three times cheaper than radio relays and they can be built ten times more quickly.” Nearly one half of all operational Soviet satellites are devoted to communications missions.

The ADF has also recognised the utility of satellite communications and plans to lease a transponder on the AUSSAT B satellites due for launch in June and September 1992, depending on the availability of the Chinese Long March boosters. This system will be known as DEFAUSSAT and will form part of the ADF Defence Integrated Secure Communications Network (DISCON) to augment and improve survivability of existing links between major communications centres currently using High Frequency (HF) circuits and telecommunication landlines. Military communications will be further augmented by MILSATCOM, an L Band transponder on AUSSAT B that covers
continental Australia. However, space communications should play an even greater role in Australia’s defence. The basic strategy for Australia’s defence places heavy emphasis on integration of army, navy and air force operations. This integration and joint Services approach at both the strategic and tactical levels relies heavily on the rapid exchange of information to support timely decision-making. Fundamental to this approach is an effective and well functioning command, control, communications and intelligence network. Australia’s vast area of military interest and limited support infrastructure throughout the bulk of the area makes it imperative that the ADF develop the use of space communications at all levels.

The importance of developing this capacity must not be played down or ignored. Significant portions of the C2I process, such as communications for coordination, surveillance and warning, can be conducted more efficiently, and often at much lower cost, from space than by any other means. Thus satellites can provide highly efficient command and control networks for use in the whole spectrum of military conflict. This conclusion was borne out in the Gulf War where the lack of infrastructure in the area of operations made satellite communications the only effective option for C2I. Throughout Operation Desert Storm, the US Defence Satellite Communications System (DSCS) provided the bulk of theatre communications. Despite communications requirements increasing by a factor of 30, DSCS assured tactical commanders had the ability to communicate wherever and whenever they wanted. For the Navy, satellites capable of transmitting blue-green laser light can communicate with submarines at operational depths without impairing their flexibility or their positions, thus providing a commander the capability to communicate directly at any time with all his submarine assets.

The strategic advantage and force enhancement provided by satellite communications gives today’s military commanders added advantages only dreamed of 30 years ago. As few as four geostationary satellites can provide a commander with worldwide, instantaneous, secure communications coverage. However, a problem with current generation communications satellites is their vulnerability to electronic jamming from anyone in their extensive fields of view. But improvements in satellite antennas and radio transmitters will soon permit a shift to extremely high frequencies (EHF) which will enable communications signals to be focussed into narrow beams and switched to different locations on a prearranged schedule. Since a potential jammer must be in the beams footprint to effectively intercept or jam communications, EHF technology will significantly reduce satellites’ vulnerability to electronic countermeasures.

### Navigation

Space also provides the medium for operating worldwide navigation systems that enhance the utility of ground, sea and air forces by providing accurate positioning and navigation information; for self location, over-the-horizon targeting and, steering directions to name only a few. The most recent system available is the NAVSTAR Global Positioning System (GPS) which provides a passive, all weather, jam resistant, continuous operation space based radio navigation system. The ADF is already committed to an acquisition program for GPS terminals that will provide highly accurate worldwide three dimensional position/location as well as velocity and time information. Terminals on ships, aircraft, vehicles and in manpacks can be located with a spatial accuracy within 15 metres, velocity accuracies of 0.1 metres per second, and timing accuracies within a millionth of a second.

The capabilities provided by GPS will enhance the combat effectiveness of terrestrial forces in many ways that many are only just beginning to be realised. In the future, the use of GPS or a similar satellite navigation system will become so pervasive that they will form an integral part of nearly every combat scenario. Examples for the use of GPS are already committed to an acquisition program for GPS terminals that will provide highly accurate worldwide three dimensional position/location as well as velocity and time information. Terminals on ships, aircraft, vehicles and in manpacks can be located with a spatial accuracy within 15 metres, velocity accuracies of 0.1 metres per second, and timing accuracies within a millionth of a second.

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In a range of scenarios, the accuracy of GPS has already proved to be a powerful force multiplier by allowing: helicopters to make full instrument night landings within a few feet of a designated spot; aircraft to refuel from tankers without the need for any other aids; supplies to be parachuted to within 30-40 feet of a ground marker; an 80% increase in first hit probability of direct and indirect fire weapons; and blind bombing at night with conventional bombs to within 10-20 feet of target centre.
To the Navy, the real improvement that GPS will provide is the ability for ships to determine their location at sea as well as the location of targets through differential offsetting techniques. Ships will be able to rendezvous, manoeuvre, and navigate with a minimum of communication in all weather conditions thereby greatly enhancing warfighting potential. GPS will also improve the accuracy of both minelaying and minesweeping operations. Tasks such as setting buoys in harbours to indicate safe channels can now be easily done with millimetre accuracy. The Soviets will have a capability similar to GPS with their Global Navigation Satellite System, GLONASS. These capabilities will have a major impact on future naval strategies, and indeed on strategies across the whole range of weapons systems and operating mediums.

The small lightweight GPS terminals known as SLUGGERs were one of the outstanding successes for the allied ground forces in the Gulf. They allowed armoured and logistics columns to rendezvous precisely in all weather, allowed dispersed forces to group in a precise location and at a precise time for a concentration of mass without any radio frequency (RF) emissions to betray their positions, and generally reduced confusion by allowing units to know their exact location at all times. So popular was the SLUGGER among the users that many individuals and unit commanders who could not obtain them through the system wrote direct to the manufacturer in the States and requested they send them a SLUGGER (costing about $4,000) and bill their personal credit card!

Intelligence gathering or surveillance from space refers to monitoring of a particular area, activity, or frequency band. The intelligence function especially benefits from the use of space as large amounts of intelligence data collected from a wide range of sources can be transmitted quickly and accurately direct to military commanders in remote locations. Information can, for example consist of a mixture of reports; digital imagery, SIGINT and ELINT, all provided quickly and in a package tailored to the needs of the particular commander. For example, one of the many facilities available on the current LANDSAT system is its ability to discriminate among different wavelengths which is a capability not available from other sources. Thus Australian defence planners could obtain near real time information on shoals and anchorage areas for the Navy; and vegetation, terrain, location of ground water, and lines of communication for the Army. However, LANDSAT normally has limited near real-time capability due to processing requirements at the receive station and its 16 to 18 day earth coverage cycle due to target revisit times.14

Low earth orbiting satellites make ideal platforms for collecting communications intelligence. For example, at 400 Megahertz, the US Argos satellite in a circular orbit of 800 kilometres can now detect and track to within 1.75 kilometres, a transmitter that radiates only one watt of power.15 The presence of such a capability could work to our advantage in two ways; either by forcing enemy commanders to adopt strict emission control procedures that might impair efficiency, or it can allow the collection of valuable intelligence data.

Surveillance

Effective surveillance is a crucial element of Australia's strategy of defence in depth. Yet the process of building a coordinated and integrated surveillance network with total coverage of our area of defence interest appears fragmented. Undue emphasis appears to be placed on Jindalee OTHR to the detriment of other potentially more cost effective sensors such as space assets or AEW&C. Surveillance from space based radar systems has a tremendous potential in this regard. Such systems could be useful to Australia by aiding air defences through augmenting existing radar coverage, by changing orbit to fill critical gaps in existing coverage, and by providing strategic warning of enemy air and surface activity. A space based radar also has great application for civil air traffic control, surveillance of illegal fishing in territorial waters and detection of illicit drug trafficking. Technology exists for such a system, but high costs may demand that it be shared among several nations.16 The existence of space based radars would provide a potent force multiplier and play a large part in shaping future defence strategy.

Apart from radar, there are three other categories of satellite surveillance sensors: imagery or optical, infrared, and multispectral. In the first category, NASA has already flown a Large Format Camera with a 10 metre resolution.17 In clear weather and in daytime, this resolution would permit identification of frigate sized ships at sea by type. Infrared sensors, on average have three times worse resolution than
imagery sensors. In clear weather and less than ideal lighting, these sensors should still be able to type and identify small surface combatants. Multispectral sensors such as those on the French SPOT satellite with its 10 metre resolution has a similar capability to both the imagery and infrared sensors, but with the added capability of far-infrared which could corroborate identification made through other wavelengths. The use of these types of sensors would provide Australia with early warning of potential enemy force concentration, force disposition and force make-up.

### Environmental Sensing

Environmental sensing from space provides meteorology, oceanography and mapping support. Accurate knowledge of the weather has always been a key to military operations, and space based weather satellites are the only means of obtaining data to accurately predict the weather more than 24 hours into the future. Recent examples where the value of weather information as a force multiplier occurred in the Falklands campaign. British after action reports from this campaign emphasised strongly that wide area satellite coverage, with precise meteorological and oceanographic data and forecasts were critical to the success of military operations. This was also true in the Gulf War where information from the US Defence Meteorological Satellite Program (DMSP) satellites proved invaluable in so many ways. For example, the weather over the targets could be accurately predicted which allowed guidance (IR or visual) for "smart" bombs to be optimised for the target conditions. DMSP also provided very accurate, near real-time information about sandstorms and other unusual phenomenon which allowed ground and air forces to be fully prepared in weather that was the worst in 14 years.

Mapping support from space can also provide vital information at all levels of military operations. Satellite systems such as LANDSAT or the French SPOT can be used to generate reliable and up-to-date maps and charts of regions of interest that would be denied by other methods. In the Gulf, very few accurate maps were available and LANDSAT and SPOT provided the only highly accurate large scale tactical view of the various areas of operation. For example, the USAF obtained 108 SPOT images (10 meter resolution), which were electronically overlaid on digital terrain maps used by pilots to provide a never before seen capability in the field of mission planning, and made a big difference in the accuracy of attacks.

The use of an oceanographic satellite would be particularly useful in the Australian environment to enhance the effectiveness of the ADF's Anti-Submarine Warfare (ASW) forces which have to operate over vast ocean areas in the region. An oceanographic satellite such as the proposed US Navy Remote Ocean Sensing System (N-ROSS) or the Soviet Ocean R series with side looking Synthetic Aperture Radar (SAR) would provide a major enhancement for existing maritime and ASW forces. Firstly, it would allow a more effective use of ASW aircraft by detailing areas where buoy washover and high ambient noise would nullify their systems; it would provide a precise ocean map showing the surface position of ocean fronts and eddies which would allow ASW platforms to select the appropriate tactics, lay more effective sonobuoy patterns and generally waste less time searching the wrong areas; and provide information to allow submarines, ships or convoys to hide in acoustically complex waters or adverse weather.

### Search and Rescue

Space can also be used for search and rescue. No longer do downed airmen or drifting lifeboats have to rely on line of sight radio signals. A constellation of three satellites, such as the combination of the Soviet COSPAS and US SARSAT, can provide almost global coverage, continuous monitoring of emergency frequencies and locate distress beacons to within one or two nautical miles. Future collaboration with Japan, France, Canada, Brazil and other countries will expand SARSAT for global coverage and more precise position fixing.

### Lack of Defence Commitment to Space

Before continuing I should clarify why I consider space to be the fourth dimension of warfare. There is a common belief among my fellow Air Force officers that space is merely an extension of the air environment. While this is true in purely physical terms, I question its relevance in military terms. Historically, the navy was manned by soldiers as an extension of the land battle until it was realised that the sea was a different medium, requiring very different military skills and doctrine. In the same way, the air war was initially fought by soldiers and
sailors until it was realised that the air environment required new skills and doctrine. Thus independent air forces were born. I believe space will follow the same evolution. The dimension of space requires military skills and doctrine as different to each of the other Services as they are to each other. Space assets can be used independently as well as providing extensive support for land, sea and air forces, just as air forces act independently as well as providing support for land and sea forces. In the ADF context, each of the three Services must be prepared to allow control of space resources to come under the control and development of one specialist integrated space force if our scarce national resources are to be used most effectively.

This brings me back to the point of the apparent lack of commitment by Defence to the military use of space. In the 1950s, Australia had a strong space program with Woomera being one of the busiest rocket ranges in the world. Today, the range stands idle and our defence space program is at a crossroads. I believe our ambivalence stems from three causal factors. Firstly, there is no advocacy base for space in the ADF. There is no Space Command or a specialist space directorate in the Department of Defence as there is in the United States, nor is there a strong industrial lobby group pushing the government for the manufacture of military space assets. Secondly, there is no organisational hierarchy for space specialists in the ADF, especially at the policy making level. Consequently, while there are a few technical specialists at the lower ranks, there are no organisational or personal motivators to advance or develop policies for an overall strategy for the military use of space. Finally, there is no overt government commitment to the necessity or strategic advantage of using space. One of the few mentions of using space for military purposes in the White Paper is in the context that an adversary would need to use the wide area surveillance capabilities of satellites for effective interdiction of Australian trade in open ocean areas. A fair assessment, but what about the same potential that would accrue to the ADF if they had such space assets?

Lack of commitment to space is not confined to the defence portfolio. This backsliding appears to be endemic in Australia which I find paradoxical in a country purportedly trying to become the clever country. USA, UK, France, Germany, Sweden, Canada, Japan, and India all have programs of space research that interact closely with their industrial base and so raise the technical competence in associated fields such as complex instrumentation, control systems, data acquisition, processing and transmission. And now Taiwan has announced it’s going to have a space program. Yet the Australian Government’s industry policy does not pursue the opportunity that space provides to gain a stake in the technology necessary to sustain modern industry.

This apparent ambivalence towards the use of space on the part of the government inhibits the formulation of an unambiguous military doctrine on the use of space and severely restricts the full and effective utilisation of an important dimension to the defence of Australia. In the nineteenth century, Clausewitz considered the issue of new forms of warfare and observed that, “Any nation that uses it (the new form of warfare) intelligently will, as a rule, gain some superiority over those that disdain its use. If this is so, the question only remains whether mankind at large will gain by further expansion of the element of war.” There is a parallel with the current attempts to deal with the concept of space power. On one hand the Australian Government is pursuing a desirable policy for demilitarising space while on the other acknowledging, but not necessarily supporting the limited military use of space by the ADF with statements like “space technology... has the potential to make very great contribution to national defence.” The problem with this situation is that the goal to demilitarise space is not universally supported by other nations and secondly, government rhetoric has not been backed up by a positive defence or industry space policy. The reality is that space has been militarised for the past 30 years and Australia must accept that space can be used for both peaceful research purposes and for effective military purposes in the defence of Australia. Thus, in the first instance, defence planners must be allowed to consider the use of the full range of space options that effectively enhance the existing conventional forces and provide what might be the crucial edge in any level of conflict. Secondly, and more importantly, defence planners must forget any inter-Service rivalries for the control of space assets and incorporate the dimension of space into the overall strategy for the defence of Australia and utilise space as a potent and cost-effective force multiplier.

Colin Gray has said, “The unique strategic characteristics of a particular weapon are of little interest if those characteristics are undesired for deterrent effect or for actual performance in combat.” In the Australian region, the presence of space assets would provide an effective deterrent because of their unique attributes, force multiplier effect on terrestrial forces and the presence of a surveillance and overflight capability not available
in any other fighting dimension. This would provide the ADF with a crucial edge that would cause an aggressor to think twice before attacking Australia.

### Potential Use of Space in Various Levels of Conflict

To understand how and when space assets could be used in the Australian environment, there must be a clear understanding of the type of threats that the government expects in the region. Australia’s stable political situation and enduring physical and demographic features create the illusion of a benign threat environment. The most credible contingencies that Australia could face are low levels of conflict that could arise in the short term. Any high intensity conflict would require long lead times, concentration of large amphibious forces and provide clear warning signs. The 1987 *White Paper* stated that: “No regional country now has the capability — nor the motivation — to sustain high level military operations against Australia.” While this belief is still essentially held, several recent destabilising events in the south-west Pacific, namely two coups in Fiji, disturbances in New Caledonia and Bougainville, and political instability in Vanuatu, have led to a re-examination of strategic defence thinking. In 1988, the Australian Defence Minister, then Mr Beazley, announced a new assessment that: “intervention of a foreign power in the south-west Pacific could not be ruled out in the next 25 years,” and that “Australia would militarily intervene anywhere in the region if Australian citizens were in trouble.”

Mr Beazley named China, Japan, India and the Soviet Union as being the major powers with the potential to interfere in regional affairs if they consider their interests threatened. Space based assets can provide significant support to military operations throughout the whole range of possible conflict contingencies as discussed earlier in this article; from peace and times of increasing tension through to conflict involving the attempted invasion of Australia. Table I provides a summary, which is by no means exhaustive, but indicative of how space assets could serve the ADF in a range of credible threat conditions.

Table I shows quite clearly that significant support to military operations could be provided from space based assets. The Table is not meant to imply that much of the same support could not be achieved by other conventional means, but space provides unique advantages both at the strategic and tactical level. At the strategic level, space assets can provide large scale, if not global coverage, and detailed intelligence and surveillance over an adversary’s territory that would not be available by other means. The knowledge that Australia would receive such early warning from space of enemy activity in his homeland can provide a powerful deterrent against further escalation as well as providing invaluable warning time for Australia to take political, economic, psycho-social and military counter-measures. At the tactical level, the local commander should be confident of space assets providing: global communications support; precise navigation, position fixing, and weather and timing data throughout the spectrum of conflicts; mapping information; and various degrees of surveillance, reconnaissance and intelligence data tailored to his theatre of operations.

Another advantage of satellite systems is the survivability of both the satellite and the ground station. Only the Soviets have a proven anti-satellite system so the only threat to Australian space sensors would occur in the unlikely event of a direct conflict with the USSR. Ground stations are also inherently survivable as they can be located well away from any potential battle area.

### Force Structure Implications

The *Dibb Report*, which was commissioned by the Minister for Defence as a forerunner to the *White Paper*, states that the Australian Defence Force should be developed in a way that provides: ...the capabilities necessary to permit the ADF to fulfil its peacetime obligations, to satisfy our need for an independent military capability, and to provide a basis for expansion in the event of deterioration in our strategic circumstances.

Given the preceding discussion on the force multiplier effect of space systems and the advantages of using space in various levels of conflict, the capability that space provides would clearly fall under the guidelines produced by the *Dibb Report*, the *White Paper* and many other publications. However, the real world intrudes. The Australian defence budget was limited to AUS8970 million dollars in 1990/91, and when the fielding of a single military satellite can cost up to AUS600 million dollars, then something has to give.

The limited defence budget and the way it is allocated would place the acquisition of any satellite systems in direct competition with terrestrial systems for scarce funds and resources. Thus the implications to force structure are that trade-offs between some


Table 1

<table>
<thead>
<tr>
<th>Condition</th>
<th>Possible Situation</th>
<th>Potential Support from Space</th>
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</thead>
<tbody>
<tr>
<td>Peacetime</td>
<td>Forward deployed forces in Malaysia, Cocos Is and Papua New Guinea</td>
<td>Strategic warning.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Communications, Navigation, Weather, Surveillance</td>
</tr>
<tr>
<td>Increased Tension or Special Ops</td>
<td>Potential for limited military operations</td>
<td>Same as peacetime plus near real-time tactical warning.</td>
</tr>
<tr>
<td>Low level Conflict</td>
<td>Enemy forces harassing remote settlements, shipping and outlying territories</td>
<td>Global communications, Weather &amp; Navigation tailored for theatre of operations.</td>
</tr>
<tr>
<td></td>
<td>Conventional but still limited military operations. Increased air &amp; sea harassment, frequent &amp; intensive raids. Direct military confrontation.</td>
<td>Surveillance, Intelligence and Reconnaissance with C³ Support.</td>
</tr>
<tr>
<td>Escalated Low Level Conflict</td>
<td>High level military operations. Attempt by enemy to secure lines of approach &amp; invade Australia, and/or Invasion of Australian Protectorates/Territories.</td>
<td>Same as for low level. Increased importance of near real-time tactical warning. Target identification. Information that allows gaining &amp; maintaining the initiative.</td>
</tr>
<tr>
<td>More Substantial Conflict</td>
<td></td>
<td>All systems (civil and military) on full wartime support across all missions. Total coverage of all approaches to Australia.</td>
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</table>

mission areas will become essential. In other words, can space assets do the same job faster, cheaper and better, or are space assets the only way to do the job?

Consider the question of Australia’s limited radar coverage in the area of military interest. What trade-offs could be made with other surveillance systems like AEW&C and Jindalee OTHR? Could a space based radar provide better coverage at a lower cost per square mile? If space based radar provided complete coverage and improved warning times, F/A-18s could be more selectively scrambled to intercept incoming targets. Because of the improved coverage provided by space based radar, then less aircraft may be required to fly combat air patrol or reconnaissance missions. Thus, if space based radar provided more effective intercepts, then a trade-off may involve fewer interceptors or reconnaissance aircraft and/or fewer AEW&C aircraft. The Navy would also benefit greatly from space based radar as their radar horizon would be extended from about 100 miles to a global coverage of their theatre of operations. Thus they could also make resource trade-offs, such as reducing the number of surface combatants, due to increased effectiveness. There are many permutations in the trade-off process and each decision should be based on a combination of national objectives and what can do the job most cost effectively in the Australian environment.

However, the decision to make trade-offs for military space assets will be difficult in the Australian environment for exactly the reason I have discussed in the preceding paragraphs: namely the lack of government endorsement of the military use of space, the lack of an advocacy base for space, a lack of commitment by the military to fully utilise the medium of space, and the absence of an organisational space infrastructure at the policy level. In addition to these drawbacks, there are three other factors that make any future force structure changes and trade-off decisions with space systems very difficult.

Firstly, space systems are fewer in number, have a higher unit cost, and are subject to different logistic concepts than terrestrial systems. On the one hand these factors mitigate against combining space forces into any one of the existing armed services, where a small but separate space force trying to compete for scarce resources against the well established tri-service infrastructure might fail to give space an equitable hearing in difficult trade-off decisions. On the other hand, the division of space forces among the Services would also create problems as existing conventional force priorities would subsume space priorities within each service and difficult trade-off decisions would be weighted against space systems — Catch 22.

A second reason that any trade-off decisions will be difficult is that the payoffs between space and
terrestrial systems are different and hard to compare. As discussed, space systems are force multipliers and enhance the efficiency and effectiveness of weapons systems. However, the force multiplier effect is hard to determine in any quantitative sense, yet budgeting and trade-off decisions are, by their very nature, quantitative. Finally, trade-offs can be hard to gauge because the decision for a space system can be all or nothing. Because of the orbital mechanics of space and the limitations of sensors and data transfer, there is a set number of satellites required for a particular job. These numbers cannot be cut back as some terrestrial systems can and still operate effectively. Thus the investment question for space assets is to do the job, or not do it at all.

The implications for force structure are clearly many and diverse. The government and the ADF must accept the existence and advantages of using the medium of space for military purposes and develop a doctrine for space employment and a coherent strategy for its military use. This must be a priority for the next decade. Not to do so will not only deny the civil sector a chance to participate in major technological advances but will deny the military sector the use of a potentially vital edge in any regional conflict.

Regional Cooperation

Force structure trade-offs may not be enough to satisfy the initial capital investment in a military space program. The Australian Government would probably need to have a cooperative program with regional allies and friends to defray some of the costs for satellites and ground stations. I believe there are four main options that are viable in Australia's current political, economic and strategic climate. These options will be discussed in what I think are their order of merit in terms of providing the ADF with an effective indigenous space capability.

The first option is to collaborate with New Zealand provided their government and military were interested and willing to use the advantages of space. New Zealand is undoubtedly Australia's closest ally in the region with largely overlapping defence interests and a shared cultural background. It is interesting to note that the 1987 New Zealand Defence White Paper also failed to address the issue of using space assets. Furthermore, New Zealand suffers from many of the same problems as Australia; a small population of about 3.5 million, a small defence budget and large ocean area in the South Pacific as their region of primary military interest.

Any range of collaborative force enhancing satellites would easily cover both nations' regions of interest. Thus, although economic assistance would be small, the enduring closeness of the two countries would ensure the optimum utilisation of the benefits from an indigenous space program. Thus New Zealand should be the first option for full regional cooperation in a military space program.

A second option would be for Australia and New Zealand to pursue a tripartite space cooperation program with the US. However, the recent rift in US—New Zealand relations over the nuclear issue may preclude this type of cooperation in the short run. In that case, a bilateral arrangement with the US would still be advantageous to the ADF. Australia and the US are close allies and share many interests in Australia's region, so a common denominator for space cooperation, technology transfer and infrastructure support should be easy to find. Australia already cooperates with US Space Forces at Woomera, so that avenue could be greatly expanded to a fully cooperative military space launch and satellite development program. The use of the smaller and cheaper US LIGHTSATs launched from refurbished sites and facilities at Woomera may be an opportune way for the ADF to take the first steps in a military space program that will greatly enhance the effectiveness of existing conventional forces.

The third option would be for Australia to take the lead in forming a regional space agency similar to the European Space Agency. For example, Australia, New Zealand, Singapore, Indonesia and Malaysia (ANZSIM?) could be prime contenders to form such an organisation. The proposed launch site at Cape York would provide a common site for all nations and could be developed into a commercially viable spaceport. Initial studies indicate that a bare base could be in place at Cape York by 1993 at a cost of AUS$1.5 billion. The base could have multiple launch pads, a multi-bay space vehicle assembly building, along with a port for handling ships up to 20,000 tons, a 3,700 metre runway, tracking facilities and administration and town facilities. However, from a military viewpoint there are many drawbacks with this option. To begin, not all the nations in the region have common military interests so the use of any joint satellites of facilities may be open to dispute. Secondly, Cape York is located at the extreme northern tip of Australia so in any conflict the space launch site would be a prime target which would be difficult to defend. Nevertheless, the development of this option primarily for civil interests would provide an impetus
to an indigenous Australian space program that would undoubtedly give spin-offs to the ADF through limited involvement, technology transfer, build-up of an industrial base and the military use of civil space assets in an emergency. This option could be pursued in parallel with option two and provide an integrated space program for both the military and the civilians.

A fourth option would be a series of bilateral arrangements with various nations to cooperate in areas of expertise. For example Australia could join with Canada who are making significant progress with radar satellites, or the French with their high resolution multispectral surveillance satellites, or Japan. Indeed Australia already cooperates with Japan on several space programs such as sharing data from Japan’s Marine Observation Satellite (MOS-1), and their meteorological satellite, GMS3. However, this is a fragmented approach and would not solve the problem of nurturing an indigenous Australia space capability.

Australian defence is at a watershed. Significant strides have already been taken towards fulfilling a coherent strategy of self reliance as detailed in the 1987 Defence White Paper. However, progress must be made on the issue of the military use of space.

This article has shown that Australia’s enduring strategic circumstances makes the use of space assets, especially as force multipliers, a compelling defence option. Given the vast area of military interest and the limited manpower and financial resources, the use of space in conjunction with other land based force multipliers is the best way to ensure the maximum utility from existing combat forces.

However, the application of space power as an integral part of any conflict is still in its infancy and does not have the advocacy base or military champions in the ADF to offset the inertia and traditional thinking from the proponents of existing forces. The Soviet Union has long recognised the prime importance of the military use of space. Even a cursory examination of the Soviet’s defence structure, space program and doctrinal writings will indicate the importance of space to Soviet strategy. Perhaps the extreme end of this view is exemplified by a quote from a Soviet author who says:

Whoever can seize control of space — that main area of future wars — will be able to change the correlation of forces so decisively that it will be tantamount to establishing world supremacy.42

This example is only meant to illustrate how important space can be to one nation’s military posture and to make the point that Australian military planners cannot continue to overlook the importance of using the medium of space. Vice Admiral Ramsey, USN, has said:

There are hundreds of yet unthought of ways that space based systems can support the land, sea and air commander. These uses will make it possible to economise US forces by transferring some tasks to space systems, which will be on task 24 hours a day, 365 days a year, in peace, in crisis, or in war.43

By addressing the use of space in combination with terrestrial forces, the ADF can provide the optimum balance of forces to meet the range of contingencies in the Australian environment. By not addressing the issue, the ADF is abrogating a trust to the Australian people to provide the best possible defence for the country within political and economic constraints.

The challenge for the future is for government and military leaders to urgently formulate a coherent national military space policy; a policy that: recognises the need for the military use of space, accepts the duality of military and civil space systems and provides a vision for the future employment, organisation and integration of space assets into Australia’s defence structure. The use of space is too important to be left to the vagaries of the free market and private investors.

The lack of perceived threats or bureaucratic inertia must not be excuses for inaction by either the government or the ADF. The challenge today is to develop a space policy for the future, as the future defence of Australia rests on the decisions taken today.

“Today the kind and quality of systems which a nation develops can decide the battle in advance and make the final conflict a mere formality — or can bypass conflict altogether.”

General B Schriever, USAF, 1960

Prophetic words in the light of the lessons from the Gulf War.

NOTES

1. The Defence of Australia, 1987. A Policy Information Paper, pp.23 and 30. The White Paper states that no nation in the region currently poses a threat, although this could change at some future time. The White Paper goes on to say that the only countries with the capability to sustain an invasion on Australia soil are the USA and USSR — neither contingency being credible.


3. Satellites in Geosynchronous (GEO) orbits remain almost stationary in near circular orbits above a chosen longitude on the equator. Orbital mechanics dictate that GEO orbits are about 36,000 kilometres above the earth. Molniya orbits are highly elliptical (400 km by 40,000 km) orbits inclined at 63-65 degrees to the equator. At their perigee, satellites in
these orbits remain high over the Soviet landmass and provide 8 hours of continuous communications linkage. As few as three satellites in Molniya orbit can provide 24 hour coverage, although 4 are normally used. The Soviets pioneered the use of Molniya orbits because antennas located in the Soviet far north cannot readily access satellites in GEO orbit without unacceptable signal attenuation.


9. Cdr. Frederick J. Glaeser, USN. In his article “Space: A New Dimension in Naval Warfare” states that geostationary satellites provide unreliable service above 60 degrees latitude. However, this deficiency can be overcome by supplementing polar communications with low earth orbiting satellites. US Naval Institute Proceedings. May 1987, p.125-126.

10. Ibid, p.126.


13. Mark Peecook, op cit, pp. 37-38. To me some of these claimed improvements provided by GPS seem extravagant, but I have not been able to confirm or deny them from other sources.


17. A 10 metre resolution means that two point sources of equal intensity that contrast with the background in brightness can only be separately distinguished if they are 10 metres apart in a direction perpendicular to the line of sight. William Howard III, op cit, p.44.


22. McNeese. op cit, p.80. In another article by Mark Peecook, op cit, p.38, he states SARSAT accuracies to be only 3-12 miles. However, I assume that the poorer location fixes are from the VHF distress beacons (121.5 Megahertz) which suffer from degraded signals due to atmospheric interference. The better accuracies are from beacons operating at 406 Megahertz.


27. From a speech by The Hon Gordon Bilney, MP, Minister for Defence Science and Personnel at the opening of the Aries Symposium, Joint Services Staff College, 14 Mar 91.


29. The Defence of Australia, op cit, p.25.


34. The arguments I have presented in this and the following paragraph are a synthesis of my ideas and data from several sources including: Donald Latham, op cit, pp.43-44; and Space: Force Enhancement, AWC Seminar Guidance Notes, Maxwell AFB, 5 January 1988, pp.5-13.


36. Paul Dibb, ibid, pp.52-58, and The Defence of Australia 1987, op cit, pp.23-33, and General Sir Philip Bennett, "A Military Strategy for Australia." RUSI, 1985, p.13. Although none of these reports specifically mention space assets, many of the required capabilities they describe are precisely those provided by space systems.


39. Indonesia already has a space capability with their communications satellite PALANBANG.

40. Mark Rigby, "Launch Sites under the Southern Cross", Spaceworld, pp.14-15. The author states that the US, Japan, Europe, China and the Soviet Union have all expressed interest in the idea of an Australian launch site in the Cape York Peninsula, particularly because of its closeness to the equator — 11 degrees south, thus reducing the cost of putting satellites into geosynchronous orbits.

41. Ibid, p.16.


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The Conceptual Basis for Australia's Regional Security in the 1990s

By Major W.G. Horne, RA Sigs

Introduction

In December 1989, the Minister for Foreign Affairs and Trade, Senator Gareth Evans, released a Ministerial Statement titled *Australia's Regional Security*. The Minister welcomed the resultant academic interest and criticism. He stated that "... foreign policy is too important to be left only to the professionals." And added that his statement was intended "... more as a building block in the refinement of Australian foreign policy thinking than as a definitive Mosaic tablet." He reminded his critics that the statement was not an academic analysis, but a political statement which "... focused on our regional security, and should be judged as such."

A Building Block

This article is not intended as an original piece of work, but rather as an overview of both the statement, and the scrutinies and criticisms levelled at it. The basic question being asked is whether the Ministerial Statement offers a sound conceptual basis upon which realistic foreign policy can be based and implemented.

It should be noted that critics are in the main positive that such a comprehensive and frank statement has appeared at all. In the past Australian foreign policy has simply been "... reactions to initiatives taken ... elsewhere." Despite this acceptance of the statement, the criticisms are real. And despite the Minister's claim that the statement was only intended as a building block, it was nonetheless a policy statement which would be read, studied and interpreted by not only various elements of our own society, but by our regional neighbours as well.

Criticisms of the statement commence at its opening paragraphs where it is stated that the four main priorities of Australian foreign policy are: firstly protecting our security through the maintenance of a positive security and strategic environment in our region; secondly in pursuing trade, investment and economic cooperation; thirdly by contributing to global security to the extent that we can, and finally by being a good international citizen. The statement goes on to say that our main concern is the first of these priorities, and that "... it is difficult to imagine our sovereignty being put at risk except in the context of a serious threat to our physical integrity." This statement places a very narrow definition on our sovereignty, ignoring the threats that can be made to our economic health because of our integration, and therefore exposure, to the international financial system. The Department of Foreign Affairs and Trade (DFAT) itself recognises our position. While successive General Agreement on Tariffs and Trade (GATT) negotiations have reduced tariffs around the world, other protective measures have expanded. The economic protectionist policies of the soon to be single European Community (EC) and the counters to that being made by the United States, are indeed recognised by our policy makers as a threat.

In addition a number of contemporary issues may challenge the sovereignty of other nations. It is unlikely that environmental issues such as greenhouse emissions or acid rain, which do not recognise national borders, will be solved unless some aspects of decision-making are transferred to international bodies. For individual nations there is clearly a conflict of interest between protecting the environment and protecting various domestic industries.

Our Own Region

In defining our "own region" for the purposes of protecting Australia's security, the Minister states that it is basically the same as the Region of Primary
Security in the global context.

The statement, but firstly the statement looks at a "multidimensional" approach to security given in the 1987 Defence White Paper. This document, actually titled The Defence of Australia 1987, gives the RPSI as being "... in South-East Asia, the South-West Pacific and the East Indian Ocean." This is one level of the "multidimensional" approach to security given in the statement, but firstly the statement looks at security in the global context.

Global Level

At a global level two significant changes are occurring. The first of these is that of the ideological dispute between East and West (communism and capitalism) which has permeated all aspects of foreign relations since World War II, but which has fundamentally changed. In the past this created a bilateral situation where the choices of minor states were to align with either the United States or Soviet Union, or to attempt non-alignment. As shown by the unprecedented and very recent events in the Soviet Union, communism has failed, at least for that nation. This should not be construed however, to remove the Soviet Union as a significant world power. The United States is also questioning spending in areas such as Defence, and related pressures such as the future of the Clark Air and Subic Naval Bases in the Philippines, will tend to reduce United States influence. At the same time the influence of other world powers has emerged. This has diluted the ideological battle and produced a multilateral situation.

The other significant world powers include the emerging European Community which has a significant population base of 320 million, a sophisticated military, and an economy expected to rival that of the United States in size. Similarly Japan is a significant economic influence, although this should not be over-rated in a nation with limited geographical size and few natural resources. China is a nation with the world's largest population. Despite the Tiananmen episode and the fact that it will dominate Chinese politics for some time, the country will remain committed to internal modernisation of its industry, and to trade with the outside world. India has the world's largest population aside from China, and is committed to similar reforms as well as expanding its prestige and influence. The effects of all this for Australia are recognised in the policy statement. In the bilateral world Australia was comforted by the dominant influence of the United States in our region. Any withdrawal of the United States from countries such as the Philippines would create a power vacuum. For Australia this means attempting to influence the uncertainties of who would attempt to fill that vacuum. In light of the dramatic changes which have occurred in the Soviet Union, and at least the possibility of a similar dramatic series of events in the Philippines, one must question a policy document which declares "... Renegotiation of the Military Bases Agreement with the Philippines will be a difficult, drawn out process." Does this indicate that we have a foreign policy process which will not be able to react to situations which occur more rapidly than expected?

The other significant global change has been economic globalisation. In some ways this has already been touched on in this article. Strides in communications and technology, and increases in world trade have globalised the world economy to a degree where nations place increasing emphasis on economic interests along with traditional political concerns. The policy statement recognises this fact, but as stated earlier gives only peripheral consideration to the impact of economic matters on Australia's security. Security is a broader concept than military security.

At this point the statement addresses Australia's overall security outlook, which naturally leads into a more detailed analysis of our region. Although the possibility of unforeseen upheavals are noted, the overall security picture is viewed as favourable. Despite this the statement accepts that Australia's security interests are affected by factors outside of our region. Australia is a medium power with little real influence on global matters, but at the regional level we are a significant power. Due to our place in the world we must relate "... our commitments and priorities to our capabilities," with a focus on South-East Asia and the South-West Pacific. As stated earlier, priorities must be set within these areas, with the top of our list being Indonesia and PNG.

Although our influence in global matters may be insignificant, at least in military terms, the statement confirms that the hosting of the Australian-United States joint facilities "... can undoubtedly make a significant contribution ..." to global security. The statement also gives confirmation to the Defence White Paper priority of pursuing Defence self-reliance "... within the framework of alliances, the
most important of which is ANZUS. Both ANZUS and the joint facilities have been criticised for some time.

Despite government policy on the joint facilities “contribution”, many have been concerned that they make Australia a nuclear target, and more basically their presence breaches Australia’s sovereignty. Narrangar in South Australia provides the earliest warning of a Soviet missile attack, but it is argued that it would be equally well placed on the US island of Guam. In addition this arms control role will be taken over soon by a navigational satellite system known as NAVSTAR, which will not require an Australian ground station. Pine Gap near Alice Springs collects signals intelligence (SIGINT) data collected from ‘spy’ satellites. Although its primary role is to collect data on the Soviet Union and China, critics argue that they are also used to spy on allies, including Australia. The effectiveness of this facility to verify arms control agreements is also questioned. The third facility is located at North-West Cape in Western Australia. This facility was once vital for Very Low Frequency (VLF) communications to US submarines. However, the station is now mainly used for communications to Australian submarines. Perhaps in view of this, and a range of factors including the controversy surrounding these bases, it would appear that the North West Cape facility will be transferred to Australian control in late 1991.

Framework of Alliances

Many have also been critical of Australia placing any reliance on our ‘framework of alliances’, especially of the near forty year old ANZUS Treaty which is considered to be one of the foundations of our security policy. Despite verbal assurances, critics point out that the Treaty itself offers Australia no guarantees of US support if we were attacked. Although this has been a well known fact for at least the last fifteen years, critics claim that the first twenty years of misrepresentation of the Treaty adversely affected Australia’s national security planning in the long term. Other benefits of ANZUS such as limited access to US intelligence are also considered to be a case where the costs to Australia (for example in military exercise costs) outweigh the benefits. The facts also support that ANZUS does not provide Australia with a special rapport where we can influence the US. The most recent case has been that of the US trade war with the European Economic Community. The US has, as a result of that ‘war’, eroded into traditional Australian markets for our primary produce. Three delegations to the United States on this issue have achieved very little.

On the positive side the withdrawal of New Zealand from the treaty does not necessarily signal its demise. Australia has a different set of security considerations than New Zealand. We are much closer to the South-East Asian region, and the uncertainties that poses. We also have moral obligations to an ex-dependency (Papua New Guinea), and new commitments in assisting the global balance; that is whether we agree or not the joint facilities. In addition, despite no guarantees, the Treaty sends a signal to any possible aggressor that a major consideration is at least the possibility of US involvement.

In discussing ANZUS and defence self-reliance this article has addressed the first of seven policy instruments, that being Military Capability. These instruments are identified in the Minister’s policy statement to describe the steps that can be taken in order to maintain a positive security environment in our region. The second instrument is Politico-Military Capability. The statement points out that the defence expenditure of all the ASEAN countries combined is roughly equal to that of Australia’s (US$4.98 billion in 1987). This military power enhances our national status and “... we should be conscious of it, and not embarrassed by it.” Although this can be enhanced by our Defence Cooperation Programme, the statement discusses regional security arrangements at length. The only functioning security arrangement in South-East Asia of which Australia is a member is the Five Power Defence Arrangement (FPDA). The statement sees the possibility of ASEAN taking on a military dimension and its membership being broadened. Although the statement stresses this should be a gradual process, even if it occurs at all, the critics question Australia’s real influence in the region.

While recent events are encouraging (a development which is put down to a more assertive Australian diplomacy) at present Australia is still an outsider looking in. Despite Australian initiatives, improvements in relations with say Indonesia, “... have improved because Jakarta has decided that they should improve.” In addition, comparisons of Australian and ASEAN GDPs and defence expenditures relate to the status quo, and are misleading. Simplistically it could be argued that Australia wants to jump on the economic boom of South-East Asia in order to benefit from what are in many cases
progressive economies. Australia's recent growth rate of four to five per cent is less than half that of nations such as Singapore and Thailand. If continued, such growth rates will merely support the perception in South-East Asia of Australia's lack of importance to the region.

The third policy instrument is Diplomacy, and in order to ensure problems in our region do not escalate, Australia needs to focus on individual countries. We need to recognise that each and every nation is different, with many having differing perceptions than Australia about matters such as human rights. Accommodation on both sides will be required, but even our extensive diplomatic expertise "... may need reinforcement to meet Australia's needs." This need however may be beyond the resources of DFAT. The Department has been cut back continuously in recent years. Under Minister Evans there has been an extensive diplomatic effort made, but with limited resources the ability of DFAT to maintain that level of activity must be questioned.

The fourth instrument is Economic Links. This area is viewed as an important one which enhances national security by creating "... substantial and mutually beneficial links within the region." The strengths of our economy are stated as being: that it is large (our GDP is bigger than all ASEAN countries put together) and growing, with a large resource and industrial base, and a large private sector with technical expertise in some areas. The constraints on the development of economic links include the continued protection of some of our inefficient industries and our poor industrial relations record. Although Australia is of minor importance to ASEAN (a little over two per cent of their exports) there is considerable future trade potential in the region. The most effective way of capturing this is for Australian companies to seek areas of trade which are complementary to those in South-East Asia. Australian initiatives such as APEC (Asian Pacific Economic Cooperation) are considered by the statement as excellent examples of how we can develop new connections in the region. Although the Asia-Pacific region has for some years been the fastest growing in the world, it is not a trading bloc, and nor is the objective of APEC to form one. The aim of APEC is to "... strengthen our ties with the Asian region and to redirect ... our economy towards this objective." Critics claim, however, that ASEAN nations will see moves to promote such forums as leading to a dilution of their authority within South East Asia. Australia's efforts in this region are an attempt to benefit from the economic strength our neighbours possess. Unfortunately the statement implies that all growth is good. But just as economic security has been shown to be an essential contributing factor to overall security, the impact of large growth rates can be very disruptive if the resultant benefits are not distributed equitably on a domestic basis. It is just such a situation which has contributed to the current problems of Bougainville.

Aside from these issues, the problem of our influence in the region is one of our own economic performance. As mentioned earlier Australia's growth rates are lesser than many nations in South-East Asia, and their perceptions of Australia are not good. As our credibility is strongly affected by our economic performance we may lose influence, despite our diplomatic efforts. Domestically we have a job ahead of us.

The other three policy instruments cited in the statement are firstly Development Assistance such as aid, which in South East Asia is claimed to be well targeted and of high quality, and in the South Pacific where it is the "... lifeblood of some countries." Then there is 'Non-Military Threat' Assistance where as a good neighbour we can assist the region in dealing with environmental, health and drug problems. And, finally, there is the Exchange of Peoples and Ideas which it is hoped will overcome the image problem Australia has in that some nations in Asia consider us economically unimportant, racist, overbearing and possessing inherent industrial relations problems.

What the statement does not address are the priorities in which these instruments of policy should be placed. Even more fundamental is that although the four main foreign policies are given a priority, nowhere are those priorities justified. The dilemma this presents is how the various policy elements will be handled in terms of allocation of resources to these "competing" elements. And in particular for the last three policy instruments described above, to what degree, if at all, do they enhance security, and therefore how much effort should they be given?

The next section of the policy statement deals with how, in using our policy instruments, Australia's policies are to be implemented in order to enhance our security. In focusing on our region Australia should seek "... 'comprehensive engagement' for South East Asia and 'constructive commitment' for the South Pacific." These conceptual expressions are designed to give effective presentation of government policy.
For South East Asia our policy should be "... 'comprehensive' in that there should be many elements in the relationship, and 'engagement' because it implies a mutual commitment between equals." The essential elements of this concept are: building an array of linkages in South-East Asia; giving support to regional associations such as ASEAN; joining actively in development of regional security interests; working for the involvement of the states of Indo-China and Myanmar, and pursuing our national interests as a confident and natural partner in the region.

A Natural Partner

In the past Australia has not been a natural partner. 'Asia' was not even an identity which needed to be recognised. Slowly, since World War II Australia has accepted the need to learn to live with Asia. We are inescapably a part of Asia, at least geographically, and we certainly cannot be a European outpost. "... do need to be 'ennmeshed'. But in doing so do not want to lose our identity ...". The problem in this region is that if we want to exert our will, do we have the means of asserting it? The problem here is that the development of various associations will take time. We cannot wish it on the various actors overnight. What the success of our efforts relates to has already been discussed: the performance of our economy, the resources available to DFAT, and the willingness of the nations in the region to also seek "engagement". What Australia must avoid, after our earlier difficulty, is swinging to an assertive extreme.

In seeking 'constructive commitment in the South Pacific, Australia's interests are best served by dealing with Pacific Island countries on the "... basis of partnership and mutual respect", despite our much greater size and power. The policy statement sees rapid changes occurring in this region where Australia should not resist change, but nonetheless seek constructive rather than disruptive involvement. The aims of this concept are to: promote close and broad relations with all Pacific Island countries; to foster regional cooperation; recognise that for island countries security hinges on economic and social development; to hold a respect for their full sovereignty, and to promote shared security perceptions. There is no doubt the South Pacific region is changing rapidly. These changes are occurring on the background of small sovereign states in a region which receives the highest aid payments in the world. Papua New Guinea's biggest security problem is internal, with Australia recently agreeing to boost support to address this. Fiji has had coups, while Vanuatu has created much Western anxiety, particularly in its associations with Libya. There are other outside actors with interests in the region, including France which angers many nations in the region over its policies on nuclear testing, and the independence of its New Caledonian colony. These are but some of the problems facing the region, and only some of the challenges facing Australia.

The problem for Australia is that the policy statement claims equal partnership, however this is not to imply that Australia would not have greater influence in the South Pacific. After all our aims are based on what is best for our own security. This points to a criticism of this aspect of the policy statement which does not address whether the security interests of the many South Pacific island nations are compatible with our own. Indeed the policy statement declares that situations may arise where military intervention by Australia may be required. Although the risk of potential backlash from such actions is recognised as being very high, the point is that the sovereignty of another nation would be violated by such a move. In addition the very statement seems to support those who criticise Australia as displaying a new militarism. So although Australia, by its very size, will be a major influence in the South Pacific region, we must be very careful of the way we handle various issues, and not to overreact.

In defining the region the policy statement refers to three areas. The South-East Asian and South West Pacific areas have already been covered; however the third region, the East Indian Ocean, is not addressed any further in the statement. Although this omission was later addressed by the Minister in March 1990, it is interesting that the same omission was made in the 1987 Defence White Paper.

The Indian Ocean is a significant area for not only Australia, but other nations such as Japan and the United States. The Middle-East, with 62 per cent of the world's known oil reserves, has made the Indian Ocean a trade route of global strategic importance. For Japan, which imports practically all of its natural resource needs, immense damage can be made to her economy by a blockade of the narrow straits of Indonesia. Australia is also increasingly reliant on free trade routes in the region. We are importing more oil from the Middle-East, but in addition we are now shipping liquified natural gas (LNG) from Western Australia to Japan.
importance of this region to Australia becomes even sharper when the power vacuum left by the possible withdrawal of the US from its Philippines bases is considered.

The policy statement concludes by assessing Australia’s security prospects as positive, but by no means assured. Australia must be prepared to be more a master of its own fate than in the past. In addition we need to look at our region in wider than purely military terms.67

Aware of the Challenges

Just as this article could not hope to address neither all aspects of the policy statement, nor the criticisms made of it, the policy statement itself could never be all encompassing. For this reason various criticisms are ill founded. The statement and the Minister recognise the nexus between security and sound economic performance.68 I believe the statement provides a sound conceptual basis for the development of Australia’s foreign policy. Most critics agree that the fact that the paper exists is an admirable step which reflects a continuing maturing of our nation. A development which sees less reliance on powerful allies.

The criticisms levelled at the statement often accuse policy makers that they are still living in the past. However, every nation carries its own historical baggage, and both domestically and internationally, Australia has shown it is aware of the challenges, and that it is trying to meet them.69 The criticisms made of the statement were welcomed by the Minister, and indicate a willingness for further analysis and development by our policy makers. The ultimate test of their efforts however, can only be judged over time.

The questions to ask in the early twenty-first century will be: has Australia become more a ‘part’ of Asia, and does a situation exist in our region where we do not feel our security is at threat? Our success will depend on the resources that will be available to enact our policy instruments, and that will be directly dependent on the strength of our economy.

NOTES
5. Greg Fry, op cit, positive comments can be found by various authors, eg on pp ix, 17, 21, 45, 57, 67.
12. Ministerial Statement, op cit, para 47.
15. Coral Bell, op cit, pp.5-17, 134-35, 195.
17. Ibid, para 11.
20. Ibid, para 45.
22. Ibid, para 61.
24. The Age Newspaper, article by M. Metherell, Deal Agreed on Control of NW Cape, September 18, 1991, p.10.
28. ASEAN (Australian and South East Asian Nations) consists of Indonesia, Malaysia, Philippines, Thailand and Singapore.
30. FPDA was concluded in 1971 by Australia, Malaysia, Singapore, the United Kingdom and New Zealand.
33. Ibid, p.65.
34. Ministerial Statement, op cit, para 97.
36. Ministerial Statement, op cit, para 100.
37. APEC's first meeting was in November 1989 and was attended by twelve nations including Singapore, Taiwan, Hong Kong, Republic of Korea, the United States and Japan.
38. Australian Foreign Affairs and Trade, No 12, Vol 60, December 1989, speech by Mr R. Woolcott, Asia Pacific Cooperation, pp.706-7.
40. G. Fry, op cit, Contribution by A. MacIntyre, p.112.
42. G. Fry, op cit, Contribution by R. Leaver, “The Shock of the New” and the Habits of the Past, p.36.
43. G. Fry, op cit, Contribution by A. McIntyre, pp.117-18.
44. Ministerial Statement, op cit, para 117.
47. Ministerial Statement, op cit, para 154.
49. Ibid, para 175.
50. Ibid, para 176.
53. G. Fry, op cit, Contribution by A. McIntyre, p.118.
55. Ibid, para 178.
56. J. Ravenhill, op cit, pp.24-5.
61. Ministerial Statement, op cit, para 89.
63. Coral Bell, op cit, p.231.
64. G. Fry, op cit, Concluding Reflections, by H. Collins, p.158.
68. Australian Foreign Affairs Record, No 12, Vol 59, December 1988, address by G. Evans, Australia’s Place in the World, p.529.

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Low Intensity Conflict in the Pacific: The Role of Information Security in the May 1987 Fijian Coup d'Etat

By Henry W. Prunckun Jr.

Abstract

This article analyses the strategies which made the Fijian coup of 1987 so successful. In doing so, it demonstrates how a handful of men working within the nation's political establishment were able to evade the notice of the army's intelligence branch, the country's political leadership, the public, the judiciary and legal profession, and the law enforcement and security intelligence forces. The May coup is a fitting example for military personnel whose mission is to penetrate foreign security conscience organisations, and, on the other side of the fence for those personnel in counter-intelligence whose job it is to thwart such penetrations. As the Fiji example will show, in the final analysis, the victor may be determined simply by the level of proficiency in using these strategies.

Introduction

On the 14th of May, 1987 elements of the Royal Fijian Military Forces (RFMF), led by Lieutenant Colonel Sitiveni Ligamamada Rabuka O.B.E. (Mil.), staged the first of two coup d'etats which dramatically changed the political direction of the south seas island nation. The May coup took just 4 minutes and succeeded in terminating the authority of the Coalition Government led by the late Timoci Bavadra. The coup was carried out without bloodshed and caught the entire nation, and the world, by surprise. The element of surprise was so effective that only one member of the Coalition made any comment at all during the military's raid on Parliament House, and the shock of the attack caused a police officer on security duty to stand frozen and literally urinate in his trousers.1

It is no coincidence then that the coup's operational name was — kidacala — a Fijian word meaning surprise. Rabuka’s planning was conducted under the protective umbrella of sound information security. Without information security the planning and the element of surprise would have vanished, along with, no doubt, Rabuka and the 60 troops backing his secret operation.

What is Information Security

Information security is not new. Ever since people first saw the need to keep information confidential, some form of information security has existed. Even though information security is nowadays viewed as an esoteric process used by 'government agent' types, military commanders throughout history have been aware of the value of sound intelligence countermeasures to guard plans for pending offensives, and to deter or repel an enemy attack. Without effective information security, no military commander can protect his operations from penetration or exposure. Without protection, it is unlikely that any military unit could survive for very long in the face of a hostile threat or in combat. The use of information security procedures is therefore acknowledged to have a positive role in all forms of military doctrine — whether it is in a low intensity conflict such as a coup, or from a conventional threat from a more powerful force.

Threat Analysis

The overriding goal of any coup d'état, not only that of Operation Kidacala, is to fully neutralise all forces which could offer opposition to the new regime, both before and after the coup. In theory, these forces include . . . political parties, sectional interests, regional, ethnic and religious groupings . . . " as well as the more obvious and most forceful defenders of the state and upholders of the status quo — the military, the police and the security intelligence agencies.
The neutralisation of Fiji's political forces was without doubt the principle task of the operation. Ideally, this is accomplished by seizing and/or disrupting the political infrastructure — arresting prominent figures of the pre-coup regime, current and former politicians, senior public servants and their associates and advisers. Along with these people, any influential people outside of the regime who may be in a position to lead a countercoup or harass and disrupt the new regime during its establishment period would also need to be arrested. In addition, control must be gained over the country’s media, telecommunications, vital transport links and the all important symbols of power — the seat of government, significant administrative buildings and other symbolic buildings or areas not necessarily associated with the government.

In the case of the Royal Fijian Military Forces, it was absolutely essential that the entire military force be brought under Lt. Colonel Rabuka’s control. Otherwise, in the worst possible scenario, military personnel who may have remained true to the then head of the army, Brigadier-General Rata Epeli Nailatikau, and the Coalition Government could have overpowered Rabuka and his troops. The modern military unit (even a small one) has more reliable transport, better communications equipment and as much as three times the firepower as its World War Two equivalent. Edward Luttwak, in his book, Coup d’Etat: A Practical Handbook, says this ‘... means that even one single formation loyal to the regime could intervene and defeat the coup ...’ The RFMF were no exception to this rule. At the time of the first coup, they had completed lengthy tours of duty for the United Nations in many of the world’s ‘hot spots’, such as Lebanon and the Sinai, and had been active in confronting and restraining the operations of the Palestinian Liberation Organisation. They were therefore battle-tested and battle-ready.

A nation’s police force, on the other hand, theoretically offers potentially less opposition to a coup for several reasons. Primarily, a police force is concerned with the prevention and detection of crime and the maintenance of public order. A police force characteristically carries out such functions as: uniformed patrol, crime investigation, organised crime and vice control, youth crime, safety education, crime prevention advice, traffic patrol, and control of civil disorders and special events. Thus, with less sophisticated arms, limited logistical support, and more integration into civil society than the military, the police offer much less resistance.

In May 1987, the Royal Fiji Police Force (RFPF) consisted of a uniformed branch, a traffic section, criminal investigation and prosecution units, and a Special Branch. Its close involvement in daily civilian life would have prevented it from challenging a coup. In theory, a police force is therefore more likely to adopt a ‘wait-and-see’ approach when facing a coup; after all, if successful, the new regime will be the police force’s new employer (as was the case in Fiji).

Neutralising the security intelligence agencies of a country is perhaps the most important aspect of a coup. A country’s intelligence service, although numerically much smaller than either the police or military forces, and with no physical means of intervention, is paradoxically the most dangerous. This is because the intelligence services’ raison d’etre is to ferret out information which will protect the State from activities which may destabilise its political process — such as the planning of a coup d’etat. In the case of Fiji, this threat was in the form of the police Special Branch. A nation’s security intelligence organisation is the clearest example of the adage ‘information is power.’

Gauging from what is known of the coup, it is evident that Operation Kidacala accurately identify the key threats; Rabuka’s troops seized and interned the Prime Minister, his Cabinet colleagues and other Government Backbenchers, and he announced the suspension of both the commander of the RFMF and his Chief-of-Staff. Simultaneously Rabuka ordered troops to take control of Government House, the telephone exchange, the Fijian Broadcasting Commission, the Fiji Times and Fiji Sun newspapers, the Fiji Electricity Authority, and the Post Office at Suva. In the key towns of Lautoka, Ba, and Labasa, troops seized the sugar mills, the power house, Government buildings, and the Queen’s representative, His Excellency the Governor. In addition, the entire town area of Navua was put under guard. And all this was accomplished without a single shot being fired!
front.' According to Australian criminologist Grant Wardlaw: ‘It should be noted that in order to be effective, surprise need not be total, although effectiveness may be directly related to [the] degree of surprise.’ This is supported by the United States Army which has defined surprise as: ‘Striking at an enemy at a time and place and in a manner for which he is unprepared. It is not essential that the enemy be taken unaware, but only that he becomes aware too late to react effectively.’ Obviously, the tighter the security, the greater the chances of achieving total surprise. And this was clearly demonstrated in Operation Kidacala. Interviews conducted directly after the coup by the Fiji Times with such figures such as Fiji’s Chief Justice, and the country’s Governor-General confirmed that there wasn’t even a suspicion that a coup was pending.

Rabuka assumed the entire planning role for the coup himself. He has stated that there was no other involvement in the planning ‘... beyond the essential military personnel who were involved in the pre-coup organisation — although [no one] was specifically told the target until the last minute.’ Once Rabuka decided to carry out his insurrection, he confided in only three officers under his command. However, only enough of the operational plans were discussed to allow these officers to select and train the 60 troops who would carry out the operation. No orders were written, and in fact the actual Operations Order (OpOrd 1/87) was not written until 2 am on the morning of the coup.

By using only three officers to organise the coup in this way, Rabuka created an organisational structure which has been made classic by numerous underground movements throughout history.

![Figure 1](image-url)

**Figure 1**

**Operational Cell Design**

- Branch Leader
- Cell Leaders (Intermediaries)
- Team Leaders
- Team Members
This type of structure enabled Rabuka, the central member, to remain anonymous. This further strengthened security. The officer intermediaries are referred to in intelligence work as "cut-outs". Cut-outs are also an important element in clandestine recruiting and other personnel functions. According to Rabuka he used this cell structure to perform the recruiting function. He claims that he was able to use these cut-outs to 'hand-pick' his men without divulging his involvement.\(^{18}\) He chose the troops he did because of their loyalty, and their skills and aptitude for carrying out the impending attack. This selection process usually includes some form of background investigation in order to determine if there are any factors in the history of the individuals under considerations that may bring the operation into jeopardy. It also prevents penetration by unfriendly agents.

Another security consideration was the need to mask the activities associated with preparing for the operation. Meetings with key people, making physical observations of buildings and other locations, ordering supplies, moving and storing weapons, transferring troops to new units, training troops, and transporting troops are examples of events associated with the planning of a coup. Singularly, these actions are normal occurrences in the military. However, they may not be normal in this particular combination. Other members of the Fijian military, Fiji's parliamentarians and public servants who may have cause to scrutinise such matters as part of their accounting and/or general clerical responsibilities, may have noticed these vents and pieced together the possible scenario, or enough of it to tip-off Special Branch.

To obscure such activity, it was necessary to create a series of 'cover' stories for the operation. This countermeasure involves creating a plausible explanation for the activities associated with the operation. For example, at one stage in their training, Rabuka's 'Elite 60'\(^{20}\) were discovered fine tuning their 9mm weapons skills on a combat range by a senior RFMF officer and his troops who were on a legitimate training exercise. The officer in charge of the Elite 60 used the cover that '. . . Rabuka wanted the men to sharpen-up their close-quarter battle skills . . .' in order to dissipate suspicion.\(^{19}\) Other ruses used by Rabuka to disguise operational planning sessions with his officers included fund raising meetings for the Army's kindergarten. The most dramatic and daring ruse came when Rabuka used the Army's role in the official opening of Parliament to secretly test the strike force's radio communication system — directly under the eye of Fiji's police force, including two of the Force's top police officers, Senior Superintendents Jimi Kori (Director of the Criminal Investigation Division) and Satiki Umu (Uniform Branch)\(^{21}\)

The ability to counter hostile surveillance is probably the final lesson to be demonstrated by the May coup. Covert physical and electronic surveillance methods pose the gravest threat to a clandestine military operation. This is because of the exponential gain in quantity and quality of information obtained. Rabuka says he was conscious of the possibility of surveillance by RFPF's Special Branch in the lead-up to the coup. Eddie Dean and Stan Ritova in their book about Rabuka said he admitted, '. . . for some time he'd felt he was under surveillance, and his phone tapped'.\(^{22}\) Although this was not in fact the case, Rabuka did not know this until after the coup. As it turned out, the information security procedures taken by Rabuka were adequate for the protection of the operation. Nevertheless, from Rabuka's own account in the area of electronic countermeasures these security precautions were grossly inadequate, and in other circumstances these shortfalls may have levied a heavy price on the success of his operation.

Electronic countermeasures doctrine dictates that, ideally, vital information should never be transmitted over 'open' telecommunication lines — that includes voice, facsimile and digital communications. The exchange of sensitive information should ideally employ some form of encryption device. In addition, a countermeasure 'sweep' should be conducted of communication equipment, transmission lines, and the areas used by operational planners. With today's freely available access to cheap electronic components, a sophisticated 'bug', wire-tap or other listening device can be constructed by anyone for less than $75. This is a potential threat which no military commander can afford to overlook.\(^{23}\)

### Conclusion

The role information security played in the May 1987 Fijian coup was significant and vital to the success of the operation. I have tried to provide an insight into how Rabuka's information security procedures formed a vehicle which productively exploited the element of surprise, and won a decisive advantage over his larger adversary. In general, the sophistication level of Rabuka's information security was very good — the fundamental principles of information security were
consciously adopted, and in all but one situation (electronic counter-surveillance) these principles were strictly adhered to. In the end, the security procedures used by Rabuka proved to be much more effective than the countermeasures used by the State to ferret out and penetrate his operation.

Information security can be described as a tool for safeguarding sensitive plans and arrangements — strategies which, if revealed to an adversary, would reasonably be expected to cause exceptionally grave damage. The Fijian coup of May 1987 demonstrates just how effective a tool it is, when it is in the hands of the proficient.

NOTES

1. Dean and Ritova reported that the Coalition’s Education Minister shouted to the Speaker of the House, ‘What is this, What is this?’ in what appears to have been a startled reaction to the armed, gasmask wearing troops bursting into the Parliament. The authors also describe the incident of the police officer’s embarrassing reaction. The subsequent arrest, and removal from Parliament House of the new Coalition government was then swiftly carried out in virtual silence. See Eddie Dean with Stan Ritova, Rabuka: No Other Way — His Own Story (Suva, Fiji Islands: The Marketing Team International Ltd., 1988), pp.9 and 69-72.

2. Ideally, a detailed analysis of threats (whether notional or real) should be the initial step in formulating a protective screen. It is important to accurately identify the threats so that appropriate countermeasures can be initiated for their effective neutralisation. Naturally enough, different threats require different countermeasures. Threats by a foreign government’s intelligence service is far more dangerous than surveillance by a local political group acting on its own. Therefore, countermeasures taken to thwart threats at a high danger level would be sufficient to guard against inferior threats, but the reverse is not true.


4. Because of their detachment from civilian matters, military establishments, such as the RFMF, often have their own corporate ideology. Sometimes, military thinking tends to be in conflict with the temperate attitudes held by the general population, hence the military can be quick to act, and quick to use the force at its disposal.

5. Luttwak, op. cit., p.65.


7. As in other Commonwealth countries, police Special Branch is engaged in the surveillance of political activists.


9. Dean and Ritova, op. cit., pp.60 and 68.


14. Other intelligence countermeasures can be reapplied from the abundant literature pertaining to military, foreign policy and law enforcement intelligence. For initial assistance, see M.W. Cline, C.E. Christiansen, and J.M. Fontaine, editors, Scholar’s Guide to Intelligence Literature (Frederick, Maryland: University Publications, 1983); and Special Access Required: A Practitioner’s Guide to Law Enforcement Intelligence Literature (Metuchen, New Jersey: Scarecrow Press, 1990) by H.W. Prunckun Jr.


16. Ibid., p.59.


19. ‘Elite 60’ was the code name Rabuka gave to the troops which formed his insurgent strike force.

20. Dean with Ritova, op. cit., p.43.


22. Dean with Ritova, op. cit., p.59.

Gallipoli Plaques Project

By Dr Ross J. Bastiaan

Anzac Day 1990 will long be remembered as a great day of national pride, celebration and commemoration. Unlike other Anzac Days of recent times, this country as a whole stopped to remember the war dead and to hail the few remaining veterans of the Gallipoli Campaign who returned to that fatal shore. No one could fail to have been moved when they saw these old veterans returning to pay their last respects at the gravesides of their long dead comrades. Here we recognised a spirit and strength that transcends all ethnic, religious or political differences that exist in our society. Their final gesture also revitalised Anzac Day in the eyes of the youth of our nation and in them the traditions forged in 1915 will live on.

The Anzac battlefield, preserved within the National Park of the Gallipoli Peninsula, serves as a permanent reminder to all who visit of the immense efforts made by those who fought in the Gallipoli Campaign. The old battlefield is guaranteed preservation under the 1923 Treaty of Lausanne and its maintenance is shared by the Commonwealth War Graves Commission and Department of National Parks, Turkey.

The relative smallness of the Anzac area and the rugged nature of the terrain assist the visitor in appreciating the difficulties that both sides must have experienced during the Campaign. Until recent times, the remoteness of Anzac has meant few have visited and, except for the 21 cemeteries and a few memorials, little information has been available to those who speak only English.

My first visit to Gallipoli was in 1987, when completing research for the book Images of Gallipoli. The area was isolated and peaceful. The horrors of the Campaign are hard to imagine with the hills covered in green flowering shrubs and the cool Aegean Sea lapping the tranquil shores of Anzac Cove. The cemeteries, lovingly tended by the Commonwealth War Graves Commission (CWGC) since the 1920s, act like sentinels guarding the key positions of the old front lines of 1915. Signposts were few and explanations of the area all but non-existent. To those well-versed in the Campaign the topography could be understood but, of the 20,000 people who visit annually, much was being missed.

The Turkish Government in the 1980s erected around the Anzac and Suvla battlefields eight 15 metre high white stone monoliths with text in bas-relief. Each is located on a significant Turkish position of the Campaign, many being at the limit of the Allied advance. The Turkish text is brief and relates to the courage and victories of the Turkish forces over their invading foes.

At Kaba Tepe, 3 kilometres south of Anzac Cove, a large modern information centre has been built. Here are displayed Campaign memorabilia, enlarged photographs of the day and Turkish maps. The majority of exhibits are either not captioned or accompanied by Turkish text.

This clear lack of information about the Anzac area concerned me greatly. The Gallipoli Campaign is and always shall be regarded as a key period in our young nation's history and, for that reason alone, Australians will be drawn to the area for generations to come.

In 1915 few Australian families did not have a relative involved in the Campaign. For many of my generation, we were fortunate to have grown up with these veterans around us. My great uncle served at Gallipoli, as did Laurie McCarthy, VC, who helped raise me through my childhood. Forthcoming generations unfortunately will not be able to share the experiences of these original Anzacs and therefore their deeds need to be remembered all the more.

With a family background associated with Gallipoli and my witnessing the need for better information, I conceived the idea of the "Gallipoli Plaques Project".

The aim of my project was to provide descriptive plaques, set in the ground, at ten important points on the Anzac battlefield. Each plaque would contain information to aid the reader to orientate themselves with the local topography and to appreciate the significance of that particular part of the battlefield as related to the Campaign as a whole.

The concept of placing ten plaques in the ground seemed, at first, a simple one, but only after two and a half years of extensive correspondence, organisation and hard work were the project's goals achieved.

On returning to Melbourne in October 1987, I spoke with the Turkish Consul-General, Mr Attila Sunay, of my plan. The outline of the project was
sent to the Turkish Government in Ankara. Almost one year later, permission from the Turkish Government to proceed was granted, with the proviso that the military history section of the Turkish Army have a significant input into the wording on each plaque.

The Australian Government although not providing funds supported the project whilst the Federal office of the Returned Services' League of Australia (RSL) warmly encouraged the proposition. Initial reluctance was expressed by the Commonwealth War Graves Commission and this was fully understandable. The Commission has performed a magnificent job in caring for the graves of our war dead for almost 75 years and any over-development of an area could not be encouraged. Only after careful explanation of the aims of the Gallipoli Plaques Project was the Commission satisfied that the Plaques were only functioning as battlefield markers designed specifically to assist the visitor.

With approval from the principal authorities and countries involved, the project was now ready for the next stage.

The choice of material for the plaques was difficult. In consultation with the Royal Botanical Gardens of Melbourne, it became clear that the most resilient of materials was required. Their painted and engraved aluminium signs suffered constant vandalism, whilst plastic lettering was often removed. Bronze, by comparison, has always stood the test of time despite its expense and weight. It would withstand the searing heat of summer and the ice and snow of winter that lashes the Gallipoli Peninsula. Bronze is also very strong and thus more able than other materials to withstand acts of vandalism — a very real problem in a place as remote as Gallipoli.

In consultation with the Turkish Government, I decided to make the Plaques Project multi-lingual. On each plaque the text was presented in Turkish, English, German and French, thereby providing information to almost all visitors to the area. Professional translators were employed to ensure accuracy. The size of the letters for the text were based on the requirement that the text could be easily read when standing above the plaque. The raised letters were therefore large and this factor alone restricted the length of the text to 100 words per language. This limit severely constrained the amount of information that could be imparted on
each plaque and therefore a most precise, succinct and accurate text was developed.

To accommodate a heading in Turkish and English and all necessary text, a plaque 990 x 770mm, or about the size of a small kitchen table, resulted. Each plaque weighed 52 kilograms and was designed to rest on a 450 kilogram concrete plinth. The plinth was slightly sloping and, in an attempt to minimise its impact on the immediate surrounds, kept approximately 40mm above ground level. The text was written by me, but only after careful consultation with the Turkish Government and years of research.

Differences in interpretation of the events that occurred during the Campaign did exist. The most sensitive area was casualties. This was particularly so in the Turkish Army's case as detailed records of their casualties were not kept. On the Lone Pine plaque it was therefore necessary to make an estimate of their casualties based on the records of the time and more recent research. The sensitivities of the Turkish, Australian, New Zealand, British and Indian nations were also a constant concern. Clearly in certain situations the term "Allied" was more appropriate if, for example, British forces had held a position with the Anzacs. Only in situations such as the initial landing at Ari Burnu where only Australian troops landed could the term “Australian” be placed on the plaque. Similarly, interpretation of achievements varied between nations. For example, in the attack on Chunuk Bair Turkish history records the Allied forces never capturing the peak of the hill, whilst the Allied references and veterans interviewed clearly indicate the opposite. In the same manner the force that captured this hill was predominantly New Zealand, however, a British regiment assisted them and therefore the British participation required acknowledgement on the Chunuk Bair plaque. Careful discussion was required to avoid misunderstanding and resentments by the different nations. This was particularly so as the plaques are expected to have a useful life — well beyond 200 years. Facts rarely change, but people and even nations do. For the Plaques Project to succeed, impartiality and fairness to all involved had to be of prime importance. Above all there was always throughout the text a strong sense of justice towards history.

At all times the contents of the text was directed and kept within the scope of what I believed the layman needed to know and not what may have interested the military historian. As such, generalisation rather than detail was the rule. Key things I believed people wanted to know when walking the old battlefield was where the opposing forces were and why this position had significance. The plaques addressed these questions and, for example, in many cases indicated old trench lines as being either to the left or right of the plaques location. No army units were mentioned and great care was taken not to refer to specific commanders. Today’s generations care little if the 16th Battalion, First AIF, held Quinn’s Post, or that the 57th Regiment of the 19th Turkish Infantry Division stemmed the Anzacs when they advanced from Ari Burnu on 25th April, 1915.

Finalisation of the text was made between November 1989 and February 1990, with further correspondence with the Turkish authorities and, in a few cases, with Pam Cupper, joint author of Gallipoli — A Battlefield’s Guide.

Casting of the plaques was performed by Arrow Foundry, Melbourne. This was the largest single project they had undertaken since the casting of the Roll of Honour on the walls of the forecourt in the Australian War Memorial. Qantas Airlines flew the ten plaques, with a combined weight of 600 kilograms, to Istanbul. They were air freighted in two batches and I carried the final four plaques the 300 kilometres to Anzac in a station wagon on 18th April, 1990.

At Anzac, with the assistance of Mr Erol Baykan, head Turkish gardener of the CWGC at Gallipoli, and five other men, we set about locating the plaques on the old battlefield. The concrete plinths, because of their weight, had mostly been poured in the vicinity of where the plaques were to be placed. Over the following five days we worked hard as a team locating accurately each plinth and cementing the plaques into position. The final plaque cemented was at Lone Pine on 23rd April.

Selecting the sites for the plaques was one of the most important decisions of the project, as there were many historically significant locations on the battlefield. My principal concern was that each location had to represent an important aspect of the Campaign and that the roads now present were close at hand. Locating them away from the main areas could lead to vegetation being damaged or personal injury in unfamiliar terrain.

The positions chosen were:

**ARI BURNU** — close to the cemetery by the same name and the famous Atatürk memorial. At this point, the first Australians landed on the morning of 25th April, 1915.

**ANZAC COVE** — located on the left side of the Cove immediately by the roadside. This Cove was the very heart of Anzac.
SHRAPNEL VALLEY — located in the car park 20 metres from the cemetery by the same name. This valley was the lifeline to the soldiers holding the frontline.

SHELL GREEN — located to the left of the cemetery entrance. This area was the right flank of Anzac and a central area for artillery and infantry support.

LONE PINE — located immediately to the left of the main entrance to the cemetery of the same name. Here the most ferocious fighting of the Campaign occurred and has become synonymous with the Anzac legend.

COURTNEY’S AND STEELE’S POSTS — located 30 metres from the cemetery of the same name, close to the road. Along the length of this road was the front line for both armies and across which repeated attacks occurred.

QUINN’S POST — located immediately outside the cemetery. This narrow position was the most dangerous and feared on Anzac. Opposing forces were 15 metres apart which, standing at the plaque, can be readily appreciated.

THE NEK — located between the Allied and Turkish memorials. This plaque highlights the constrained positions of both sides across this narrow front line ridge. The plaque rests on ground across which the Light Horsemen charged and perished on 8th August, 1915.

CHUNUK BAIR — the plaque lies on the seaward slope of Chunuk Bair, 30 metres from the New Zealand National Memorial and close to the main Allied front line held briefly during the August offensive. This hill has immense significance to both the New Zealand and Turkish nations and the battle fought here marked the turning point of the Campaign.

HILL 971 — the plaque is located on the top of the viewing platform recently erected by the Turkish Government and presents an unsurpassed view of the Suvla Bay battlefield. This hill was never captured by the Allied forces.

At the Kabatepe Information Centre, and hopefully Chunuk Bair, a sculptured, bronze, three-dimensional, topographical map of Anzac has been mounted. The purpose of the map is to help the visitors orientate themselves in the difficult terrain and to show the present day roads, plaque locations and main national memorials. The maps perspective is from high above Kaba Tepe looking to the north, with Suvla Bay well in the distance. The design I based on maps of the area and what was believed important to the visitor, especially if visiting time was limited. Measuring 800 x 600mm the map was made by the famous Australian sculptor, Ray Ewers. His works are exhibited in many places throughout this country, with his principal bronze being the centre-piece in the Hall of Memory at the Australian War Memorial, Canberra. Accompanying the map is a small plaque with an explanation in English and Turkish of the Plaques Project.

Concurrently, with the placing of the plaques and in a further attempt to bring information to the visitor, I wrote a book in February 1990 entitled Gallipoli Plaques — A Guide to the Anzac Battlefield. The book is designed to use in conjunction with the ten battlefield plaques. On each plaque in the top lefthand corner is a number from 1 to 10. Followed in numerical order and in a counterclockwise direction starting at Ari Burnu, No. 1, and finishing at Hill 971, No. 10, the battlefield and its story unfolds. The text is written to coincide and enlarge upon the 100 words of text on each plaque.

The book of 22 pages is filled with text, a map, photographs taken in 1915 from private collections and personal photographs taken in 1987. The book was kept to this size as it provides enough information to satisfy most visitors and hopefully being of light weight will be carried home to serve as a permanent reminder of their visit to Anzac. A total of 6,500 copies of the book were published before Anzac Day 1990 and 3,500 copies were distributed free on Anzac Day in Turkey. The remainder I distributed to major Australian libraries, military libraries throughout the country and some schools. Negotiations are proceeding favourably with the Turkish authorities to have the book available at minimal cost at Anzac for the years to come, with the proceeds going to the development of written and photographic material at the Kabatepe Information Centre.

A project of this size and complexity has required great financial assistance, as well as my energies. Sponsorship of the plaques was a vital element in its success. This aspect of the project was most ably and willingly assisted by Lt. Col. (Ret.) Owen O’Brien of Sydney and Mr Tony Charlton of Melbourne. Both men, with extensive business contacts, were able to arrange corporate sponsorship for the project. No Australian or Turkish Government monies were ever offered or used.

It was calculated that to fabricate, transport, cement and maintain each plaque plus publish the guidebook, each sponsor would need to provide A$5,000 per plaque. BHP Australia were the first to accept, taking two plaques, Anzac Cove and Lone
Pine. The AMP Society accepted next, with two plaques, one at Ari Burnu and the other The Nek, whilst Qantas selected Chunuk Bair. Wormald International decided on Shrapnel Valley and Shell Green, John Allison/Monkhouse Courtney’s, Post; Coca Cola-Amatil, Hill 971 and finally the ANZ Bank, Quinn’s Post. Air New Zealand funded the map at the Kabatepe Information Centre. Without these Australian and New Zealand companies support, the project would never have got started nor developed to the degree that it has and their contribution has been acknowledged on their respective plaques.

The RSL Canberra, through Ian Gollings and June Healy, collected all sponsorship monies and paid contractors as required. This project was totally on a non-profit basis, with all monies being spent directly on the plaques and the book. The Department of Veterans Affairs has agreed to maintain the plaques through their annual budget to the CWGC. Acts of vandalism or the inevitable wear and tear of time will be the Project’s responsibility.

The culmination of the Plaques Project occurred at midday on 25th April, 1990, when the Prime Minister of Australia, Mr Bob Hawke, and the New Zealand Governor-General, Sir Paul Reeves, unveiled the plaques at Lone Pine and Chunuk Bair respectively. Of importance to me on that day was that among the thousands who were at the Lone Pine ceremony were 57 of the men who had helped make this place a legend in their own time.

As we look towards the next 75 years, the Gallipoli Plaques Project will hopefully continue to provide necessary information to the Gallipoli visitor. The project, despite the political, financial and geographical problems encountered, has been both satisfying and personally fulfilling. The satisfaction arises from knowing that my efforts have been of importance to our nation and fulfilling as the plaques will remain for ever as a reminder to all who come of the sacrifices made, now so long ago.

Only if future generations understand what happened at Gallipoli will the story of Anzac survive, my efforts have been solely to this end.

**ARI BURNU**

At 0430 hours on 25 April 1915, 36 rowing boats landed the first Australian soldiers around this point and at Anzac Cove. Immediately they climbed the 100 metre hill behind you (Plugge’s Plateau) and by 1000 hours secured a front line (seen from the hill top road) from the Nek, Quinn’s Post, Lone Pine and to the south beyond Shell Green. 160 Turkish soldiers opposed the initial landing and by day’s end, assisted by 8,000 reinforcements, they contained the 16,000 Australian and New Zealand soldiers landed. By evening each side had suffered 2,000 casualties and both were deadlock at along a front line that changed little until Allied evacuation on 20 December 1915.

**ANZAC COVE**

This beach, 600 metres long by 20 metres wide was the lifeline to the Allied soldiers within the Anzac perimeter. Because of Turkish shellfire, supplies could only be landed at night and carried by men and mules along tortuous and dangerous tracks to the front line — casualties were evacuated the same way. The Australian and New Zealand headquarters were located 100 metres from the beach and within 1000 metres of the front line. On the hillsides above the beach, thousands of men lived in small dugouts during the 240 days of the campaign.

**SHRAPNEL VALLEY**

Men and supplies moved down this valley to the Allied front line which stretched between Quinn’s Post and Johnson’s Jolly. Sheltered areas of the valley housed thousands of men in terraced dugouts, many of whom provided medical, communication and engineering support. One kilometre ahead, Monash Valley branches to the left, it had provided the only access to Quinn’s, Courtney’s and Steele’s Posts (these can be seen on the horizon of the distant ridge, they are now marked by white walled cemeteries flanked by slender pine). Dominating the length of Monash Valley was the Turkish held hill, Baby 700 (180 metres high) from which snipers fired constantly.

**SHELL GREEN**

Above the cemetery is Bolton’s Ridge which was the main defence position on the right flank of Anzac. The principal trenches were on the crest whilst forward positions lay 200 metres beyond. Along this side of Bolton’s Ridge dugouts provided shelter and rest areas for the soldiers. Artillery batteries were concentrated here as Artillery Road provided good access to the beach and the rear positions of Lone Pine. Except for a hurried cricket match on December 17, this flat area was rarely used as it was too exposed to direct Turkish observation and shellfire.

**LONE PINE**

On 6 August, 1915, at 1730 hours, Australian soldiers emerged from their trenches located to your right; they charged across 60 metres of flat open ground to the Turkish log-covered trenches located...
round the site of the memorial. By 1800 hours the Turkish trenches had been captured, but for five days the worst fighting of the campaign raged around this area. The attack was designed to draw off Turkish reserves from Chunuk Bair and the Suvla Bay landings (8 km north), it resulted in the deaths of 2,200 Australians and 4,000 Turks.

COURTNEY’S & STEELE’S POSTS

On the morning of the landing Australian soldiers reached this ridge and on its seaward side they dug in to form a forward line. Despite further attempts this line advanced no further and throughout the campaign both sides fought at close quarters across the length of the narrow crest now covered by the road. The cemetery is built over tunnels dug from the south of Steele’s Post. The front line trenches of both sides were located just forward of the crest with support trenches 5 to 10 metres below and the main reserve trenches a further 15 metres down.

QUINN’S POST

This was the most important and dangerous position on Anzac. Opposing forces were separated by, at most, 15 metres and in some places by the width of a road. The Allied trenches ran from beneath the cemetery down into Monash Gully. The Turkish trenches commenced just beyond the metal road and ran down into Mule Gully. A network of trenches and tunnels riddled the area; exposure above these invited certain death. Hundreds died in futile attempts to take the other side’s trenches. Loss of this position would have exposed both armies’ rear positions.

THE NEK

This key position, defended vigorously by both sides, saw repeated attacks across this narrow ridge.

Shrapnel Valley cemetery with the plaque of the same name in the foreground. MacLagan’s ridge is in the background and sharply descends on its far side down to Anzac Cove.

The Anzac trenches were located close to the cemetery. The Turkish trenches originated near to the raised dark stone memorial on your right and ran in 8 tiers to the top of the first hill (Baby 700). A courageous but futile attack by the Australians was made on August 7, 1915, when over 300 men were killed in the area immediately in front of you.

CHUNUK BAIR

New Zealand and British soldiers climbed from the beach under cover of darkness and launched a surprise attack on this hilltop; capturing it on 8 August 1915. They held the area immediately around the New Zealand memorial for 2 nights until, against constant and courageous counterattacks, the Turks retook the summit. As part of this offensive, British forces landed 7 kilometres to the north at Suvla Bay and by mid-August most of the area between the foothills and Suvla was in Allied hands. The Turks, however, held the vital high ground and never again were the Allies to view their goal — The Dardanelles.

HILL 971

As the highest point (305 metres) on the Sari Bair Range, Hill 971 was used as an observation and gun battery position by the Turkish command. Suvla Bay with its salt lake lies to the north-west. On 6 August 1915 the British landed at Suvla to attempt the capture of all surrounding hills and support an attack from the Anzac perimeter (three kilometres south-west from here) against this summit. Both initiatives failed badly, the Allies captured some of the foothills and flat plain below. The British and French battlefields at Cape Helles lay twenty seven kilometres to the south, at the tip of the peninsula.

Reviewed by Robert O'Neill, Chichele Professor of the History of War, All Souls College, Oxford

These two volumes form one of the most complete histories of any Australian unit which participated in the Second World War. The unit portrayed, the 2/12th Battalion, 2nd AIF, was raised from the geographic extremes of Eastern Australia, North Queensland and Tasmania, and served in Tobruk, the Syrian campaign, New Guinea and Borneo. The battalion's experience was a splendid example of the intensity of the service rendered by many Australians throughout the six years of the Second World War, providing Alex Graeme-Evans with an excellent subject for his story.

He has chosen to relate the war experience of the 2/12th substantially through the words of the battalion's members themselves, quoting copiously but selectively from not only the more obvious records such as the battalion's war diary and surviving operational documents but also the private letters, diaries and reminiscences of those who comprised it. This method leaves the author relatively little room for his own comments. Much of his own passages has to be devoted to settling the context for the extracts of eyewitness accounts and to bridging the gaps between them.

In taking this approach Graeme-Evans has been bold and forthright. Some historians of less ability and confidence would have insisted on relating the story almost totally in their own words. In this case the author has simply shown good judgement and a rather attractive forebearance. Clearly the quality of his writing shows that he is perfectly capable of telling the whole story in his own words. It is very useful however to have an account which portrays the contemporary thoughts of his central characters so fully and clearly as they pass through the various testing and crisis points of their war service. The high quality of the passages cited suggests that a great effort was applied to the process of gathering and selecting material. Graeme-Evans has thereby put together a work which will also serve as a useful source for others producing more interpretive and analytical books on the war experience of Australians.

The utility of this approach is all the greater as the war recedes into the distance of time and the sources of direct evidence disappear. It also offers the reader a particularly good view of what war was like at the lower levels of the command structure. The immediate recollections of individual infantrymen expressed in letters and diaries offer valuable information on the nature of war service from a personal standpoint, information of a kind which tends, for very understandable reasons, to be omitted from the major campaign histories.

One particularly useful aspect of the two volumes is the intimate view they offer of the problems of contending with what Clausewitz encapsulated as "the fog of war": of what it was like to be sent into operations with little information as to what the enemy's strength or intentions or as to what capabilities he was likely to display when met by firm Australian resistance. One also receives a clear picture of life at the bottom of the command structure and at the end of a long supply route: the weapons which arrived without ammunition, the effects of shortage of water in the North African desert and the length of journeys the wounded had to endure en route to hospital. One can also make a clear contrast between the Germans as enemies and the Japanese. One soldier related his capture by Germans at Post S10 at Tobruk: the leading German called "We are German soldiers and will not harm you if you come out with your hands on your head." The Australian was wounded and could not move. The Germans soon had him supported under the armpits and attended to his wounds. The verdict of the Australian on his captor Oberleutnant Peter Eberhardt, 21st Panzer Pioneers, was: "Not a bad bloke really."

This experience contrasts starkly with that of the Pacific theatre where, Graeme-Evans relates, barbarous practices became the rule after the Japanese had shown clearly that they had little if any concept of giving quarter to an enemy who wished to surrender. It became the normal procedure for Australian soldiers, early in the New Guinea campaigns, not to take prisoners and on occasion Japanese wounded were bayonetted. Japanese atrocities such as torture, using live prisoners for bayonet practice and committing gross sexual
offences against women had already been discovered after the battle of Milne Bay.

While the greater part of these volumes relates the experiences of the men of the 2/12th, the author does permit himself some space for judgement and the raising of questions on moral issues, command decisions and operational practices. He is careful to caution the reader against too readily applying the standards of peace and the 1990s to war and the very different social attitudes of the 1940s. Altogether Graeme-Evans has produced a well-founded, balanced and perceptive work, both extensive in scale and offering us as clear and accurate a picture of Second World War service in an Australian battalion as we are likely to receive. It is a valuable complement to the many works which focus on the higher strategy and politics of the war. Sadly, much of the nation’s first-hand knowledge of war is perishing with the men who fought in the Second World War. Not many battalions have historians of the devotion and insights of that of the 2/12th. He deserves the commendation both of the men whose efforts he relates and of those today who struggle to comprehend what their experience meant in individual terms and what it signified for the course of the war.

Copies of both Volume One (Formation, England, Tobruk and Syria — 1939-42) and Volume Two (Australia, First and Second New Guinea Campaigns and Balikpapan — 1942 to disbandment) can be obtained by contacting the Hon Sec 12th Battalion Association Paul Hope on Hobart Telephone Number 002-282936.


Reviewed by Wing Commander Alan Stephens, RAAF

When Australia went to war in 1939, females formed 49.3 per cent of the population of 7,000,000. Far sighted leaders appreciated that accepting women into the armed services would release many more males for combat duties, thus strengthening the war effort.

The RAAF led the way. On 4 February 1941, War Cabinet approved the formation of an air force women’s auxiliary service, a precedent which saw the subsequent formation of army and navy women’s services.

The establishment of the WAAAF was not without its trials: it came about only after 14 months determined struggle against deep-seated political, military and social opposition. Minister for Defence H.C. Thorby typified the resistance to women serving in the Air Force with his comment that ‘Aviation takes women out of their natural environment, the home and the training of the family’.

Perhaps the key figure in the eventual formation of the WAAAF was the otherwise undistinguished RAF officer, Air Chief Marshal Sir Charles Burnett, who served as CAS of the RAAF from 1940 to 1942. Burnett has been described by one historian as ‘the first recruit of the Empire Air Training Scheme’. There is no doubt that the zeal with which he sought to establish the WAAAF was based solely on his single-minded determination to release as many Australian men as possible for the EATS so they could go to Europe and fight for the mother country.

Still, if Burnett’s motives were questionable, the outcome was not. By July 1944 airwomen were employed in 61 trades and represented 31.5 per cent of RAAF ground staff. They served in mustering ranging from accounting machine operators to anti-gas instructors; flight mechanics to flight riggers; mess stewards to meteorological assistants; and wireless mechanics to wireless telegraphists. In all, about 27,000 women served in the WAAAF during the war. Every female trained by the Air Force did work previously performed by a man.

Yet the discrimination continued. Airwomen in general received only two-thirds of the pay and allowances of airmen, and their employment was restricted to particular mustering and geographic locations. Following V-J Day, Minister for Air Drakeford and some senior members of the RAAF became as determined to abolish the WAAAF as quickly as possible as they had been to delay its formation: now, it was considered necessary to return the Air Force’s womanpower to their home duties and open up jobs in the post-war RAAF for the men.

For all those trials, the WAAAF was nothing less than an unqualified success, both in helping to win the war and creating opportunities for Australian women. As Joyce Thomson’s admirable book shows, for the great majority of those involved, their wartime experiences were positive and fulfilling, as they tackled service life with ‘zest, humour and determination to succeed’. Succeed they did, excelling in their jobs and drawing praise from, among others, the Supreme Commander in the South West Pacific Area, General Douglas MacArthur; and his Air Commander, General George C. Kenny. The WAAAF’s trademarks were its efficiency and high morale.
There is no doubt that the efforts and success of the members of the WAAAF paved the way for those females who, today, are graduating as pilots in the RAAF.

Douglas Gillison’s volume of the official history of the RAAF from 1939 to 1942 gives four pages out of 786 to the WAAAF. Fifty years later, Joyce Thomson’s scholarly and readable work has redressed that indifference. By combining archival records with personal interviews and evocative photographs, she has presented both the official record and the human face of Australia’s wartime servicewomen. Her book is a significant contribution to Australian military and social history.


Reviewed by LTCOL R. E. Bradford

The dramatic events that have preoccupied Europe over the last couple of years have the potential to alter the political and economic face of the world for the foreseeable future. Not even the most capitalist western nation could have forecast the rapid disintegration of communism within the Eastern European nations, and the subsequent drive towards democracy and their own particular forms of free market economies. The political revolutions are nowhere near finished: the first signs of discontent towards the slow economic improvement of East Germany have only just surfaced; Yugoslavia and Albania are still trying to determine the nature of their democratic form, and it is difficult to forecast what the USSR will look like given their slower pace of change. In attempting to understand all that is going on in Eastern Europe, a good easily read and understood reference book is required. This book fits that bill.

Brogan makes it quite clear in his introduction that the book is a history of Eastern Europe from 1945 to 1990, and not a history of communism, of the Cold War or of the Soviet Union. However, given the time frame and the area under review they are inexorably linked and must be considered at least in outline if not in detail. He manages to achieve his aim by concentrating on each nation in its own chapter and only crossing national boundaries when it is clear that external influences affected the political situation.

Why then was this particular rebellion against communism so successful when others such as Hungary in 1956 and Czechoslovakia in 1968 failed? The economic situation in the various nations had something to do with it because of the continuing failure of communism to provide the consumer products seen regularly on television by the East Europeans. However, consumerism was not the prime factor. Previous revolutions were suppressed under the strong leadership of the USSR whereas this time because of ‘glasnost’ and ‘perestroika’, the USSR was almost encouraging the events. The power of television and its ability to provide ‘real time’ information on what was happening in neighbouring nations was also important, and proved to be the medium by each country was able to emulate the revolutionary events.

The one communist nation not covered in the book which will probably suffer the most under this revolutionary process is the Soviet Union. Having initiated the process, President Gorbachev is struggling to retain control of the reformation of the Soviet Union, against the conservatives on one hand and the radicals on the other. Having achieved change elsewhere he is finding it most difficult to achieve the same success at home. Time will only tell how successful he may be.

The author has been most successful in producing a text which provides excellent background information on the contemporary happenings in Eastern Europe. The book covers each nation, namely, East Germany, Poland, Czechoslovakia, Hungary, Yugoslavia, Albania, Bulgaria, Romania and the Baltic Republics, allowing a chapter on each nation. By the use of a limited number of cross references he has been able to demonstrate the spread by emulation of the revolutionary process. Explanations are couched in simple easily understood language. Anyone interested in the affairs of Eastern Europe and the changing face of communism will find this book an enormous help in understanding how and why the revolutionary process gained such momentum and success.


Reviewed by Major J.P. Cantwell, AM, RAAC

The extraordinary events centred on the recent invasion and subsequent liberation of Kuwait will no doubt spark the publication of a host of books. This book, 43 Days, was among the first, appearing in the bookshops within weeks of the end of the conflict.
The credentials of the authors lend apparent weight to the book. Dr Ian Bickerton and Dr Michael Pearson are respectively senior lecturer and associate professor at the University of New South Wales, where they teach courses on the Arab world. The book includes contributions from several journalists, from another university lecturer, and the text is also liberally sprinkled with quotes from several Australian Broadcasting Corporation (ABC) correspondents. This amalgam of contributors has produced an interesting range of opinions, but it has also produced a disjointed literary style which some readers may find distracting.

The book is divided into three sections, all of which are generously illustrated with colour photographs and maps. The first section of the book is called The Road To War. This section is the best of the book and provides interesting background to the conflict. A broadbrush summary of the development of Iraq since the 15th century contains a number of intriguing parallels with recent history. The rise of Islam is also covered in a short but useful summary, which helps unravel some of the more puzzling of the ever-shifting alliances and biases of the region. The background to the conflict is further developed with a chapter describing the rise of the Ba'ath Party and of Saddam Hussein. The chapter also contains a number of interesting facts relating to the relationship between Iraq and Syria, providing a partial explanation of the unexpected commitment of Syrian troops to the US-led coalition forces. The remainder of this first section of the book is devoted to wider issues with varying degrees of impact on the conflict, such as oil pricing and production, and US policy in the region. A chapter describing the Arab-Israeli conflict seems to have been added as a 'filler', the first of several chunks of text which seem to have been added more for volume than for relevance. Nonetheless, the major reasons for the Iraqi invasion of Kuwait are neatly summarised, and the section concludes with a list of key events between July 1990 and the beginning of the allied air offensive on 17 January 1991.

Section Two, titled The War, begins with a chapter which describes the main events of the war day by day. The daily entries in the list record major events and remarks by the key players. Being purely descriptive in nature, the section offers little if any analysis of events, and is sometimes little more than a summary of the daily media briefings broadcast from Saudi Arabia during the conflict. It does provide an uncluttered record of the progress of the allied campaign, and is probably of some value on those terms.

The remainder of the section is again 'padded' with essays of limited value to military readers, with two chapters concentrating on the role of the media during the operation. Some of the material in these chapters will be of passing interest to those concerned with the media, but much of it is not wholly relevant to the conflict itself. An example of this is the extensive defence of the ABC's position in the debate over the alleged bias of the national broadcaster's coverage of the war.

The book concludes with a short section called The Prognosis (actually only a single chapter) which offers comments and predictions on the future of the principal nations in the region. Although some of the remarks in this section betray the political leanings of the authors, taken as a whole they do provide a satisfactory end-piece for the book. Less satisfying are the four appendices, which consist of a short list of events with the grand heading of Middle East History (two pages), a selection of transcripts of speeches by several world leaders with the misleading name of Key Documents, an inaccurate table showing allied forces committed to the Coalition Alliance, and finally a collection of data on Key Middle Eastern Countries which could have been gleaned from any encyclopedia.

In summary, 43 Days shows clear signs of having been cobbled together from a variety of sources, to produce a book quickly enough to take advantage of the ready market for material on the successful Gulf War. It cannot be regarded as a serious analysis of the conflict, but it does contain some useful background information for readers with little previous knowledge of the region, as well as presenting an unadorned summary of the war in simple chronological order. If, however, the title of the book has led you to expect a detailed and comprehensive account of the 43 days of the war with Iraq, you will be disappointed.