

**FROM PAST TO FUTURE:  
THE AUSTRALIAN EXPERIENCE OF LAND/AIR OPERATIONS**

**THE THIRD DIMENSION IN LAND FORCE OPERATIONS:  
THE PRESENT AND THE FUTURE  
FROM AN AUSTRALIAN PERSPECTIVE**

**Colonel Peter Simpson**

'We are sure you will be to our glorious Army the friend that endureth to the end.'  
:Message from Winston Churchill to RAF, Middle East, July 1942

'The events of Desert Storm indicate that the pace of war is accelerating with no clear end in sight. Aviation has proven that it is a full-fledged combat arm—deadly in close combat and able to manoeuvre decisive power to tremendous depth. Aviation is poised to become the dominant manoeuvre arm of the nineties and beyond.'  
:Desert Storm After Action Report, USAAVNC <sup>1</sup>

From its earliest days, the Australian Army has placed great value in the use of aircraft as a part of land operations. The Australian Light Horse in the Middle East in the First World War, for example, relied heavily on information provided by pilots and observers of the Australian Flying Corps. Captain Ross Smith and Lieutenant Frank McNamara were two of these officers, and their worth to the campaign (and perhaps the value of aviation in land warfare) was acknowledged with high awards for bravery and distinguished service.<sup>2</sup> They are part of the heritage of both Army Aviation and the RAAF. There have been many great developments in aviation since those early years, but there have been times when the emphasis in military flying was taken away from supporting the land battle. After McNamara earned his VC, it took 25 years for another Australian in the service of Britain, Air Vice Marshal Arthur Coningham, to renew the art of supporting soldiers in battle as part of the force. Most recently, Operation DESERT STORM exemplified the overwhelming effect of coordinated air power as part of the strategic plan, but it also validated the US Army's evolving doctrine of integrating aviation into operational and tactical schemes of land manoeuvre. This began in the US as Air/Land Battle concepts in the early 1980s. The fact that the Australian Army has chosen land/air operations as the theme for this conference means that the Australian Army is beginning to acknowledge the relevance of these concepts in the Australian context.

The subject of this paper is land/air operations in the present and the future, from the Australian perspective. The aim is to comment on the present and to speculate on the future. There has been an enormous amount of expert analysis of the future of land/air operations, and there seems to be agreement in many important areas. However there does not appear to be nearly as much consensus on the state of things here and now. The present seems to be at least as contentious as the future.

It is important to emphasise that this paper deals only with the Australian perspective. Australia should be careful in drawing parallels directly with the Second World War and DESERT STORM. Even RESTORE HOPE and similar coalition operations might be easily misread. We should certainly learn from international experience, but should take care in translating the lessons directly to the Australian strategic context. It is important to keep in mind, in particular, the immense difference in scale and nature of operations. Some conclusions from military history have little relevance to the defence of Australia as Australians see it today. Some strategic analysis that applies in other parts of the world, relating to operations at a different scale, of a different intensity or at a higher level than that forecast by Australia, has no bearing here. There are some characteristics in the Australian context that have driven development to date and will probably endure to shape the future. Among these are Australia's geostrategic features and, to an extent, the character of the Australian Defence Force. But there are other factors continuing to hold sway in some areas that, it could be argued, are no longer relevant. There are still others that have appeared only recently that we are yet to fully apply. It would seem to be a sensible first step to go over the basics and highlight the strategic factors that affect Australian land/air operations most directly.

Australia is a big country without international land borders. It has a huge coastline and several small remote offshore interests. Population is clustered in the east and south. There are vast underpopulated areas with a poor infrastructure that is not well suited to military operations. The continent is isolated from the rest of the world by a large sea-air gap, but there are archipelagic links to Asia. The least populated areas are orientated towards these island chains. This exposed northern expanse presents great challenges in the land defence of Australia. Defence analysts accept this as an important vulnerability because of the difficulties it presents in defence. It is the vastness of this northern approach and the relatively small force available to defend it that demands widespread and innovative use of aircraft in land force operations. It also points to a need for a cohesive approach in ensuring that sufficient aviation capability is dedicated to the land force to enable it to play its appointed role.

Australia's diplomatic ties with regional neighbours are steadily growing stronger. Southeast Asian nations appear to be increasingly keen to discuss security matters, with the emphasis on consensus and cooperation. Some regional economies are growing more rapidly than Australia's and their defence forces are acquiring the most modern of military capabilities. Australia has enduring bonds of friendship with the United Kingdom and the United States of America. Overall, Australia enjoys a benign security environment. However there are good reasons for our strategic watchkeepers to stay alert. The end of the Cold War has brought some unwelcome products. Lower tier nations have brought simmering local and regional disputes to the boil, proving that high intensity conflict can erupt with considerably less warning than could be expected under the surface tension of the Cold War. Military hardware is available cheaply on the international market, and a potential adversary could acquire high technology military capabilities quickly and quietly. Australia's technological edge can no longer be guaranteed in the region. The world order is changing and it is impossible to say with certainty what global and regional relationships will look like in 15 years time.

For strategic analysts, the challenge is not just that it is a period of profound change but that it is change without timescale or direction ... Only the boldest would attempt to predict the shape of the strategic environment in fifteen to twenty years time, and then with significant caveats.<sup>3</sup>

At the same time that these uncertainties exist, there is a sense of enduring peace in Australia—it has been more than 20 years since Vietnam, the last major national military involvement. Defence issues are not a high priority in the business of government or in the day to day affairs of Australians. It would be easy to propagate a national expectation of a 'peace dividend'.

The ADF is shrinking in size at the same time as defence policy places heavier demands on standing forces. Australia's defence policy is one of self-reliance within a framework of agreements and alliances. In short, Australian forces must be able to fight alone to defend Australia. Strategic analysts have said that there is no identifiable threat of invasion, and that if a substantial threat was to develop, there would be a long warning period—about 15 years. There has been consistency of guidance now since Paul Dibb presented his analysis of Australia's defence requirements in 1986 that the standing Defence Force must be capable of dealing with shorter warning conflict. This is difficult to define, but is now generally accepted as operations at the lower end of the spectrum, against small adversary forces with limited, usually political objectives. There is also a need for the standing forces to represent a viable component of national power, a deterrent and a foundation for expansion should there be a longer term requirement.

In the past, there has been an emphasis throughout the ADF on retaining tried and proven capabilities and associated doctrine. The capacity for expansion was seen as the real basis of the force. More recently, however, the Army has given considerable thought to tailoring forces specifically for short warning conflict, with an expansion base and a traditional force structure being important but secondary considerations. There is a growing suspicion that a standing army geared for high levels of conflict may not be well suited to defending Australia in short warning operations. It is even possible that preparing a force for Australian short warning contingencies may provide a better basis for operations at higher levels of war than vice versa.

Air to ground operations within the ADP organisation span several functions and all three Services can become involved. They can be grouped as those available from within the land force (organic capabilities) and those provided by the other Services (external support). Among organic capabilities there are information-gathering capabilities, those that facilitate command and control within the land force, those dedicated to tactical movement and thus contributing to land force manoeuvre, and specialised firepower, which is also a component of manoeuvre. The RAN provides very limited helicopter transport, usually in across the shore operations augmenting that provided by Army Aviation. The RAAF provides heavy strategic and tactical transport, photo reconnaissance and offensive air support in the forms of close air support (CAIRS) and battlefield air interdiction (BAI).

The Army's Aviation Corps meets the Army's immediate requirements for support, and is organised and trained along normal Army lines. For information gathering, there are two reconnaissance squadrons and a surveillance squadron. The reconnaissance squadrons are equipped with obsolescent Bell 206B-1 (Kiowa) helicopters. These aircraft have no sensors, rudimentary communications capabilities that are not fully compatible with standard Army radios, and marginally useful speed and range performance. They have no weapons for self-protection and no specialised survivability equipment to counter the types of anti-aircraft threats they are likely to encounter in the defence of Australia. At present the surveillance squadron uses leased civilian aircraft and has no specialised surveillance equipment. Pilots and observers locate and identify targets using the unaided eye. In short, the Australian Army's aerial surveillance and reconnaissance capability is rudimentary and far short of the need. There are long term plans to introduce a modern capability by about 2004. In the meantime, recognising an important capability gap, the Army intends to equip these units with lightweight sensors as an interim solution.

Most Army aircraft can assist land force commanders in exercising command and control by relaying or rebroadcasting radio communications. However the most useful form of support is in moving field commanders and their staffs within the area of operations and enabling them to continue to exercise command while they are moving between tactical headquarters. The Army uses fixed wing aircraft from the surveillance squadron and Bell UH-1H (Iroquois) helicopters of the operational support squadron for this task; the capability is always in heavy demand on operations and in peacetime exercises. All three Services require this type of capability and it is a curious fact that none identifies command liaison tasks as an important aspect of combat support. There is little doubt that the ADF will need to dedicate aircraft to this type of work on operations and it seems sensible to consider the capability as an essential need in each of the Services.

The most recently acquired of the Army's organic air to ground support capabilities is tactical air mobility. This is provided by a regiment based on two squadrons of Black Hawk helicopters. The regiment can move two infantry rifle companies into action simultaneously, or one company with a range of complementary combat support. A small number of CH47D (Chinook) medium lift helicopters can extend the range or augment the force-carrying capacity of the Black Hawk squadrons. The airmobile regiment represents a force-multiplying capability, enabling a commander of conventional infantry forces to influence activities over an area many times larger than would otherwise be possible. The major shortcomings of this capability lie not in its quality, but in its quantity and versatility. It is organised and tasked to support a small part of the land force, and even if reassigned for more flexible employment, there would be far greater demand than the small helicopter force could satisfy. Logistics support and aeromedical evacuation are two important functions that are carried out on an *ad hoc* basis by removing these and other aircraft from their tactical roles. This need for greater force airmobility is a direct consequence of the low force-to-space ratio mentioned earlier, and has been recognised as a key deficiency in successive strategic defence statements.<sup>4</sup>

If there is a glaring deficiency in the makeup of the field army intended to defend Australia in the northern approaches, it is in the area of long range firepower. Air-delivered firepower represents much more in the land defence of Australia than simply a means of supplementing ground based direct and indirect fires. An army obliged to react to aggressive actions of an enemy who holds the initiative must be able to strike swiftly. Failure to do so will allow the enemy commander to act with impunity, dictate the terms of battle and retain the upper hand.

To deny such an enemy freedom of action, an army needs combat power within striking distance of likely targets, and there are many thousands of these in the Australian case. Where infantry forces are used, they must be deployed close to the targets for which they are responsible, the proximity being dictated by the inherent speed of action of the force. This in turn revolves around the forces mobility and the range of its force projection capability. Australian land forces are infantry based and have low speed of reaction. With the exception of the ODF, mobility is that of organic vehicles and the ability to project force is limited to the range of field artillery towed by 4WD vehicles. Air delivered firepower can extend the fire projection capability by a huge margin. Aircraft dedicated to this role, or suitably equipped and reliably on call, can multiply the area within which a ground commander can react to adversary action. The faster the aircraft and the more quickly they can respond, the larger the factor of multiplication. The Army's organic aerial fire support is limited to one troop of three obsolete Iroquois 'gunship' helicopters. They, like the Black Hawk force multiplier, are dedicated to support of the ODF. There are plans to improve this capability along with the reconnaissance and surveillance modernisation project, but there are no plans to develop substantive attack or close air support capabilities within the land force. These remain as secondary air force tasks. The ADF is yet to examine objectively the broad issue of offensive air support to land operations in the defence of Australia in the light of strategic guidance.

The Australian Army, alone of the three Services, is being subjected to a thorough examination of its force structure from first principles.<sup>5</sup> The study is called 'Army in the Twenty-first Century' or A21, and is being conducted from outside the Army, by staff of Headquarters, Australian Defence Force. Its aim is related to short warning conflict and operations at the lower end of the spectrum. The need for an expansion base for higher levels of conflict is a limitation on this aim, although an important one. The study team will present its findings in December 1995, but already there are signs that there may be a place for radical new ideas to replace the old. The outcomes of A21 will affect the future of all land force capabilities, including air to ground support.

The RAAF provides most of the external support to land force operations. The exception is occasional assistance provided by the seven RAN Sea King helicopters. While RAN support is significant in tactical amphibious lodgements and extractions, it is a small proportion of the overall support picture and will not be further discussed in this paper.

Air transport support from the RAAF is provided by two squadrons of C130 Hercules aircraft, which share the strategic and tactical roles, and two squadrons of aging Caribous for shorter range tactical transport tasks. There is also occasional support from a squadron of HS748 aircraft, which can provide domestic-type services, and a squadron of Boeing 707 aircraft that can be used for long-haul strategic movement. There are well-developed plans to modernise the C130 fleet and a project is in its early stages to replace the Caribous with some form of light tactical transport. The Caribou replacement might be new aircraft of similar size to Caribou, more Chinooks, more C130s or some combination of these options.

The RAAF can be tasked by the Army to conduct high speed photo-reconnaissance, for which it uses four RF111 aircraft. CAIRS and BAI are provided by the two strike/reconnaissance squadrons of F111s, and the three tactical fighter squadrons of F/A-18 aircraft.

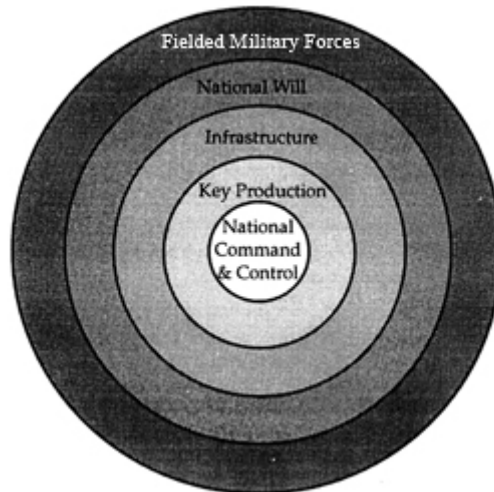
In analysing external land/air support arrangements, it would be fair to say that the situation is a little confusing. Since the end of the Second World War Army and Air Force have drifted apart in doctrinal approach towards the defence of Australia. Air power theories suggest that air and maritime forces will defeat any credible adversary in the sea-air gap, and that land defence is thus a capability merely providing depth. The Army on the other hand is convinced that a determined enemy will penetrate or infiltrate the forward air and maritime screen. It is the Army's view that the land force is more than a precautionary element prudently maintained in depth, and that the Army will inevitably commit troops to battle in any defence of Australia. Both points of view appear to be comfortably contained within broad defence policy. Both Army and Air Force have been able to develop structures, priorities and procedures and acquire equipment according to single-service priorities. This has led to a separation, if not a divergence of purpose that the single Services foster, and Headquarters ADF accepts, in a spirit of joint service cooperation.

There is plenty of evidence that a gap exists between the two Services. It exists in other nations' defence forces as well, in areas such as airspace management and command and control.<sup>6</sup> Nowhere has it been more visible in Australia in recent years than in the area of air to ground support. Australians had a good grasp of the importance of intimate support to Army operations in the Second World War. The lessons taught by Coningham in the Western Desert were not lost on Australians and were reinforced in the magnificent cooperative efforts involving No 75 and No 76 Squadrons at Milne Bay. Since then the RAAF has taken air power concepts used by the major air forces of the world, and in the last five years has enthusiastically incorporated these international theories in the Australian Air Force's emerging doctrine.<sup>7</sup> Most important in the context of this paper is the diminished importance that new air power doctrine applies to direct, intimate support of ground combat operations.

This 'parallel wars syndrome'<sup>8</sup> is less apparent in air transport operations than in other areas. At the strategic and operational levels, the air force today provides transport support to the land force in much the same way as it has done in the past. Control is centralised at high levels and joint priorities usually prevail. Tactical transport, particularly intimate battlefield support, is now more the province of the land force; either by using air force aircraft assigned under a land force commanders control for specific purposes or, increasingly, with organic army aviation forces. This represents a significant change. The decision to move battlefield helicopters into the land force, and the practice of selectively assigning RAAF transport aircraft to the supported Army commander, represent acknowledgment that air to ground support of this type should be dedicated and fully responsive to the needs of the supported commander. It recognises the problems inherent in allowing priorities to be assigned by remote staff who cannot hope fully to comprehend the changing situations faced by tactical ground commanders. OM Eather gives a graphic example of the difficulties this approach can cause in his account of the heroism of pilots of 9 Squadron in supporting D Company, 6 Battalion, The Royal Australian Regiment at Long Tan.<sup>9</sup> He also expresses soldiers' general belief that:

The means of providing this tactical support, from land, naval or air forces, must be capable of reliable and immediate reaction to the surface commander's directions in meeting an unfolding battle situation that is unable to be appreciated from any other viewpoint but his.<sup>10</sup>

The change in approach that has occurred in tactical air transport has not been reflected in the related area of tactical offensive air support. At present, RAAF controls CAIRS at a high level external to the land force. This is so because the only fighters and bombers useful for offensive close air support are also the ADF's only aircraft available for the strike and air defence roles. RAAF has long considered CAIRS and BAI as separate and subordinate to the core business of the air force— control of the air. Evidence of this exists in the RAAF's selection of the F/A18 as the ADF's only fighter, despite shortcomings in the ground attack role. It is evident also in the low priority accorded to CAIRS in peacetime exercises, and in recent proposals by RAAF to transfer the role of Forward Air Control to the Army to be carried out from helicopters. There was a notable change in approach several years ago, when the RAAF began an education programme to show the Army that F111 Pave Tack could be very useful for day or night precision bombing missions. Realistically though, it would be a rare event for an F111 to be available to engage a single small target for the Army given its expense and higher priority strategic and operational level obligations. Also, like the F/A-18, adverse weather limits F111 Pave Tack reconnaissance and this makes it an unreliable resource from the ground commander's point of view. In the event that spare fighter or bomber capacity existed, it appears likely that spare aircraft would be assigned BAI targets that are indirectly related to the land operation, as a more economical and potentially more effective mission than CAIRS.<sup>11</sup> This is in keeping with the widely accepted tenets of air power doctrine, where a strict hierarchy of targets now exists and where direct engagement of enemy forces is the lowest of the priorities. The targeting model developed by USAF Colonel John A Warden specifically for the 1991 Gulf War is shown as Figure 1.<sup>12</sup>



**Figure 1: The Five Strategic Rings**

It shows the enemy's command and control capabilities as the most important and therefore the highest priority targets, with forces in action the least important and thus the lowest priority targets. It is difficult to imagine a situation where it would be necessary to apply these priorities in the defence of Australia as envisaged in the 1994 Defence White Paper; nevertheless it appears that the RAAF has relegated CAIRS to a position of lesser importance than all other offensive missions. This issue is the central theme of a paper issued recently by the Air Power Studies Centre.<sup>13</sup> The existing situation is not a pleasing state of affairs for the Army, given the need for a long range strike capability that is guaranteed to respond at very short notice. In a letter to the editor of the *Australian Defence Force Journal*, Major General DM Butler (Ret) said:

Unlike any other country of similar capability air support is not guaranteed in our doctrine. If the words of the doctrine are equivocal on this issue and make much of the exception rather than the rule; if training is based on an open-ended commitment; if air commanders at every level believe they can withhold their support or change the arrangement, easily and without warning, the Navy and the Army face a real problem. Mark you, it is not a new problem, but there have been 20 years since the last active engagement to fix it.<sup>14</sup>

RAAF doctrine accurately describes the often critical importance of CAIRS to the success of ground operations, but there is certainly a degree of equivocation in the relevant section.<sup>15</sup> Statements highlighting the difficulty of the mission, the risk to valuable aircraft and crews, and the relative importance of other offensive missions seem to militate against the RAAF preparing adequately for CAIRS in future conflicts.

It would be useful to summarise the current state of affairs in air to ground operations before beginning the second part of the task—the future. Regarding the organic capabilities, there is need for modernisation in many areas and where the need is greatest there are projects in hand. In the case of airmobility and utility support, there are not enough aircraft, and although there are indications of force enhancements in the latest White Paper, there are no plans yet to expand the capability. External support presents challenges in some areas, as there has been a drifting apart of the Army and Air Force in their separate approaches to the task of defending Australia. No longer can the Army rely on close air support as in the Western Desert or at Milne Bay. Instead, close air support is now accorded a low priority in the order of air power tasks, and consequentially is virtually written off by unit commanders of land combat forces at the tactical level. To many commanders, there is simply no point in planning an attack that relies upon close air support. They accept that aircraft will rarely be released from higher priority air power missions or alert states. If they are, these aircraft are optimised for air-to-air fighting, not precision attacks against small force ground targets, and are susceptible to the vagaries of weather. Land force commanders need a guarantee of precise, effective and timely support responsive to their demands, and at present the RAAF is unable to provide this.

Now, what of the future? Although there is a chance that the status quo might continue, there is such a climate of change that the more optimistic view will probably prevail and the ADF should anticipate movement towards a new arrangement tailored to suit the Australian situation. Will there be a single-minded ADF approach to combat development in this area, or will the Australian preference for cooperative single service development prevail? The best way of estimating the future of air to ground operations in Australia appears to be to anticipate the direction of combat development in both the Army and the RAAF. This means analysing the future of A21 for the Army, air power doctrine for the RAAF, and any adjustments that might occur as a result of either interaction or Defence guidance.

It would not be wise to try to predict the future of land-air operations on a purely theoretical basis. There are practical reasons why some of the ideals of A21, for example, might never be translated into reality. For the same reasons, some aspects of air power theory as espoused in RAAF doctrine will probably never be reflected accurately in the structure and modus operandi of the RAAF. The most obvious of these complicating factors is cost. Defence resources are hard to come by and will continue to be so. Ideal solutions will seldom be affordable, either in finance or manpower terms. Another major factor is the nature and character of the ADF. It has developed as an organisation of three services that cooperate in joint operations. There is no strong movement towards an integrated defence force; instead there is general agreement that success in joint operations depends heavily on the quality of each partner's contribution. Each Service has a strong individualistic ethos that it guards jealously. Within the Services there are functional branches that also have parochial interests, and these are pursued and protected by senior officers loyal to the cause. This is particularly strong in the Army. Finally the ADF is a large organisation, and like all such organisations based on principles, traditions and a powerful bureaucracy, is inherently resistant to change. These factors represent friction that can be expected to reduce the pace of change, no matter how sensible the change may be.

A21 will probably identify a pressing need for greater situational awareness and increased mobility to overcome the Australian 'force to space' mismatch. There will be a new emphasis on speed of action and reaction. There will probably be a plan for widely dispersed operations across the northern approaches. There may even be proposals for forward basing of cadre forces and preemptive development of a land surveillance and C3I infrastructure during peacetime. There will probably be a desire to move away from concepts of holding combat power centrally to respond to enemy actions in the regions. Instead there may be new ideas of mixing complementary combat capabilities at much lower levels than ever before and basing them regionally. There will be a renewed emphasis on directive control and flatter command structures, with authority to make operational decisions decentralised to local and regional commanders. Command and control will probably become much more important in the education of Army leaders. There may be a trend towards equipping the more agile of the surveillance and reconnaissance forces with enough combat power to enable them to deal with enemy incursions as soon as they detect them- Having taken all measures such as these into account, it will be obvious that the force will still be unable to cover all likely targets with timely combat power. The lack of guaranteed firepower beyond the range of organic artillery will certainly be exposed as a significant weakness of the existing force.

Whatever the final concept of A21 may be, it appears very likely that the review will recommend substantial increases to the aviation contribution in the land defence of Australia. There will be a call for greater operational and tactical airmobility, with the ideal probably being that all tactical air transport assets, whether fixed or rotary wing, should be an integrated part of the force. There will probably be a stated desire for a greater number of armed aviation surveillance and reconnaissance units, at the expense of other less flexible or versatile Army units if necessary. There will probably be a strong preference for a form of air attack within the force to relieve conflicts of priority that exist within the dual-role Air Force squadrons. This would require the creation of attack helicopter elements, fixed wing elements specialised for CAIRS and BAI, or both. Essentially, A21 will probably call for enough tactical aviation capabilities within the land force to allow the land campaign to proceed without placing unreasonable demands on equally important air campaigns being fought at the same time.

Air Force development appears certain to follow the course set by current air power doctrine. There is no indication that the focus or detail of the *Air Power Manual* is likely to change in the foreseeable future.<sup>16</sup> This means that the RAAF will probably continue to concentrate its force structure, training and preparedness efforts on the upper levels of credible conflict. There is an existing bias towards strategic and operational concepts of defeating an adversary in the sea/air gap and this will probably endure. This indicates that RAAF priorities for funding, equipping and support will favour the air and maritime campaigns. Tactical support to the Army may be delayed or curtailed when conflicting priorities occur.

There are maxims of air power doctrine that militate against decentralisation of effort. The *Air Power Manual* states that air power encompasses all of the nation's aviation assets, military and civilian, and that it should be commanded at the highest possible level by a single officer who is expert in its application.<sup>17</sup> RAAF could therefore be expected to view any proposals to develop decentralised groupings of aviation capability as 'penny-packeting' and a failure to concentrate force or economise in effort. Similarly, suggestions of placing air power elements under the command and control of regional or local ground commanders would be unacceptable in terms of the maxims of unity and professional mastery. Any A21 suggestions to incorporate tactical air transport, CAIRS or BAI into the Army would almost certainly attract strong opposition from the RAAF on this basis. These are also 'traditional' RAAF functions<sup>18</sup> and there would be loud protests at such a suggestion.

There will be opposition to change from the Army as well. The cost of developing a substantially air-capable Army can only be paid by reducing capabilities elsewhere. Trimming of force elements in the Force Structure Review process has already cut away any pre-existing fat. The next stage is to cut deeply into capabilities, and most of these form part of the Army's tradition base and thus its ethos. Although these factors might be seen as emotional in nature, they are powerful catalysts and should be expected to lead to some bitter rearguard actions.

A21 will anticipate the friction opposing change. Nevertheless, it will probably produce an ideal that calls for a greatly increased aviation capability in a reorganised land force, enabling an air-minded approach to the land defence of Australia similar to the US Army's current doctrine. Aviation will be seen as the best catalyst for tailoring a force for the Australian situation because of its flexibility in application when operated as an integrated part of the force. It will also help to satisfy the need for versatility called for by the White Paper and adaptability for escalated levels of conflict. The ideal force will not depend on RAAF aircraft that must be diverted from higher priority missions for integrated offensive support; this will require the Army to develop a new type of air attack capability using both fixed and rotary wing aircraft, as called for in the White Paper.<sup>19</sup> It will call for a new concept for combining with other combat arms at small unit level. The result will provide many of the benefits of Eather's Tactical Air Support Group,<sup>20</sup> and also greater control over tactical manoeuvre.

The effects of interservice and internecine pressure will inevitably lead to compromise in the application of the A21 logic. At least initially, there will be no transfer of the tactical transport function from RAAF and there will be no change in the arrangements for fast CAIRS and BAI. Within the Army however, there will probably be general acceptance of the concepts recommended by A21. This does not mean that there will be revolutionary change. A process of gradual development will probably begin, including projects for precision weapons, C3I systems and ground mobility improvements. There will also be projects to acquire more utility helicopters for airmobility, more armed reconnaissance helicopters and a significant number of fixed wing aircraft for land surveillance and electronic warfare tasks. Most importantly there will probably be a project to develop the nucleus of an aviation attack capability, perhaps as a trial or concept demonstration initially, to multiply the area of influence of regional forces. This will begin the process of removing from the RAAF the burden of responsibility for intimate tactical support of the land force.

As Australia approaches the 21st century, with more than 20 years since its defence forces have been involved in any substantial conflict, land-air operations appear to be organised and applied to the task according to the doctrine of the service operating the aircraft. However there is a new awareness arising from strategic guidance and observations of modern warfare: the air-minded approach adopted by US and other large armies has great relevance to the land defence of Australia. The winds of change are blowing, but revolutionary developments are unlikely—there will inevitably be resistance from within a large organisation such as the ADF. But the changes will occur, slowly in some sensitive or costly areas, and the result will be a land force that can deal for the first time with the dilemmas of defending Australia according to its charter. In Australia, that will mean extensive use of aircraft as a part of combat and supporting forces. As Liddell Hart wrote more than 50 years ago:

There are over two thousand years of experience to tell us that the only thing harder than getting a new idea into the military mind is to get an old one out.<sup>21</sup>

### Endnotes

1. *Desert Shield/Storm After Action Report*, USAAVNC, 28 June 1991, p A-10.
2. CAPT Ross Smith, KBE, MC & Bar, DFC & 2 Bars, AFC; LT Frank McNamara, VC, CB, CBE.
3. Dr Stewart Woodman, 'Understanding the New Strategic Agenda', *SDSC Newsletter*, Winter 1995.
4. *Defending Australia—Defence White Paper 1994* (DA94), pp 49-50. The deficiency was previously discussed in the Dibb Report, the 1987 White Paper, ASP90 and ASR93.
5. *Defence White Paper 1994*, p 49.
6. There is an ongoing debate in the US, UK, Canadian and Australian forces over the primacy of command and control measures in joint air/ground operations. The Air Traffic Control debate is a separate issue that has also continued unresolved for many years.
7. D1 (AF) AAP 1000, *The Air Power Manual*, 2nd edn, March 1994. The first edition was published in August 1990.
8. OM Eather, 'The Tactical Support Group', *Australian Defence Force Journal* 98 (January/February 1993), 7-22. Eather uses this term to describe a separation between Army and RAAF doctrine that leaves the Army without guaranteed and effective close air support.
9. *Ibid*, pp 14-15.
10. *Ibid*, p 7.
11. *Air Power Manual*, p 111.
12. Reproduced from Alan Stephens, 'Aerospace Strategy', *Australian Defence Force Journal* 98 (January/February 1993), p 33.
13. WGCdr AJ Quaife, *Close Air Support: Vietnam Dinosaur or Key Defence Capability?*, Air Power Studies Centre Paper No 35, August 1995.
14. MAJGEN DM Butler (Ret), letter to the editor, *Australian Defence Force Journal* 98 (January/February 1993). 15. *The Air Power Manual*, 2nd edn, pp 108-110.
16. At an Air Power workshop on doctrine held early in September 1995, there was a resolution to recommend to the Chief of the Air Staff that the *Air Power Manual* did not require amendment for the foreseeable future.
17. *Air Power Manual*, 2nd edn, pp 44-45.
18. *Ibid*, p 29.
19. *Defence White Paper 1994*, p 49.
20. Eather, 'The Tactical Support Group', p 19.
21. Basil Liddell Hart, *Thoughts on War*, London, 1944, p 115.