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**CLOSE AIR SUPPORT: VIETNAM DINOSAUR OR KEY  
DEFENCE CAPABILITY**

**By**

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## **About the Author**

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## INTRODUCTION

Future battles and campaigns have the potential for extending over greater distances and continuing longer than any military operations of the past. Victory in such battles will demand complete unity of effort and thoroughly synchronised air and ground action.<sup>1</sup>

*The Air Power Manual* (second edition) lists three fundamental air campaigns: control of the air, air strike, and air support. These campaigns are interactive and should be pursued concurrently where possible.<sup>2</sup> Each air campaign consists of various air roles which ‘encompass the actual conduct of combat’.<sup>3</sup>

In the land environment, anti-surface forces roles are battlefield air interdiction (BAI) and close air support (CAIRS). BAI is ‘interdiction within the broad land battle area and is defined as air action directed against enemy forces and resources that are in a position to directly influence and affect the land operation’.<sup>4</sup> In contrast, CAIRS is defined as ‘air actions against hostile targets which are in *close proximity to friendly forces* and which *require detailed integration* of each air mission with the fire and movement of those forces’.<sup>5</sup>

While the Royal Australian Air Force (RAAF) recognises the validity of the CAIRS role in its doctrine and continues air contact officer (ACO) and forward air controller (FAC)<sup>6</sup> training, the strength of the RAAF’s commitment to CAIRS is less than wholehearted. The RAAF has never operated a dedicated FAC aircraft type or one that could be considered to be operationally capable in the FAC role. For example, the Winjeel, a basic flying training aircraft, was introduced as a FAC trainer in 1968 but had little capability to perform an operational FAC role. In early 1994 the RAAF commenced the transfer of a small number of Pilatus PC9/A aircraft to replace the Winjeel in the FAC training role. Like the Winjeel, however, the PC9/A (another basic training aircraft) has little operational capability.

Together with the operational shortcomings of the PC9/A aircraft there are shortcomings in relation to the ADF concept of CAIRS operations. While valid concepts were developed during the Vietnam conflict, when, from 1966 to 1971, a total of 33 RAAF fighter pilots served as FACs, the resulting doctrine was specific to that situation. The doctrine was developed in response to the specific enemy, its fielded equipment, and the environment peculiar to that war. Yet almost 30 years later that experience still defines the current ADF doctrine for CAIRS.

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<sup>1</sup> *FM 100-5, Operations*, Washington: Headquarters, Department of the Army, 1992.

<sup>2</sup> AAP 1000, *The Air Power Manual*, 2nd Edition, Canberra: APSC, 1994, p 41.

<sup>3</sup> *ibid.*, p 43.

<sup>4</sup> *ibid.*, p 110.

<sup>5</sup> Australian Defence Force Publication 1 (ADFP 1), *Operations Series - Doctrine*, 1993, para. 1122. Emphasis added.

<sup>6</sup> Australian Joint Service Publication, JSP(AS) 11, *Joint Operations - Offensive Support*, Fourth Edition, 1992, defines the function and roles of a FAC and ACO. The essential difference between the two is that an ACO acts in an advisory capacity and does not actually control aircraft conducting CAIRS attacks. For the purpose of this paper, the terms FAC and ACO can be regarded as synonymous.

Under existing ADF doctrine, fighter/ground-attack (FGA) aircraft tasked to attack hostile targets close to friendly forces will be under direct control of a FAC, probably operating from a slow, fixed-wing aircraft. The FAC, operating with a ground formation from a forward location, will be in direct contact with both ground forces and attacking aircraft. Target information will be passed to the pilots of attacking aircraft by radio, using a standard 'nine line brief', which consists of nine elements ranging from a description of the target and its location to the position of friendly forces and the required attack geometry. Target positions will be marked by smoke and, to ensure safety of friendly forces and to maximise effectiveness, the FAC will control ordnance release.

While ADF operational doctrine for CAIRS has changed little in the past 30 years, the weapons and capabilities of the RAAF have progressed significantly. In this 30-year period, RAAF attack capabilities have progressed from level bombing techniques, reminiscent of World War II, to the delivery of precision guided munitions (PGMs) from platforms that employ highly accurate, automated weapons release systems. RAAF bomber aircraft have progressed from Canberras (which conducted successful level-bombing operations in the Vietnam conflict) to the F-4E Phantoms (which were leased for two years following the Vietnam conflict), to the F-111C (acquired in 1973). In terms of fighter aircraft the RAAF has progressed from the Avon Sabre to the Mirage III and then to the F/A-18 (introduced in 1985). Both the F-111C and the F/A-18 are highly capable aircraft, equipped with some of the world's most advanced technology.

The decision to maintain FAC training by introducing PC9/A aircraft to the role shows at least a limited level of RAAF commitment to CAIRS. But in 1989 a joint working party on the future of air control arrangements for CAIRS recommended that the RAAF divest itself of the day-to-day working responsibility for FAC by transferring doctrinal responsibility for CAIRS to the Army.<sup>7</sup> While this recommendation was not adopted, the ambivalence towards the CAIRS role remains. This is evident in *The Air Power Manual* which, although supporting the role<sup>8</sup> points to such limitations as:

- a. sufficient tactical aircraft will seldom be available to meet all air tasks;
- b. multi-role F/A-18 and F-111 aircraft would probably be engaged in competing priorities of counter air and strike operations;
- c. physical limits of terrain, visibility, communications, ground fire, proximity of friendly forces, ordnance type and aircraft type; and
- d. the vulnerability of CAIRS aircraft to modern, easily acquired, shoulder launched surface-to-air-missiles (SAMs).<sup>9</sup>

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<sup>7</sup> Patching, WGCDR C J., *The Future of Forward Air Controller (FAC) and Air Contact Officer (ACO) Operations and Training in the RAAF*, (81WG 71/1/Air Pt 1 [10]), 30 April 1992, para 2.

<sup>8</sup> RAAF doctrine relating to CAIRS has been significantly amended by the second edition of *The Air Power Manual*. The current publication supports conduct of close support operations whereas the initial edition concentrated on limitations of traditional techniques to the point where Army commanders could be excused for thinking the RAAF would not provide CAIRS.

<sup>9</sup> *The Air Power Manual*, Second Edition, pp 109-110.

The conflict between the doctrinal recognition of the validity of the CAIRS role and the lack of provision of a true ADF CAIRS capability requires resolution. The aim of this paper is to show that air power concepts for CAIRS should be embraced by the RAAF without reservation, and that operational doctrine should be developed to match Australia's strategic environment and existing weapons platform capabilities.

The paper's scope is limited to:

- a. an examination of requirements for a CAIRS capability based on current doctrine and a brief historical perspective,
- b. a review of Australia's strategic guidance and current ADF capability for CAIRS, and
- c. concepts for an appropriate contribution of air power to the air-land battle that is within current or projected ADF resources and matched to Australia's strategic environment.

## PART ONE

### History and Doctrine

Undoubtedly the great use of air power in close support of troops and naval vessels in the present war has been a tremendous surprise to British militarists and to the staffs of all three services.<sup>10</sup>

Development of air power concepts and applications has broadly followed two prevailing and often competing schools of thought: the strategic and the tactical. With the advent of military aviation, aircraft offered a logical extension to tactical Army and Navy activity. During World War I, the main advantage of aircraft operating in close cooperation with the Army was to provide an observation and communication capability for an infantry immobilised by trench warfare and subject to heavy artillery barrages.<sup>11</sup> Towards the closing period of this war, strategic bombing emerged as a means of extending the terror of warfare to an enemy's homeland. With this strategic capability emerged concepts for air power independence, advanced by leading theorists of the period: General Giulio Douhet, Lord Trenchard and General 'Billy' Mitchell.<sup>12</sup>

During the inter-war period developments in air power capabilities and a propensity for strategic applications led the independent air arms of Britain and America to shift emphasis away from close support capabilities to fleets of long range heavy bombers.

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<sup>10</sup> Blunt, FLTLT V.E.R., RAF, *The Use of Air Power*, Pennsylvania: The Military Publishing Company, 1943, p 87.

<sup>11</sup> Blount, WGCDR C.H.B., OBE, MC, 'The Development of Army Co-operation Since 1918', A Selection of Lectures and Essays from the Work of Officers Attending the Fourth Course at the Royal Air Force Staff College 1925-1926, Air Publication 1233, Air Ministry, 1926, pp 52-61.

<sup>12</sup> Smith, Peter C., *Close Air Support*, New York Crown Publishers, 1990, pp 1-2.

In contrast, Germany's Luftwaffe and the Soviet air force were dominated by concepts of operations from the tactical school of thought.

Throughout World War II, while maintaining faith in the principles of strategic air power, Allied air forces also demonstrated the validity of tactical air power by emulating Luftwaffe principles employed effectively during the German blitzkrieg of Europe. For example, the Royal Air Force's employment of air power as part of the land battle was decisive in the 8th Army's North Africa campaign.<sup>13</sup> No. 3 Squadron, RAAF, equipped with P-40 Tomahawks and later Kittyhawks, participated in this campaign. Lessons learned by Australian pilots in the Middle-East were put to use in decisive close support operations conducted by No. 75 Squadron and No. 76 Squadron at Port Moresby and Milne Bay. At the close of World War II the successful Allied air forces had struck a balance between the strategic and tactical applications of air power, and had developed principles of close air support to integrate air power with the land battle.

The immediate post World War II era saw wholesale disarmament and a dismantling of conventional capabilities in response to the dawn of 'lasting peace'.<sup>14</sup> It did not take long, however, before Cold War reality introduced a new doctrine based on missile technology and strategic concepts of nuclear deterrence and mutual assured destruction (MAD). Although Cold War doctrine emphasised strategic air power applications, in Korea, and later in Vietnam, air forces were reviving concepts of close support for ground forces.

Conflict in Korea and Vietnam showed that lessons regarding the value of tactical air power learned during World War II were still valid in the jet age. These lessons, however, had to be re-learned. In Vietnam in particular, the concept of CAIRS under airborne controller direction emerged as a viable method to focus the enormous firepower of United States air forces.

The pivotal role of air power in direct support of ground forces is a lesson that has been learned and re-learned through each conflict of the modern era. In times of peace, defence thinking appears to focus on strategic deterrence rather than the tactical capabilities of air power. RAAF thinking has followed this trend. The first edition of *The Air Power Manual* clearly placed CAIRS in a subordinate role to campaigns for Control of the Air and Air Bombardment. The manual emphasised the tactical difficulties in providing effective CAIRS and the inclusion of the role in RAAF doctrine was qualified as follows:

... CAIRS should only be provided where an acceptable degree of attrition can be expected and where it is explicitly acknowledged that scarce air resources are being diverted from other roles.<sup>15</sup>

Current RAAF doctrine, as espoused in the second edition of *The Air Power Manual*, acknowledges the capability of both F/A-18 and F-111 aircraft to provide close support and elevates the importance of the role. The second edition also states that

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<sup>13</sup> Air Publication 3235, *The Second World War 1939-1945 Royal Air Force*, Air Support, Air Ministry [A.H.B.] 1955, p 91.

<sup>14</sup> Smith, *Close Air Support*, p 119.

<sup>15</sup> AAP 1000, *The Air Power Manual*, Canberra: APSC, 1990, p 177.

‘should the ADF be called on to fight a major land battle ... CAIRS would be a priority role of offensive air support for the RAAF’.<sup>16</sup> The inference that land commanders will not be supported, either through fear of attrition or by a slavish dedication to counter air activity, no longer pervades RAAF doctrine. However, the manual correctly indicates problems inherent in what it describes as ‘traditional’ CAIRS applications.<sup>17</sup>

### **The Continuing Relevance of CAIRS**

In static warfare, firepower provided by tactical air assets can be treated as ‘flying artillery’ and has some degree of autonomy. However, should ground forces plan to manoeuvre, mobility of air delivered firepower must be developed and integrated with the manoeuvre plan.<sup>18</sup> In his article *Tactical Air Support of Ground Forces in the Future*, Lieutenant Colonel H.T. Gonzales of the United States Air Force mounts a persuasive argument for integrating air power with the manoeuvre plan of ground forces, and for a shift in the focus of support away from the close battle. This theme is reflected in a paper by Major R. Archambault of the United States Army and Lieutenant Commander T.M. Dean of the United States Navy:

One of the issues that has rankled Army commanders ... is this nominating [of targets] process ... . One arm of service identifies what needs to be hit; another arm decides whether or not it is going to be hit ... . As a result, many ground commanders simply do not plan on [CAIRS] because they cannot rely on it being responsive unless it has been integrated in detail (and approved) beforehand ... . [CAIRS] sorties dedicated to ‘immediate response’ are not a satisfactory answer. [CAIRS] has to be integrated in the maneuver [sic] scheme from the outset just as attack helicopter assets are integrated.<sup>19</sup>

Integration of air power with the ground force manoeuvre plan is not a new idea. Air Marshal Lord Tedder is attributed with the following statement, made after the El Alamein victory in 1942:

Every night the air and ground commanders must hold a joint staff meeting to hash over problems and decide tomorrow’s program. The close air support and air interdiction campaigns can then be integrated into the ground commander’s overall concept of operations.<sup>20</sup>

The concept of air power as a manoeuvre element was proved to be sound during ground operations for the liberation of Kuwait in 1991. Specialised A-10 CAIRS aircraft were employed, as were multi-role F/A-18 and F-16 aircraft. FAC missions were initially flown by the United States Marine Corps with role-dedicated OV-10 aircraft, however, in high threat areas, operations were switched to two seat F/A-18D

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<sup>16</sup> *The Air Power Manual*, 2nd Edition, p 110.

<sup>17</sup> *ibid.*, pp 109-10.

<sup>18</sup> Gonzales, LTCOL H.T., *Tactical Air Support of Ground Forces in the Future*, Alabama: Air University Press, May, 1990, p 80.

<sup>19</sup> Archambault, MAJ R. and Dean, LCDR T.M., *Ending the Close Air Support Controversy*, Newport: Naval War College, 21 June 1991, p 7.

<sup>20</sup> Charles M. Westenhoff, *Military Air Power*, Alabama: Air University Press, 1990, p 43.

aircraft. The United States Air Force conducted interdiction missions controlled by F-16 'fast FAC' aircraft.<sup>21</sup>

The changing nature of conventional ground warfare establishes greater requirement for mobility, short response times, round-the-clock operations and dispersion of forces.<sup>22</sup> This has particular relevance for the strategically important northern regions of Australia where a difficult and harsh environment, enormous land and ocean spaces and an absence of infrastructure place unique demands on defence operations. Fixed wing air power can cover distances so rapidly that its use could preclude responsive deployment of artillery or helicopters. In Australia's circumstances, integration of air power as a manoeuvre element demands participation of F-111 and F/A-18 aircraft.

## PART TWO

### Current Policy and Capabilities

Close air support is becoming an increasingly imperilled mission in well defended airspace. It will definitely not be a mission for expensive fighters like the F-18.<sup>23</sup>

There is probably a case for a successor aircraft to the Macchi 326 ... to provide, maritime and close air support in the less hostile environment expected in some credible contingencies.<sup>24</sup>

Australia's defence policy is defined in the Government White Paper, *Defending Australia 1994*. This document describes Australia's strategic outlook and provides guidance for planning and developing defence capabilities. The White Paper's description of credible land operations includes consideration of air delivered firepower in support of the land force.<sup>25</sup> F-111, F/A-18 and new lead-in fighter aircraft as well as such organic Army firepower assets as artillery, helicopters, tanks and other armoured vehicles, are identified as assets capable of providing firepower support for infantry and reconnaissance units.<sup>26</sup> In view of the magnitude of the Army's task in defending Australia's northern regions, the flexibility, responsiveness and ubiquity of air power make it a logical choice for firepower support from the range of ADF capabilities.

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<sup>21</sup> 'Fast FAC' is a generic term used to distinguish FAC operations conducted from a FGA type aircraft from those utilising conventional, slow speed FAC platforms. For further details see Hertberg, CAPT R., 'Beyond the Fire Support Coordination Line (FSCL): Contact the Killer Scouts', *USAF Fighter Weapons Review*, Spring 1992, pp 12-17.

<sup>22</sup> Langtry, J. O., 'Army Aspects of the Tactical Airpower Requirements', *The Future of Tactical Airpower in the Defence of Australia*, edited by Desmond Ball Canberra: Australian National University, 1976, p 117.

<sup>23</sup> Lambeth, Benjamin J., 'Future Air Power Developments', *Air Power Global Developments and Australian Perspectives*, edited by Desmond Ball, Sydney: Pergamon-Brassey's Defence Publishers, 1988, p 84.

<sup>24</sup> Graton, General P.C., 'An Address by the Chief of Defence Force', *Journal of the United Services Institute of Australia*, Volume 9, Number 2, June 1988, p 50.

<sup>25</sup> *Defending Australia, Defence White Paper*, Canberra AGPS, 1994, para 5.60.

<sup>26</sup> *ibid.*, paras 5.41, 5.60.

## Current Status

The ADF possesses a considerable capability to apply tactical air power in the land environment. Close support for land forces would be provided by the RAAF's Tactical Fighter Group (TFG), equipped with F/A-18 aircraft, and/or the Strike Reconnaissance Group (SRG), equipped with F-111 aircraft. Units from these Groups would be assigned to a joint force under an Air Component Commander.<sup>27</sup> Although both aircraft can deliver precision guided munitions, CAIRS training and tactics still follow conventional techniques employed during the Vietnam conflict for unguided weapons delivery.

Acquisition of the Pave Tack<sup>28</sup> system has enhanced the utility of F-111 aircraft in offensive support roles. This precision air support (PAS) capability has been ably demonstrated by the SRG, by both day and night, albeit in a benign air environment.<sup>29</sup> F/A-18 aircraft, equipped with AN/ASS-38 Forward Looking Infra-Red (FLIR) and laser designating pods, have a capability similar to the Pave Tack equipped F-111 aircraft.

Multi-role aircraft such as the F/A-18 and F-111 can be configured for more than one role in the same mission, referred to as multi-mission or 'swing-role' capability. This capability has been demonstrated by Air Commodore B.R. Wood, then commander RAAF Northern Area, as part of 'swing-role' missions flown by F/A-18 aircraft during Exercise K92.<sup>30</sup> Swing-role CAIRS missions were flown by aircraft that were fully equipped with armament for air defence as well as CAIRS roles. Similarly, aircraft on air defence alert carried CAIRS armament so as to be able to scramble for either air defence or CAIRS tasks. F-111 aircraft showed a similar multi/swing-role capability during this exercise, being placed on alert and configured simultaneously for strike and air defence missions.

Notwithstanding the endorsement of CAIRS by current defence policy and RAAF doctrine, arguments against concepts for close support of ground forces persist within the Air Force. And although RAAF F/A-18 and F-111 aircraft could provide significant firepower for close support functions, proficiency in the traditional CAIRS role has been limited by a lack of commitment and a pervasive uncertainty regarding the role. The decision to transfer PC9/A training aircraft into the FAC training role, an expedient that does little to improve the RAAF's operational capability to support ground forces, reflects this outlook.

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<sup>27</sup> JSP(AS) 11, Annex A to Chapter 2.

<sup>28</sup> The Pave Tack system combines infra-red (IR) targeting with laser target designation. As Pave Tack targeting is dependent on radiated IR energy, the system is fully capable both by day and night. The target designation system provides precision for delivery of laser guided weapons. Criss, P.J., 'Employing Smart Technology in Low Intensity Conflict', Air Power Studies Centre Paper No. 6, August 1992, pp 4-7.

<sup>29</sup> For a deeper discussion of F-111 precision air support see Criss, 'Employing Smart Technology in Low Intensity Conflict'.

<sup>30</sup> Wood, GPCAPT B.R., CDRRAAFNA, *K92 - Some Thoughts on Offensive Air Support and Forward Air Control*, May, 1992.

Opposition to the CAIRS role is advanced on the grounds that:

- a. Aircraft conducting close support missions are extremely vulnerable to small arms fire, anti-aircraft artillery and shoulder-launched SAMs. High value, multi-role aircraft should not be exposed to such risk.
- b. CAIRS missions are very difficult. High speed, dynamic attacks in a hostile CAIRS environment compound problems of target acquisition. The degree of difficulty degrades accuracy, and hence the value, of CAIRS missions.
- c. Less obvious and indirect forms of air support may be of greater value to the overall campaign. Therefore, the limited number of multi-role assets available should not be distracted from a 'prime' (or more productive) campaign.

### **Vulnerability to Ground Fire**

Aircraft vulnerability to small arms fire and a variety of widely available, low cost, man-portable SAMs is an argument frequently cited against the CAIRS role. In this argument, preservation of the resource (expensive, multi-role aircraft) assumes greater importance than the tactical task at hand. The ADF clearly cannot afford to waste aircraft assets in any future conflict. But why should the loss of an aircraft engaged in close support of ground forces be any less acceptable than the loss of the same aircraft engaged in other roles? And it is not the case that the ground support role necessarily carries greater risk. Although the modern battlefield environment does pose a significant threat to aircraft, modern air-to-air missiles and strategic defences make counter air, strike and interdiction roles potentially even more deadly. Yet fear of attrition, together with other considerations, leads to the proposition that low-cost training aircraft (such as the Aermacchi MB-326H or the new lead-in fighter)<sup>31</sup> could be employed in the CAIRS role. If a low-cost, training aircraft is expected to operate - and survive - in the anticipated CAIRS environment, should not more capable ADF aircraft also be expected to operate, probably with less risk?

The high costs of F/A-18 and F-111 aircraft reflect the capability of these weapon systems. Each of these aircraft is designed to attack ground targets with high accuracy in a hostile environment. These aircraft have very high performance and are equipped with electronic counter measures and warning devices. Both F/A-18 and F-111 aircraft weapons systems can designate ground targets and accurately deliver weapons from outside the range of manportable SAMs and small arms fire. Yet as one senior RAAF officer, Group Captain P.J. Criss, asserts, the implications of this capability for support of land forces are poorly understood by ADF commanders.<sup>32</sup>

While these state-of-the-art weapon systems have significant tactical implications, the weapon delivery tactics used are not compatible with the CAIRS procedures developed for weapons and aircraft of the Vietnam era - the very procedures on which current ADF doctrine is based.

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<sup>31</sup> Under Project AIR 5367, the ADF is seeking acquisition of a small jet aircraft to conduct lead-in aircrew training for F/A-18 and F-111 aircraft. The Hawk 100, MB-339FD, AMX, L-59, Alphajet, and T45 aircraft have been 'short-listed' for further consideration.

<sup>32</sup> Criss, 'Employing Smart Technology in Low Intensity Conflict', p 21.

## Degree of Difficulty

In conventional tactics for CAIRS missions, attacking aircraft will hold in a secure area and receive target information from a FAC. When ready, aircraft will transit to the target and deliver the requested ordnance. Because the FAC will mark target positions with smoke and coordinate the attack with other friendly fires, the attack sequence must be closely timed. As CAIRS aircraft approach, the FAC will describe target positions in relation to marking smoke or other natural features. When satisfied that the pilot has acquired the correct target, the FAC will authorise attack. These conventional CAIRS tactics are well suited to slow attack aircraft (e.g. Skyraider or A-10 Thunderbolt) delivering high drag bombs or napalm. Such attacks are conducted at low altitude and in very close proximity to the target, and consequently can be readily orchestrated by the FAC.

The nature of conventional CAIRS tactics, when conducted on modern battlefields, renders attacking aircraft vulnerable to man-portable SAMs and small arms fire. Therefore, a current tactic employed by high-speed aircraft is to use a very high speed ingress to the target area (1,000 km/hr), at very low altitude (40m), followed by a 'pop-up' to higher altitude to acquire the target and deliver the weapons. This tactic reduces aircraft exposure to enemy defences and improves the probability of survival, but it also limits the time available for the pilot to acquire the target. Consequently, accuracy is degraded and the risk of injury to friendly forces is increased. While the degree of difficulty in performing such attacks limits their likely effectiveness, it does not invalidate the concept of providing support for ground forces.

## Limited Multi-Role Assets

The limited number of tactical aircraft which will be available to an Australian Joint Force Commander will constrain air power options. 'Control of the air is the prime campaign of the RAAF'<sup>33</sup> and must be achieved if other campaigns are to be conducted without unacceptable interference from enemy air power. While it is logical to acknowledge the primacy of the control of the air campaign, arguing that this campaign must be completed before undertaking other action contradicts the air power maxim of concurrent campaigns. True multi-role/multi-mission aircraft such as the F/A-18 and F-111 give a commander the option to conduct campaigns concurrently, even in a single mission. The extent of air control will be, by definition, a question of degree - limited in time and space. Multi-role/multi-mission aircraft can contribute to support campaigns without significant distraction from the prime campaign for control of the air.

The argument that limited aircraft numbers will prevent the conduct of CAIRS reveals an ignorance of Australia's doctrine for command and control of joint operations and the requirements/priorities that will develop in specific operations. In a letter published by the *Australian Defence Force Journal*, Air Commodore Ashworth illustrated the argument's fallacy:

If ... the circumstances and defence strategy dictate that RAAF fighter and strike aircraft be used to provide close support to the troops in the field, rather than, say,

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<sup>33</sup> *The Air Power Manual*, 2nd Edition, p 63.

air defence and strategic strike, *then that will occur*, irrespective of what is in the doctrine or what 'the air marshals' may or may not think.<sup>34</sup>

## PART THREE

### Where Do We Go From Here?

The conduct of air power roles should not be tied to specific airframes, nor to 'traditional' methods necessarily.<sup>35</sup>

Arguments against the conduct of CAIRS missions are peripheral to the central issue of support for ground forces. That such support is a fundamental air force role is a fact of history and current doctrine. The question of how support will be provided is the issue for resolution. Conventional CAIRS tactics, developed for the Vietnam war, are no longer matched to capabilities and weapons of the ADF. Therefore, the ADF has three basic options for the future of the CAIRS role:

- a. The ADF could maintain the status quo, including all attendant weaknesses - characterised by FAC training for a future 'Vietnam' concept of operations.
- b. Although not an option that would provide a joint force commander with close support air power, the RAAF could cease training for the CAIRS role.
- c. A new concept of operations, suited to current capabilities, could be developed to exploit ADF weapons platform potential.

To maintain the status quo does nothing to address the problems associated with traditional CAIRS conducted on the modern battlefield. For example, the vulnerability of aircraft and poor accuracy which are a feature of traditional CAIRS limit the effectiveness of the role. Another problem is that ambivalence towards the role has led to the RAAF maintaining only a training, rather than an operational, FAC capability.<sup>36</sup>

Should the RAAF lose interest to the extent that it elects to cease training for CAIRS, it is highly probable - and appropriate - that the Army would develop its own capability for some form of air support.<sup>37</sup> In an article highly critical of the status quo of RAAF support to Army, O.M. Eather has proposed a concept for a Tactical Air Support Group, under command of a surface force officer, and exclusively committed to CAIRS.<sup>38</sup>

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<sup>34</sup> Ashworth, AIRCDRE N., 'Air Power', *Australian Defence Force Journal*, No. 94, May/June 1992, p 6. Emphasis added.

<sup>35</sup> Waters, GPCAPT G., *Gulf Lesson One - the Value of Air Power: Doctrinal Lessons for Australia*, Canberra: Air Power Studies Centre, 1992, p 286.

<sup>36</sup> *The Air Power Manual*, Second Edition, p 110.

<sup>37</sup> Discussion regarding the 'ownership' of air power in the ADF is beyond the scope of this paper. For more detail see Kavanagh, WGCDR B.L., 'One-a-Penny, Two-a-Penny ...', *Australian Defence Force Journal*, Number 76, May/June 1989, pp 3-10.

<sup>38</sup> Eather, O.M., 'The Tactical Air Support Group', *Australian Defence Force Journal*, Number 98, January/February, 1993, p 19.

In a small defence force, economy of effort afforded by multi-role assets responding to the priorities of a joint force commander, means that the acquisition of dedicated CAIRS aircraft is neither a sensible nor even necessary option. The current weapons platforms of the ADF can provide ground commanders with significant and responsive firepower from the air. However, techniques must be developed which exploit PGMs and the capabilities of available 'smart' technology. A revised concept of operations and an effective operational CAIRS capability should be developed jointly between the Army and the RAAF. Traditional CAIRS tactics and traditional FAC techniques must be replaced by procedures which will allow effective close support to be provided by current inventory weapons systems, without any unnecessary risk of attrition.<sup>39</sup>

### **A New ADF Concept of Operations**

In ADF operations, CAIRS missions will be conducted with F-111 or F/A-18 aircraft. The employment characteristics of these weapons platforms should therefore determine operational concepts. To conduct accurate attacks against tactical targets, crews of both aircraft types require precise target location and target acquisition, either visually or by other sensors of the weapons platform (i.e. radar or FLIR).

Although F/A-18 aircraft could achieve accuracy with free-fall weapons, employment of PGMs would allow attacking aircraft to remain outside the range of shoulder-launched SAMs and small arms fire. PGM stand-off capability makes visual acquisition of the target unnecessary and, possibly, undesirable. Accordingly, traditional target marking and close control techniques are not appropriate for ADF CAIRS operations.

Key capabilities required for effective F/A-18 and F-111 CAIRS are precise location and designation of the target; and secure, reliable communications. These capabilities could replace marking smoke and close control techniques respectively. Proposed concepts for Australian operations within current or future ADF capabilities, are:

- a. ***Airborne Controlled Operations.*** Airborne control of CAIRS missions could be achieved from either Army helicopter gunships or two seat F/A-18B aircraft. Aircraft selected as lead-in fighters for the ADF could also serve as operational platforms.<sup>40</sup> Provision of the Global Positioning System (GPS) as a common navigation reference for both FAC and CAIRS aircraft would ensure precise target location. Frequency-agile radios and air-to-air data links could be used for secure and reliable communication. Automated, two-way data transfer could relieve uncertainty regarding correct targeting. A FAC operating from F/A-18B aircraft could control the accuracy of PGM attacks by laser designating the required target. In the future, use of remotely piloted vehicles

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<sup>39</sup> The challenge of developing contemporary CAIRS procedures is not unique to the ADF. Dedicated CAIRS weapons systems have been withdrawn from US inventories. USMC F/A-18 squadrons are developing tactics for 'fast FAC' operations in the former Yugoslavia, and the USAF is to replace role dedicated A-10 CAIRS aircraft with multi-role F-16 aircraft.

<sup>40</sup> Conceivable airborne control techniques highlight limitations of PC-9/A aircraft for training. While characteristics of PC-9/A aircraft reflect FAC platform capabilities of the Vietnam War, this aircraft type is not representative of rotary wing or fast FAC platforms.

(RPVs) could combine the advantages of an elevated perspective with the benefits of close liaison achieved by ground based controllers.

- b. **Ground Controlled Operations.** Efficiency of ground controlled operations could be enhanced by employing hand-held GPS receivers and laser rangefinding devices to determine target location accurately. Infra-red designators could be employed to designate targets precisely. Airborne warning and control (AWACS) aircraft, stationed at higher altitude and clear of the battlefield surface-to-air threats, could be employed to relay communication between ground forces and attacking aircraft. Data links and frequency-agile radios could provide secure data transfer.<sup>41</sup>
- c. **Response and Endurance.** Australian operations for a land campaign to counter credible contingencies will be reliant on air power to cover the vast distances of the possible area of operations. In the absence of infrastructure, fixed wing aircraft could be the only ADF assets capable of timely response. As noted by Brigadier P.L. McGuiness, 'in some cases the most efficient and effective application of force will be to employ CAIRS'.<sup>42</sup> Range and endurance characteristics of F-111 aircraft and air-to-air refuelling for F/A-18 aircraft could allow CAIRS to be integrated into the ground commander's manoeuvre plan even though these aircraft might operate from airfields remote from the area of operations.

## CONCLUSION

In times of peace, some air forces have shown a tendency to emphasise strategic deterrent capabilities of air power at the expense of tactical capabilities. Despite a significant history of supporting ground forces in combat, the RAAF has also displayed this tendency. The first edition of RAAF doctrine, *The Air Power Manual*, published in 1990, acknowledged support of ground forces as a fundamental role but also expressed some clear reservations. Although successive defence policy guidance has endorsed the use of air-delivered firepower in support of the land force, tactical employment of ADF combat aircraft in the CAIRS role has been questioned on the grounds that:

- a. small arms fire, shoulder-launched SAMs, and anti-aircraft artillery create a risk of aircraft attrition disproportionate to the value of the mission;
- b. high speed, low altitude tactics, necessary to survive the traditional mission, limit the accuracy and hence the value of CAIRS; and

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<sup>41</sup> US forces have employed an automatic target hand-off system (ATHS) that allows digital target data to be transferred from a joint surveillance target and attack radar system (JSTARS) aircraft directly to the fighter's on-board fire control computer. Foret, MAJ H.L., *Close Air Support: A Case of Joint Operational Capability or Joint Rhetoric*, Newport: Naval War College, 13 February 1992, p 21.

<sup>42</sup> McGuiness, Brigadier P.L., 'Air Power in the Air/Land Environments', *Smaller But Larger*, edited by Alan Stephens, Canberra: AGPS, 1991, p 195.

- c. scarce multi-role aircraft should not be diverted from more strategic air power roles.

Development of precision air support tactics by the SRG has established a concept of close support for ground forces. These tactics use the PGM capability of the F-111 Pave Tack system and the FLIR/Laser target designation pods of F/A-18 aircraft. Although not conforming to earlier doctrine for conventional CAIRS, the implications of this technology have been reflected in the second edition of *The Air Power Manual*, published in 1994. RAAF doctrine continues to highlight limitations of conventional CAIRS tactics but nevertheless endorses the role in principle with the statement that 'the RAAF should be able to provide air support in most weather conditions, day or night, with minimal risk of aircraft loss'.<sup>43</sup>

Despite doctrine that endorses air support as one of three fundamental air power campaigns and the acquisition of multi-role aircraft capable of providing massive firepower, ADF development of a viable CAIRS capability has been limited. The decision taken to replace Winjeel FAC training aircraft with another slow training type with no operational capability suggests the RAAF is committed to maintaining the status quo. Furthermore, the RAAF's tactics for and attitude towards the CAIRS role are based on experience gained and tactics developed in Vietnam 30 years ago.

The synergy gained through the synchronised application of ground and air power is a lesson consistently drawn from all conflicts since the advent of military aviation. As the provision of effective air power is the RAAF's mission, maintenance of only a limited training capability in conventional CAIRS tactics is inadequate. A concept of operations is required which will integrate smart technology on the battlefield. Techniques that exploit automated transfer of target data, provide attacking aircraft with accurate designation of targets, and ensure safety of friendly forces, must be developed or adapted for the CAIRS mission.

The RAAF has the capability and weapons systems to overcome the limitations of conventional CAIRS in an Australian environment. As the prime provider of air power for Australia's security, the RAAF has a responsibility to develop an operational doctrine for CAIRS that will meet the ground commander's requirements.

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<sup>43</sup> *The Air Power Manual*, Second Edition, p 110.