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AIR POWER DOCTRINE REVISITED

By

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INTRODUCTION

The need to revise AAP 1000 *The Air Power Manual* (2nd Edition) has been evident for some time. Three main factors have been driving that need: politics; significant developments in warfighting concepts and technologies; and the primacy of joint warfare. This paper examines the background to existing RAAF doctrine and the likely consequences of recent significant developments. It then proposes a revised conceptual framework for the AAP 1000.

DOCTRINE

Doctrine is at the heart of military activity. As the central body of beliefs about the conduct of war it provides the guiding force for action, structure, organisation and development. Its influence should be evident to some extent in all practical activities. More than that, however, doctrine represents the highest expression of a defence force's intellectual foundations. The continuing process of considering, endorsing and revising doctrinal beliefs is fundamental to an organisation's intellectual vigour and institutional health. By presenting an orderly and endorsed interpretation of theory and accumulated experience, doctrine should make clear why the organisation is structured the way it is, what its objectives are, and, in broad terms, how those objectives should be achieved. A doctrine which satisfies those criteria should at the same time provide the members of that organisation with a strong sense of identity.

Some might consider that to be a rather idealised definition of doctrine. The fact that something may be idealistic does not, of course, mean that it should not be pursued. On the contrary, it is characteristic of military organisations to strive for excellence regardless of circumstances. While most human endeavours end up in some sort of compromise - we are, after all, a remarkably diverse species - ambitious objectives are more likely to lead to high quality outcomes.

The Politics of Doctrine

Like most human activities, doctrine has a political dimension. The authors of doctrine are more likely to succeed in their task if they understand that dimension. Two aspects of the politics of doctrine are relevant to this paper: terminology and external forces.

The first edition of *The Air Power Manual* was produced in 1990. The publication of the manual was preceded by a survey which concluded that, to the extent that air power education was conducted in the RAAF, it was ad hoc and superficial, and unrelated to career progression, endorsed doctrine (the RAF's AP1300) or common references.[1] Worse, there was no structured air power education system. Further evidence that there were major institutional deficiencies in the Air Force's doctrinal awareness had, in the opinion of some observers, previously been apparent in the

[1] See Stephens, Alan, *Power Plus Attitude: Ideas, Strategy and Doctrine in the Royal Australian Air Force, 1921-1991*, AGPS, Canberra, 1992, p 183; Walker, Squadron Leader James Y., *The RAAF's Fundamental Business: An Evaluation of RAAF Air Power Education*, APSC, Canberra, 1995.

events leading up to the decision taken in 1986 to transfer control of the Australian Defence Force's helicopters from the RAAF to the Army.

Because of that background, there was a perceived need for the first edition of the AAP 1000 to make a political statement. Consequently, forceful terminology which explicitly defined the RAAF's status as a separate service was sometimes used. In the circumstances that approach was justified and probably served a positive purpose. That purpose has, however, now been satisfied.

Two terms used in *The Air Power Manual* have been particularly contentious. One has already been changed; it is now time to amend the other. Regarding the first change, in the original edition of the manual 'independence' was listed as an RAAF maxim. Many members of the Australian Army and Navy interpreted that maxim as meaning that the RAAF would 'go its own way' and was not fully committed to the notion of joint warfare. In order to redress that mistaken perception, the maxim of 'independence' was replaced in the 2nd edition, published in 1994, by 'professional mastery'. The revised term has proven to be more precise, more useful, and entirely acceptable in the joint arena.

The second serious semantic problem has arisen from the RAAF's use of the word 'campaign' to describe its three basic functions of Control of the Air, Air Strike and Air Support. From the outset the other services and a range of military strategists argued that none of those functions satisfied the traditional meaning of 'campaign'. That criticism has been justified. While it is feasible that the Australian Defence Force might and could conduct discrete Control of the Air and Air Strike campaigns, it seems more likely that in most circumstances those actions would be part of a larger joint campaign. The term as used in the AAP 1000 encounters even greater problems when applied to 'Air Support', as the idea of conducting an 'Air Support' campaign is simply illogical.

The retention in the second edition of *The Air Power Manual* of the concept of three air 'campaigns' has continued to create needless irritation with Air Force doctrine. For the same reason that the maxim of 'independence' was replaced by 'professional mastery', the RAAF's so-called air 'campaigns' also should be retitled to accord with accepted terminology and precise meaning. That objective would be met by describing the RAAF's major functions as 'roles'. The nature of the Air Force's (retitled) roles is discussed in more detail below.

Just as 'campaigns' is a misleading description of the RAAF's major functions, so too is the use by both editions of the manual of the term 'roles' to describe the level of air activities conducted below the (retitled) campaigns. It is not clear why the original authors of the AAP 1000 opted for 'roles' instead of the commonly accepted 'missions' to describe those activities. Although not controversial like 'campaign', the use of 'role' to describe an action known in most other air forces as a 'mission' has at best been confusing. Doctrine is a difficult enough subject in itself without needlessly complicating matters. It is invariably best practice to use widely endorsed and clearly understood words. Thus, in order to accord with common usage, air activities which are conducted to enable the RAAF to fulfil its main functions (in this paper now retitled 'roles' instead of 'campaigns') should be known as 'missions'.

External forces over which the RAAF has little control, but which should at least be understood, comprise the second element of the politics of doctrine.

Like the other forms of combat power doctrine (that is, land, sea and joint doctrine), air power doctrine does not develop in isolation, nor is it static. Even if there were no formal process linking its theoretical development and practical application to other elements of national security, plainly doctrine will remain responsive to a range of external influences from the wider civil and military communities which combine to shape the national security outlook and which will affect the translation of theory into practice.

National security policy is the most senior external influence. It may not always be a straightforward matter to identify a national policy, as in all probability it will be contained in a number of major speeches or statements made by different senior officials. Nevertheless, a hierarchy of policy guidance and direction to which any single service doctrine must remain responsive does exist. As far as security policy is concerned, a nation's defence, foreign affairs and economic postures will be the most important. An example of the way in which foreign policy can affect the RAAF is Australia's endorsement of the Nuclear Non-Proliferation Treaty, with its obvious implications for force structuring (platforms, weapons and organisation). A similar but more complex example for the future might be regional attitudes towards the Missile Technology Control Regime.

Economic constraints comprise the second external force. Some defence commentators like to claim that an arms race is currently under way in the Asia-Pacific region, and that much of the money being spent is going on air power capabilities. Those who understand military affairs know that there is a vast difference between the force modernisation which in fact is what is happening and an 'arms race'. Regardless of the term used, it is manifestly clear that financial constraints determine the shape of air forces just as much as does doctrine. *No* air force in the Asia-Pacific region has the full range of capabilities which a theoretically ideal doctrine might suggest is essential. The Royal Australian Air Force, for example, has been one of the region's best equipped, best trained and most experienced air forces for decades, but today remains without such vital capabilities as operational air-to-air refuelling, airborne early warning and control platforms and advanced air-to-ground missiles. The absence of those capabilities has nothing to do with doctrine and everything to do with constrained budgets. Similar observations could be made about the region's most powerful air forces, those of India and China.

A third major external force which can bear on doctrine is the pressure to support local industries.[2] This is usually a two-edged sword, as the RAAF experience again illustrates. Achieving and maintaining a qualitative edge is an imperative of Australian air power doctrine. In terms of hardware, that imperative has been expressed through such leading-edge technologies as the F-111, F/A-18, P-3C and C-130J. Less satisfactory have been the attempts to support the local industry by

[2] For an excellent analysis of the challenges associated with maintaining an indigenous aircraft industry, see Smith, Air Commodore Neil, 'An Industrial Strategy in Support of Fighter Aircraft for Industrially Developing Nations', *Air Power Studies Centre Paper No 41*, APSC, Canberra, February 1996.

designing and producing indigenous aircraft, the disappointing Nomad light transport and the failed Wamira trainer project being notable examples. The fact is, for over 60 years the RAAF has from time to time been disadvantaged by having to accept, under government pressure, locally produced equipment that has been either inferior or, more likely, uncompetitively expensive.[3] The 'imperative' at work here has not been air power doctrine but rather the political reality of local jobs. Current examples of that imperative include India's Light Combat Aircraft, Japan's FS-2 fighter and Taiwan's Ching-Kuo Indigenous Defensive Fighter.

The consequences of having to support indigenous industries need not necessarily, however, be all negative. An invaluable spin-off from local production is the ability to modify combat systems in-country at short notice to meet prevailing circumstances. Few better examples can be found than that of the (British) Royal Air Force during the Falklands War of 1982 when, faced with enormous distances from the home base in the United Kingdom to the battlefield in the South Atlantic, aircraft like the C-130 and Nimrod were modified for air-to-air refuelling within weeks. Similarly, the existence of a sound local aerospace industrial base has enabled the RAAF to modify many of its strike/fighter aircraft to carry an exceptionally wide range of weapons, a valuable capability for a small force.

The fourth and final significant external force that impacts on doctrine, and which is sometimes unspoken but is nevertheless very real, is inter-service rivalry. Air power entered the combat arena explicitly subordinated to armies and navies. Notwithstanding clear evidence from the First World War of the importance of control of the air and of the potential of strategic strike, that dependent relationship persisted for decades. Most if not all of the world's air forces started life as the junior partner. Despite stunning demonstrations of the impact of air power on the battlefield - consider, for example, Normandy in 1944, the USAF and the RAAF along the Pusan Perimeter in 1950, Linebacker II in December 1972, the Coalition in the Gulf in 1991, and NATO in Bosnia in August/September 1995 - many surface commanders still seem unwilling to acknowledge the equal place in the military family of Douhet's 'Third Brother'.[4]

It is a considerable irony that, while insisting on the ultimate 'superiority' of surface forces in general and armies in particular, those same commanders are, according to one strategic analyst, currently spending some 60 per cent of their budgets on air power-related systems such as fixed- and rotary-wing 'ground support' aircraft, unmanned aerial vehicles, cruise and ballistic missiles and aerial surveillance and navigation platforms.[5] The issue is and will remain a difficult one for airmen. To illustrate the dimensions of the problem by reference to Australian doctrinal principles, RAAF airmen maintain that their nation's air power should be both unified and commanded at the highest practical level by a single, experienced commander with expertise in the application of air power.[6] In fact, the Australian Army and Navy

[3] See also Stephens, Alan, *Going Solo: The Royal Australian Air Force, 1946-1971*, AGPS Press, Canberra, 1995, pp 186-194.
[4] Writing in 1909, Giulio Douhet claimed that it was time for 'the army and navy [to] recognise in the air force the birth of a third brother - younger but nonetheless important in the great military family'.
[5] Colonel Phillip S. Meilinger, quoted in Harvey, Group Captain John, 'Maritime Air Operations', Presentation to the RAN Sea Power Conference, Sydney, 1995.
[6] RAAF, *The Air Power Manual* (2nd ed), APSC, Canberra, 1994, p 44.

each maintains a substantial (and growing) air arm, with the Army likely to operate more aircraft than the Air Force inside the next decade. The United States Army already has more aircraft than the world's most powerful air force, the USAF.[7]

The general point to draw from the politics of doctrine is that while some sort of gap between theory and practice is inevitable, there is a limit beyond which credibility will be placed at risk. The nature of modern warfare seems certain to sharpen the doctrinal challenge this poses for airmen. Specifically, as defence forces increasingly focus on operations at the lower end of the combat spectrum (those resulting from internal disorder, terrorism, drug trafficking, resource disputes, organised crime, illegal immigration and so on), force structure decisions - that is, who gets what - are likely to favour helicopters and light attack aircraft over 'traditional' air power systems like air superiority fighters and strategic bombers.

WARFIGHTING CONCEPTS AND TECHNOLOGIES

Perhaps the most important current issue in the defence debate is the question of whether or not we are experiencing a 'Revolution in Military Affairs'. Regardless of individual opinions, there should be no doubt that dramatic improvements in information systems, surveillance and reconnaissance sensors, long-range precision weapons and the military exploitation of space are fundamentally affecting concepts of warfighting. In particular, and again regardless of individual conclusions, no defence analyst can afford to ignore the implications of the aerospace capabilities demonstrated during the 1991 Gulf War.

That is not to say that air power alone holds the key to future combat success. On the contrary, the Gulf conflict demonstrated the overwhelming advantage generally enjoyed by a well-balanced, coordinated joint force. The RAAF must therefore be regarded first and foremost as the specialist air arm of such a force, an imperative which in turn requires Air Force doctrine both to reflect those recent technological and warfighting developments and to sit comfortably with ADF joint doctrine.

The Determinants of Doctrine

Before presenting a revised doctrinal model which accommodates the kinds of influences and developments outlined above, an examination of some of the constants which underpin doctrine may be useful.

The inherent characteristics of air power are implicit in the definition used in the AAP 1000, which describes air power as 'the ability to project military force by or from a platform in the third dimension above the surface of the earth'.[8] It is important to note that an air force uses the air not merely as a medium for transit, as does a missile or bullet, but also for manoeuvre, deployment, concealment and surprise. The effectiveness with which military force can be projected from the third dimension is

[7] The Australian Army currently has 192 aircraft compared to the RAAF's 284, but while the RAAF's fleet is reducing the Army's helicopter numbers are growing. The US Army operates 7,761 aircraft (mostly helicopters) against the USAF's 7,126: *Aviation Week and Space Technology*, January 8, 1996, pp 179, 193.

[8] *The Air Power Manual, Second Edition*, p 31.

derived directly from the unique characteristics of the aeroplane. Minor disagreements might arise over terminology, but there would be general agreement that those characteristics can be summarised as flexibility, mobility, reach, speed, perspective, versatility, pervasiveness, shock effect, responsiveness, the ability to concentrate force rapidly, and high military effect (that is, the high ratio of combat power applied to the numbers of combatants involved).

It is noteworthy that, notwithstanding remarkable advances in aerodynamics, propulsion plants, guidance systems, electronics, weapons and information systems, those inherent characteristics have remained constant since heavier-than-air machines were first used in combat by Italian airmen against Turkish troops in Libya in 1911. In other words, regardless of technological change, the *nature* of the business has remained the same.

THE CLASSICAL THEORISTS

While the inherent characteristics of air power are clear enough and are generally accepted, the same cannot always be said for expositions of doctrine. At the start of this paper doctrine was defined as an 'orderly and endorsed interpretation of theory and accumulated experience'; that is, doctrine is not simply theory or practice but a combination of theory *and* practice. The distinction is important. The RAAF, for example, was a highly successful organisation in operations (practice),[9] but took 70 years to produce a confident, independent exposition on the use of Australian air power (theory). There is little doubt that on occasions the absence of a rigorous theoretical foundation has harmed the RAAF institutionally.[10]

Airmen have not been well served by their theorists. Many of the difficulties which have affected the development of air power have originated at least in part from the unrealised expectations raised by its early advocates. In particular, the three so-called 'classical' theorists - the Italian Douhet, the American Mitchell and the Englishman Trenchard - tended to be visionaries rather than rigorous analysts. The common thread in their theories was the belief that strategic bombing would make all other forms of warfare obsolete, a conclusion which not surprisingly irritated the commanders of armies and navies.

There are still valuable doctrinal lessons to be learnt today from the experiences of those original air power theorists.

Giulio Douhet's classic *The Command of the Air* was published in 1921.[11] Douhet had, however, first presented the ideas contained in that book more than ten years previously, testimony to his remarkable foresight. Like many of his successors, Douhet was met with scepticism and resistance from less imaginative naval and military contemporaries. In order to accomplish anything 'practical and useful for [his] country', the Italian airman had to be careful 'not to oppose too strongly certain

[9] The RAAF has fought successfully at the tactical level of war in World War I (as the Australian Flying Corps), World War II, Korea, Malaya, Vietnam, and a host of smaller operations.
[10] For more on that judgment, see Stephens, *Power Plus Attitude*, passim; and *Going Solo*, pp 29-49.
[11] Douhet, Giulio, *The Command of the Air* (trans. D. Ferrari), Office of Air Force History, Washington, 1983.

notions held in high places'. He was aware that his ideas, which challenged existing precepts of warfare, might seem 'daring, perhaps strange', but he held to the courage of his convictions.

Douhet's central thesis was presented in his book under the portentous heading, 'The Extreme Consequences'. His position was unequivocal: 'To conquer command of the air means victory; to be beaten in the air means defeat and acceptance of whatever terms the enemy may be pleased to impose'. In Douhet's opinion that was not an assertion but an axiom. From that axiom came two corollaries:

a. In order to assure an adequate national defence it is necessary - and sufficient - to be in a position in case of war to conquer the command of the air, [and]

b. All that a nation does to assure her own defence should have as its aim procuring for herself those means which, in case of war, are most effective for the conquest of the command of the air.[12]

Douhet accordingly concluded that the air force was destined to become the dominant arm of the military, to the extent that it should gradually be strengthened at the expense of the other two services. Air power had introduced a 'new character to war', which emphasised the 'advantages of the offensive' and would make for 'swift, crushing decisions on the battlefield'.

General Douhet took his argument even further in his definition of the 'battlefield'. Because of the aircraft's range, speed, relative invulnerability and unparalleled striking power, and its predicted ability to create fear and panic among an enemy's population, it was logical, he stated, for aerial bombardment to be directed primarily at population centres and the national infrastructure. The destruction of 'governing bodies, banks and other public services in a day' would plunge an enemy into 'terror and confusion'. Superiority over an enemy's air force would be gained, not by combat in the skies but by destroying it on the ground, that is, by again employing the innate and decisive offensive capabilities of air power.

Douhet accompanied his thesis on aerial bombardment with considerable comment on other aspects of warfare, including organisation, the moral aspects and material preparation. That he overstated his case and by so doing possibly harmed the credibility of the air weapon has already been mentioned, but that should not be allowed to diminish his status as a pre-eminent military thinker.

One historian has suggested that if Douhet wrote for the professional military audience, General William 'Billy' Mitchell addressed his convictions on air power primarily to the public.[13] Unlike the more scholarly Italian, Mitchell was passionate and outspoken in his beliefs, particularly regarding the independence of air forces. Notwithstanding the difference in temperament, he shared with Douhet an over-riding faith in the inevitable dominance of air power through aerial bombardment. Key

[12] *ibid*., p 28.
[13] Warner, Edward M., 'Douhet, Mitchell, Seversky: Theories of Air Warfare', in Earle, Edward Meade (ed), *Makers of Modern Strategy*, Princeton University Press, Princeton, 1943; see also MacIsaac, David, 'Voices From the Central Blue: The Air Power Theorists', in Paret, Peter (ed), *Makers of Modern Strategy*, Princeton University Press, Princeton, 1986.

factors in that belief were Mitchell's perception of the continually increasing technical superiority of the aircraft over other machines of war, and the fragility of civilian morale. In an episode of the greatest importance in the history of combat, aircraft from Mitchell's Army Air Service provided a dramatic demonstration of his theories by sinking the captured German battleship *Ostfriesland* with 2,000 pound bombs during trials in July 1921.[14]

Mitchell had been a combat pilot in World War I but his projections for the future uses of air power were, like those of Douhet, excessively speculative. He thus overestimated the extent to which the aircraft would achieve technical dominance and underestimated the capacity of the civilian population and industry to withstand the effects of strategic bombing. It is noteworthy that, like Douhet, Mitchell was court-martialled for criticising prevailing land- and sea-oriented national defence strategies.

Hugh Trenchard's contribution to the development of air power is difficult to overstate. As commander of the Royal Flying Corps on the Western Front, director of the Independent Force's bombing campaign against Germany during World War I, and champion of the Royal Air Force between the wars, Trenchard played a dominant role in the development of air forces during the first half of the 20th century. In contrast to his early years as a regimental officer when he showed no special intellectual ability, he became an important and original thinker on the employment of air forces. Two of his concepts deserve special mention.

The first formalised two enduring maxims of air power. In his classic instruction to the RFC of September 1916 entitled 'Future Policy in the Air', Trenchard established the fundamental importance of air superiority and offensive action. His second major concept was that of 'substituting' air power for land and sea power, a practice the RAF employed successfully in small wars during the 1920s and 1930s. The concept of substitution remains a topical but controversial contribution to air power doctrine. But for all his practical experience, Trenchard was subject to the same criticism as the other theorists. According to Winston Churchill, Trenchard 'too often spoiled a good case by overstating it'.[15]

It is ironic that those three great airmen had the vision to foresee the eventual dominance of the air weapon and the courage to fight for its acceptance but, at the same time, by overstating the aeroplane's capabilities, provided their opponents with the means to refute them. During the early years of World War II, for example, the apparent failure of strategic bombing to meet its supporters' claims damaged the credibility of air power.[16] Similar alleged failures have been the source of more criticism during the conflicts in Korea in the early 1950s, Vietnam in the 1960s and 1970s, and even the Persian Gulf in 1991. The implications for the authors of air power doctrine should not be ignored.

[14] Mitchell, William, *Winged Defense*, Kennikat Press, New York, 1971, pp 66-73; and Hurley, Alfred F., *Billy Mitchell: Crusader for Air Power*, Franklin Watts, New York, 1964, pp 64-70.
[15] Quoted in Boyle, Andrew, *Trenchard*, Collins, London, 1962, pp 724-745.
[16] That criticism is misplaced. It is clear that from 1944 onwards the bombing had a devastating effect on the German war economy and population. See Richard Overy, who in *Why the Allies Won*, Jonathan Cape, London, 1995, p 133, concludes that 'For all the arguments over the morality or operational effectiveness of the bombing campaigns, the air offensive was one of the decisive elements in the Allied victory'.

THEORY AND PRACTICE IN CONTEMPORARY DOCTRINE

Clausewitz's famous observation that war is characterised by 'fog' and 'friction' could equally be applied to many attempts to categorise and separate thought and action in doctrinal studies.[17] As there almost invariably will be a degree of overlap, definitional problems often arise. For example, the inherent characteristics of air power have in the past sometimes been presented as doctrine, but as the noted British air power commentator Air Commodore A.G.B. Vallance has correctly pointed out, those characteristics should be regarded as *determinants* of doctrine, not tenets.[18] Similarly, it is not difficult to confuse a 'role' or a 'strategy' with a doctrinal principle.

Because the word 'doctrine' can mean different things to different people, some discussion of contemporary USAF, RAF and RAAF interpretations of the subject may be helpful. It is not the intention of this discussion to make comparisons between current opinions and those of the past: that would be unreasonable given that this is a study of an evolutionary process. Rather, the intention is to provide a reference to which ideas and events can be related.

USAF doctrine addresses 'aerospace' power rather than simply 'air' power, a necessary response to the United States' military space capabilities. The need to include space does not however affect fundamental principles. The USAF expresses its doctrine at three distinct levels, which correspond to the generally accepted levels of warfare: the basic (or strategic), operational and tactical. Basic doctrine presents 'what we hold true about aerospace power and the best way to do the job in the Air Force'.[19] It constitutes the highest statement of beliefs in the USAF as it is the foundation of all aerospace doctrine. Operational doctrine applies the principles of basic doctrine to military actions, most importantly in relation to providing detailed mission descriptions and methods for preparing and employing aerospace forces. A campaign plan could be regarded as operational level doctrine. Finally, tactical doctrine describes the proper use of specific actions and systems to accomplish detailed objectives. It is the 'working level' statement and is distinguished from the basic (strategic) level in particular through its emphasis on action rather than theory. Squadron standard operating procedures might constitute tactical level doctrine. Notwithstanding the different emphases on theory and action, the principles of basic doctrine should be evident throughout the operational and tactical levels.

USAF basic doctrine argues that aerospace power is characterised by seven tenets which are 'important guidelines and considerations for commanders in addition to the principles of war'. Those tenets 'describe *how* aerospace power can be used to achieve military objectives', as follows: centralised control/decentralised execution; flexibility/versatility; priority; synergy; balance; concentration; and persistence.[20]

[17] Clausewitz, Carl von, *On War*, Penguin, Harmondsworth, 1982, pp 164-167.
[18] Vallance, A.G.B., The Evolution of Air Power Doctrine within the RAF (Unpublished MPhil Thesis), Cambridge, 1988.
[19] Department of the Air Force, *Basic Aerospace Doctrine of the United States Air Force*, AFM 1-1, Washington, March 1992, p vii.
[20] *Basic Aerospace Doctrine of the United States Air Force*, p 8.

Doctrine is defined by the RAF as 'an accumulation of knowledge which is gained primarily from the study and analysis of experience'.[21] In essence, doctrine informs airmen of 'what works best'. Its purpose is to advise and guide; that is, it is not dogma and its application is not mandatory. Like the USAF, the RAF recognises three levels of doctrine, the strategic, operational and tactical. Unlike the USAF and the RAAF, the RAF does not list air power 'maxims' or 'tenets'. However, ten factors which are 'important' to the successful application of air power have been identified, as follows: prepare in peacetime; exercise effective command and control; retain flexibility and balance; sustain effects; minimise attrition; employ air power in mass; exploit capabilities; establish the priorities; devise the air strategy; and identify centres of gravity.[22] Those factors are not presented in the RAF's manual as a hierarchical list, but rather as a circular, mutually supportive process.

RAAF strategists define doctrine as the 'fundamental philosophy concerning the employment of a defence force', as 'the central body of beliefs which guides the application of combat power'.[23] Derived from the synergy of fundamental principles and innovative ideas, RAAF doctrine is considered authoritative but requires judgment in its application. Four maxims of air power which apply equally across the three levels of warfare have been identified. Those maxims emerge from the RAAF's definition of the objective of air power, which is to gain maximum military effectiveness from the use of the air. That objective can be best obtained in combat by conducting several campaigns simultaneously, using a unified and balanced force which possesses professional mastery.[24] Thus, the RAAF's four doctrinal maxims are: the ability to conduct concurrent campaigns, unity, balance and professional mastery. In combination those maxims form the basis for the application of air power. According to the RAAF, if those maxims are not observed, military effectiveness will decrease.

Taking the three sets of doctrine collectively, some useful observations can be made. First, the word 'doctrine' is used to describe information ranging from broad, ostensibly universal tenets - which could be called 'high level' doctrine - to almost any operational activity taught in a military organisation. Second, the three sets of doctrine are similar. While there are obvious differences between the RAAF, the USAF and the RAF, primarily in size and the nuclear weapons capability of the Americans, clear parallels exist in current Australian, American and British thinking. Finally, the expression of doctrine may take a very practical form. The USAF tenets and the RAF factors seem to be as much a check-list for commanders as they are sets of universal air power principles. Given the confusion which often attends attempts to define military doctrine as a science, that appears to be a sensible approach. Furthermore, it is an approach which recognises the ineluctable connection between doctrine, strategy and roles, and force structure. That connection has its own dynamic, which in turn may generate valuable doctrinal concepts which have broad but not necessarily universal applicability.

The point here is not to show that existing doctrines may or may not be valid, but rather to illustrate the nature of the relationship between theory and practice in air

[21] Royal Air Force, *Air Power Doctrine*, AP 3000, Second Edition, 1993, p 7.
[22] *Air Power Doctrine*, p 107.
[23] *The Air Power Manual*, p 27.
[24] *ibid*., pp 43-47.

power doctrine. Good doctrine will be a balance of ideas and action, in which influence can flow both ways. As Clausewitz wrote in *On War*: 'The nearer theory attains the latter [a thorough familiarity with military activities], so much the more it passes over from the objective form of knowledge into the subjective one of skill in action'.[25]

A REVISED DOCTRINAL MODEL

Thus far this paper has argued that good doctrine is a combination of theory and accumulated experience which not only provides guidance for action, force structure and organisation, but also is the highest expression of military thought, concerned with the history of a service's ideas, with Clausewitz's 'war of opinions'. The task at this stage is to translate those ideas into a tangible and useable form.

Doctrine must do more than merely record what has happened in the past - it must reflect a realistic vision of the future in order to guide force acquisition, organisation and training.

The combination of theory and practical experience which comprises doctrine suggests that there are five main roles for the application of air power. The first four are directly concerned with warfighting activities, while the fifth provides the essential support base upon which air power rests. Those roles are:

a. Theatre Control

b. Strategic Strike

c. Force Application

d. Force Multiplication

e. Force Support

Each of those *roles* will be implemented by conducting one or more of a number of air power *missions*.

Theatre Control

Since World War I many air forces have listed the ability to 'control the air' - that is, to secure the freedom to conduct air operations while denying the enemy that capability - as the 'prime' air activity. But as the Coalition air forces demonstrated through their stunning dominance of the entire battlespace during the Gulf War, that definition has become too restrictive. Limiting the 'control' function of air forces to only one element of the combat environment - the air - is inconsistent with the capabilities of modern air power and is therefore doctrinally incomplete. Any description of the RAAF's 'control' role should encompass the full extent of what is

[25] Clausewitz, *On War*, p 191.

possible, not merely part of what is possible. The fact is, in the right circumstances, for more than half a century, air forces have been (and are) just as capable of controlling the land and the sea as they are of controlling the air. That vital capability perhaps tends to be overlooked because of the emphasis doctrine has placed on air control.

Consequently, a much broader description of that role than simply 'control of the air' is necessary. The term 'theatre control' most accurately describes Australian air power's 'control' capability over the modern battlefield. The use of 'theatre' instead of, say, 'battlespace' (a term which implies almost infinite size, and which incorporates space) recognises the constraints of size on the extent of likely ADF operations: the USAF is the only air force which could realistically expect to establish 'battlespace' control.

'Theatre control' is a wide-ranging role comprised of three subsets:

a. Air Control,

b. Surface Control (incorporating sub-surface control), and

c. Information Control.

Depending on circumstances and the Commander Australian Theatre's (COMAUST) overall campaign plan, those three subsets of theatre control could be prosecuted separately, in parallel, or even ignored. However, experience has shown that control of the surface is unlikely to be achieved without first gaining control of the air. The timing of information control missions is less certain at this early stage of the phenomenon of 'information warfare', but it may well prove to be the case in future that the need to establish some degree of information control will precede the other control roles.

Air Control

In most circumstances air control will remain the RAAF's prime task. One or a number of missions can be conducted to achieve air control: offensive counter air; defensive counter air; suppression of enemy air defences; and so on. It is probable that surface forces will contribute to the air control role through special force missions (to sabotage enemy air defences etc), radar picket ships and the like. At the least, the involvement of surface forces will be essential for such enabling roles as air base defence and logistic support.

Surface Control

The failure of the present edition of the AAP 1000 explicitly to specify as a major role the RAAF's ability in certain circumstances to control enemy surface (and sub-surface) actions is a serious omission which could adversely affect the development of ADF concepts of operations and campaign planning. In particular, the omission means that the possible dominance of air forces in joint operations is not acknowledged. Yet instances where air forces have dominated the movement of surface and sub-surface forces abound: Bosnia in September 1995, the 1991 Gulf War, the Falklands in 1982,

and the Battle of the Atlantic after 1944 are only a few. At a time when joint operations increasingly are being recognised as the preferred method of conducting conflict, it is incumbent upon airmen to remind their army and navy colleagues of the full range of possibilities their service brings to the planning process.

Information Control

Acknowledging the importance of information to warfare is scarcely original. What is new, however, is the ability of many military forces rapidly to gather, process, analyse and exploit information, to the extent that 'information dominance' must now be regarded as a distinct and crucial military activity; as a potent weapon and a lucrative target. The driver for this phenomenon has been the extraordinary advances made in the last twenty years in the technical means of collecting, storing, transmitting and analysing information.

By itself, that technical revolution might be worthless - it is only when the capability is reflected in doctrine that it acquires military significance. Information warfare has three objectives: to attack, exploit and defend information. Currently the priority for technologically developed states must be on defence. The world's sole remaining military superpower, the United States, is vastly more vulnerable to attacks on its information systems than are Third World states, for whom information attacks may be of little consequence.

Some strategists believe that air forces should seek to acquire the required degree of information control before they attempt to establish air control; that is, that information control should be an air force's prime role. But like any RAAF role or mission, the priority accorded to information warfare will be dependent on the enemy's capabilities and COMAUST's campaign plan. At this early stage there is no one correct answer to the question of 'control' priorities. It is doctrinally more correct and operationally more logical simply to group the RAAF's three control roles, leaving COMAUST the option of placing his effort and (probably limited) resources where he chooses.

Military leaders in the United States currently are giving considerable emphasis to the development of information warfare capabilities. The whole subject is, however, in its very early days. The RAAF consequently has a rare opportunity to assume a leading doctrinal role, thereby adding significantly both to our conceptual framework for combat and our value as a defence partner.

Before concluding this section on the RAAF's 'control' roles, brief mention should be made of the exploitation of space. Like every other aspect of the ADF's force structure, the exploitation of space will be dependent on resources. During the next ten to fifteen years it is unlikely that the ADF will acquire space capabilities other than those associated with communications, navigation and surveillance.[26] Whatever space capabilities are required, doctrinally they should fit within this model.

[26] See *Defending Australia*, Defence White Paper 1994, AGPS, Canberra, 1994.

Strategic Strike

The present edition of *The Air Power Manual* lists 'Air Strike' as the second of the RAAF's three roles ('campaigns' in the manual). Like 'control of the air', the term suffers from definitional limitations. Do we mean a strike in close support of ground forces, or against shipping, or infrastructure, or battlefield interdiction?

The single quality which above all others has distinguished air forces since World War I has been air power's ability to strike directly against an enemy's sources of power, be they leadership, oil, electricity or whatever - that is, to conduct strategic strikes. Notwithstanding the advent of surface- and sub-surface launched cruise and ballistic missiles, long-range aircraft equipped with precision missiles remain the pre-eminent expression of strategic strike. If RAAF doctrine is to be properly understood outside the Air Force, then air power's special capacity to conduct strategic strikes needs to be explicitly recognised. Adopting the role of 'strategic strike' in place of 'air strike' is an important step towards that end.

Force Application, Force Multiplication and Force Support

The existing third and final AAP 1000 'role' descriptor of 'Air Support' has never been satisfactory, on at least three counts. First, in the context of a campaign/role, the term is meaningless. How does the ADF conduct an 'air support' campaign? The answer is, there can be no such thing. Second, by limiting the role to *air* support, we are implying that the function is a one-way affair, in which the Air Force supports the Army and/or Navy. That need not be the case. By replacing 'Air Support' with 'Force Support' we establish wider implications for the role, thus expanding possibilities for the ADF, something which a small organisation cannot afford to ignore. ADF planners need to understand that in many circumstances air will be the pre-eminent combat force and land and sea will be the supporting or enabling forces. Thus, the description 'force support' has more helpful joint connotations. Finally, some of the missions which the AAP 1000 associates with air support clearly amount to far more than 'support'; for example, anti-surface force strikes, air-to-air refuelling, electronic warfare and so on.

Accordingly, 'air support' should be broken down into three semantically accurate and doctrinally meaningful roles, Force Application, Force Multiplication and Force Support.

Force Application. Force Application deals with the application of combat air power for purposes other than the theatre control and strategic strike roles. Missions which force application might incorporate include battlefield interdiction, close air support, anti-shipping strikes, anti-submarine warfare and reconnaissance.

Force Multiplication. The RAF's first chief of staff, Sir Hugh Trenchard, may not have been familiar with the term 'force multiplication' but he understood its meaning: 'to expand the effectiveness of man and machine without increasing the numbers of

either; in that way lies economy'.[27] Force multiplication can be achieved through the exploitation of such air power capabilities as air-to-air refuelling, superior command and control systems, multi-role aircraft, electronic support measures and better personnel practices.

Force Support. Force Support is the essential base upon which all other air roles depend, and is concerned with activities like logistics, recruiting, training, research and development and air base defence. No matter how good the aircrew, the aircraft and the weapons systems, it is unlikely an air force without a high quality support organisation will succeed. As is the case with other air roles, there is no reason why land and sea forces should not be employed to conduct this action.

The Doctrine Process

Developing a doctrinal model like the one outlined above is only part of the task. That model must then be turned into words and diagrams and put down on paper. A number of important observations should be made regarding the writing of doctrine. First, authors of air power doctrine should not become too concerned over the detail of which air mission might be used to conduct which air role. Clearly, while some missions almost invariably will be confined to one role - for example, the defensive counter-air mission to the air control role - others might be used for any one of the four combat roles. Flexibility is, after all, one of the key characteristics of air power. A good example is provided by the airlift mission, which feasibly could be placed under any one of the theatre control, force application or force multiplication roles, depending on the nature of the particular mission. The objective of doctrine authors should be simply to construct a framework or model which explains the full range of capabilities of air power in a logical and workable fashion and which avoids doctrinal inconsistencies. Figure 1, 'Elements of Air Power', is an example of one such model. A central consideration in constructing that model was the need to retain conceptual flexibility. Note that command and control (C^2) overlays the model as the 'glue' which holds the elements together.

Second, the five air power roles represent an idealised model of doctrine. In other words, a fully developed, powerful air force should be capable of conducting all five roles. In truth, that is rarely the case, as for many air forces, political or economic constraints will prevent the development of the full range of roles. Few air forces, for example, have the capacity to conduct strategic strikes: the role may be considered unnecessary, or politically undesirable, or the essential intelligence and weapons systems may be too expensive. The absence from a particular air force's order of battle of the capability to conduct one or more of the roles does not, however, invalidate the doctrinal relevance of that role, it simply means that, for certain reasons, the decision has been made to do without it.

[27] Trenchard, Sir Hugh, quoted in Mason, Air Vice-Marshal R.A., 'Current Air Power Developments', in Ball, Desmond (ed), *Air Power: Global Developments and Australian Perspectives*, Pergamon-Brassey's, Rushcutters Bay, 1988, p 62.

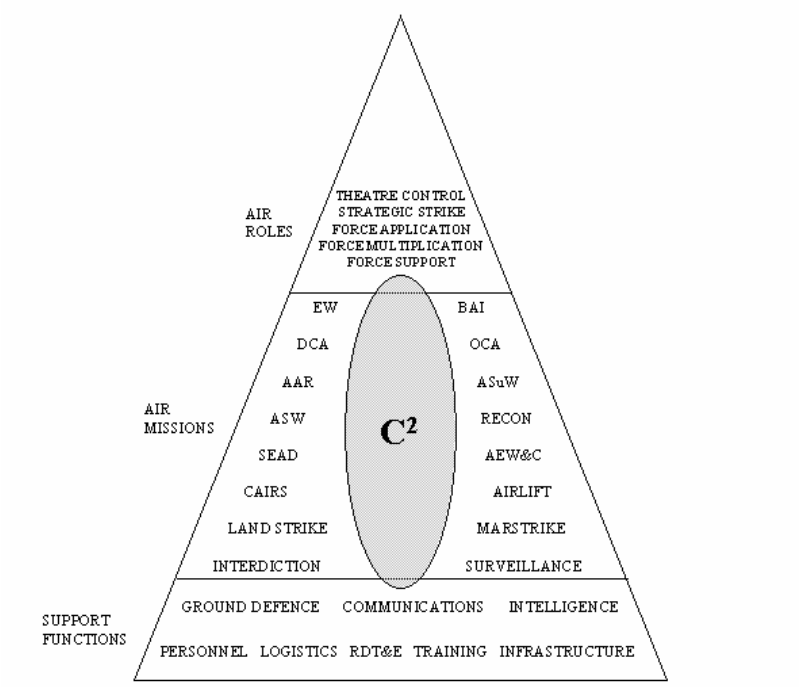

Figure 1 - Elements of Air Power

It can also be the case that in some circumstances a commander will achieve the air power outcome he desires by default; that is, without ever having to prosecute one or more of the air power roles. A good example is provided by the Second Indochina War, where United States forces enjoyed air supremacy over South Vietnam without having to conduct a control of the air campaign. The fact that the Americans did not have to fight for air supremacy did not invalidate the doctrinal relevance of the air control role: the point was, since the Vietminh were unable to contest the Americans' air supremacy, United States forces were able to exploit the air to their own advantage. The adage that everyone's strategy affects everyone else's holds true.

Third, and most importantly, it must be reiterated that there is a political dimension to doctrine. Inter-service relations and eduction are the two key issues here. Because joint operations are now the preferred way of conducting military activities, it is essential for single service doctrine to accommodate the sensitivities of the other services. In the past some airmen have harmed their cause by ignoring the legitimate needs and the perceptions of soldiers and sailors. Good air power doctrine must be responsive to land, sea and joint doctrine, and must avoid the use of terminology which may be either misinterpreted by or provocative to the other services.

As far as education is concerned, doctrine has a crucial role to play. Too often airmen have ignored ideas and doctrine, preferring to regard flying as an end in itself. Consequently, they have not always understood the fundamental nature of their business, which is not merely to fly aeroplanes but *to apply air power in support of national interests.* Education is the key to reversing that narrow outlook. It is one of the prime responsibilities of an air force to inculcate its basic beliefs - its doctrine - throughout all levels of the service. Accepting that the subject can be rather dry, educational material must be presented attractively and accessibly, and be pitched at the appropriate level for the full range of ranks.

Finally, once doctrine has been written, a system should be formalised to ensure that it is continually applied, evaluated and rewritten if necessary; and that the educational process is working. Figure 2 presents a typical 'doctrine process' developed by Professor Dennis M. Drew from the USAF's School of Advanced Air Power Studies.[28]

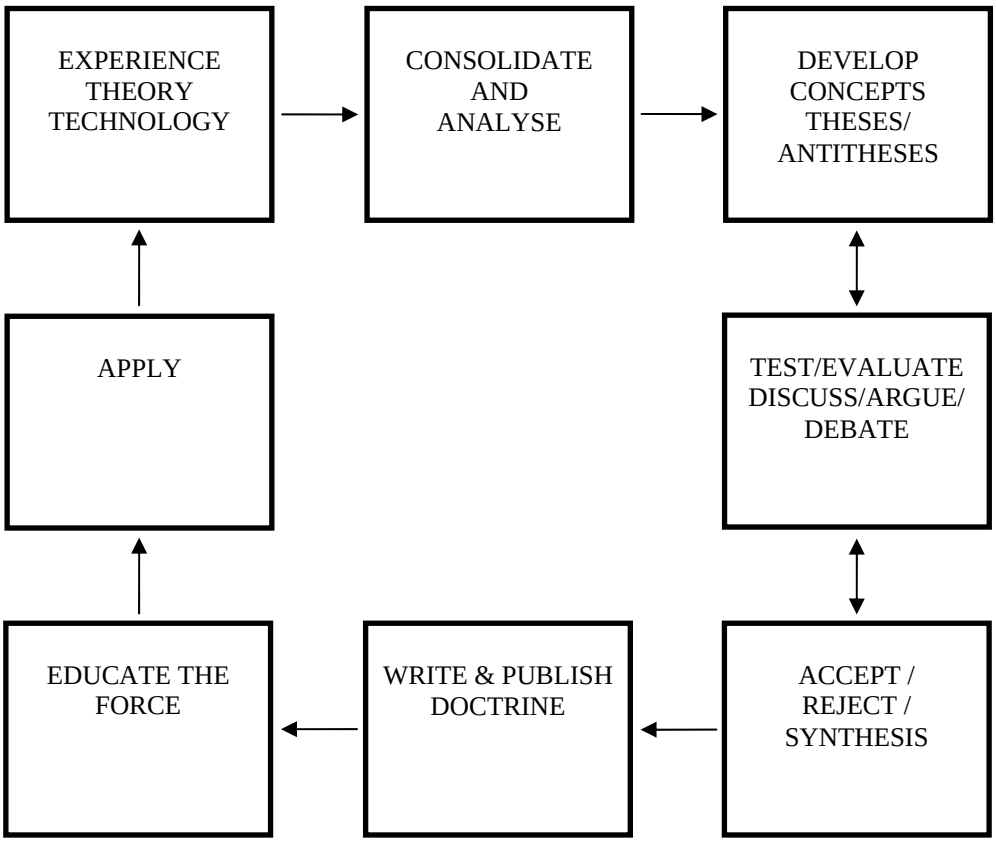

Figure 2 - The Doctrine Process

CONCLUSION

Doctrine by itself will never win a war or make an organisation successful. But unless airmen and airwomen fully understand the fundamental nature of their profession, and unless they are able confidently to articulate to as wide an audience as possible what they believe in, what their service stands for and what their unique form of combat power can deliver, then they run the risk of failing not only themselves and their air force but also their obligation to national security. A logical, forceful doctrinal statement is the essential first step in meeting that solemn professional responsibility.

Certain key elements of the AAP 1000, *The Air Power Manual* (2nd Edition) have been superseded by changes in warfighting concepts, developing technologies and joint doctrine. Further, there are aspects of the manual which have become needlessly provocative in the joint arena, and which are doctrinally questionable in any case. The

[28] Drew, Dennis M., 'Inventing a Doctrine Process', in *Airpower Journal*, Winter 1995, p 44.

revised doctrinal framework presented in this paper provide solutions to those problems.