

POWER PLUS ATTITUDE

*IDEAS, STRATEGY AND DOCTRINE
IN THE ROYAL AUSTRALIAN AIR FORCE
1921-1991*

ALAN STEPHENS

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PREFACE

To quote Sir Walter Raleigh from *The War in the Air*, some apology may be necessary for the variety which 'has been found inevitable in naming particular men'. Most of the individuals mentioned in this book were successful in their careers, which for the military man especially meant many changes of title. Ranks used are those held at the time of the event being described. I am confident readers will have few problems following the changes.

I am grateful to the many people who made generous contributions of their support, knowledge and time to help me with this project.

The assistance provided by the RAAF was invaluable. In particular, the decision by the Chief of the Air Staff, Air Marshal R.G. Funnell, to support my research facilitated both the mechanics of the job and access to official records. Group Captain Nick Ford's initial recommendation that the RAAF support the project by making me a member of the Air Power Studies Centre was greatly appreciated.

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My final thanks for encouragement and support must go to my wife Lyn, who in the last four years has learnt more about air power than she ever wanted to know.

DISCLAIMER

The judgments and conclusions expressed in this book are those of the author alone, and do not necessarily express the views of the RAAF.

A.S.

March 1992

ABBREVIATIONS

AA	Australian Archives (Canberra)
AAF	Allied Air Force
AAP	Australian Air Publication
AAR	Air-to-air Refuelling
AAVIC	Australian Archives (Victoria)
ACA	Australian Council for Aeronautics
ADF	Australian Defence Force
ADSC	Australian Defence Studies Centre (Canberra)
AEW&C	Airborne Early Warning and Control (aircraft)
AFC	Australian Flying Corps
AFR	Air Force Regulation
AGPS	Australian Government Publishing Service
AHSB	Archives and Historical Studies Branch, Department of Defence (Canberra)
AIF	Australian Imperial Force
AJCP	Australian Joint Copying Project
AMF	Australian Military Force
ANU	Australian National University
ANZAM	Australia-New Zealand-Malaya (Agreement)
ANZUK	Australia-New Zealand-United Kingdom (Force)
ANZUS	Australia-New Zealand-United States (Treaty)
AOC	Air Officer Commanding
AOP	Air Observation Post
AP	Air Publication
APSC	Air Power Studies Centre (RAAF)
ARA	Australian Regular Army
ASD	Air Staff Directive
ATF	Australian Task Force
AWM	Australian War Memorial
BCAIR	British Commonwealth Air Force
BCOF	British Commonwealth Occupation Force
CAC	Commonwealth Aircraft Corporation
CAF	Citizen Air Force
CAS	Chief of the Air Staff
CASAC	Chief of the Air Staff Advisory Committee
CDF	Chief of the Defence Force
CDFS	Chief of the Defence Force Staff
CENTO	Central Treaty Organisation
CEP	Circular Error Probable
CGS	Chief of the General Staff
C-in-C	Commander-in-Chief
CNS	Chief of Naval Staff
CPD	Commonwealth Parliamentary Debates (Hansard)
CRS	Commonwealth Record Series

CT	Communist Terrorist
DAFP	Directorate of Air Force Plans
DCAS	Deputy Chief of the Air Staff
DGAPP	Director-General Air Force Plans and Policy
DGAWPP	Director-General Air Warfare Plans and Policy
DGOR	Director-General Operational Requirements
EATS	Empire Air Training Scheme
EFAMO	<i>The Environment of Future Australian Military Operations</i>
EW	Electronic Warfare
FEAF	Far East Air Force
FPDA	Five Power Defence Arrangement
FTS	Flying Training School
GAF	Government Aircraft Factories
GD	General Duties (Branch)
GHQ	General Headquarters
GP	General Purpose
HE	High Explosive
hp	Horsepower
HRC	Historical Research Centre (Maxwell Air Force Base, Alabama)
HQ	Headquarters
IDC	Imperial Defence Committee
lbs	Pounds
LRMP	Long Range Maritime Patrol Aircraft
MM	MacArthur Memorial (Norfolk)
MTF	Mobile Task Force
NATAR	National Archives (Washington)
NATO	North Atlantic Treaty Organisation
NEI	Netherlands East Indies
NLA	National Library of Australia (Canberra)
OAH	Office of Air Force History (Boiling Air Force Base, Washington)
OCAS	Office of the Chief of the Air Staff
OG	Operational Group
OTHR	Over-the-Horizon Radar
PGM	Precision Guided Munition
PRC	People's Republic of China
PRO	Public Record Office (London)
RAAF	Royal Australian Air Force
RAAFNS	Royal Australian Air Force Nursing Service
RAAFQ	RAAF Quality (Management)
RAAFSC	Royal Australian Air Force Staff College
RAF	Royal Air Force
RAN	Royal Australian Navy
RCDS	Royal College of Defence Studies
RFC	Royal Flying Corps
RG	Record Group
RHS	RAAF Historical Section (Canberra)
RM	RAAF Museum (Point Cook)

RN	Royal Navy
RNAS	Royal Naval Air Service
RNZAF	Royal New Zealand Air Force
ROE	Rate of Effort
SAGW/SAM	Surface-to-Air Guided Weapon/Missile
SAS	Special Air Service
SASO	Senior Air Staff Officer
SDSC	Strategic and Defence Studies Centre
SEATO	South East Asia Treaty Organisation
SWPA	South West Pacific Area
SQN	Squadron
TAF	Tactical Air Force
TFF	Tactical Fighter Force
UNSW	University of New South Wales
UNO	United Nations Organisation
USAAC	United States Army Air Corps
USAAF	United States Army Air Force
USAF	United States Air Force
USN	United States Navy
WRAAF	Womens' Royal Australian Air Force
VLR	Very Long Range (bombing force)

INTRODUCTION

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. 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.

It might seem remarkable, therefore, that it was not until 1990 — almost 70 years after it became an independent Service — that the Royal Australian Air Force published its own manual of air power doctrine.¹ The absence of a definitive indigenous manual does not, of course, mean that the RAAF has lacked purpose, direction or leadership since its formation in 1921. On the contrary, by any standards it has been, and remains, an institution of high quality. The institutional framework for that kind of achievement in any organisation is likely to be derived from two main sources. The first is its ethical foundations: for example, the ethos of service and sense of collective and individual worth. Secondly, a logical concept of operations which can be transmitted in a coherent form to all working levels is necessary. In the RAAF the first of those requisites is likely to come from leadership, training, a belief in the organisation, corporate spirit and pride in past achievements; while the latter is conveyed down the chain of command through numerous written orders and instructions.

Clearly, at the tactical level at least, the RAAF has successfully established that framework. In World War I (as the Australian Flying Corps), World War II, Korea, Malaya and Vietnam the Air Force performed with distinction. As it enters its eighth decade it operates the region's most advanced equipment and continues to attract praise for its performance in international exercises. Yet the Chief of the Air Staff in 1991, Air Marshal R.G. Funnell, suggested that the use of air power in military operations 'has been and continues to be the major intellectual problem confronting military thinkers', as a consequence of which air power as an element of national military power 'has been consistently undervalued in Australian defence thinking'.²

Intellectual uncertainty has been accompanied by a degree of corporate unease. A submission made by the RAAF's senior officer in Western Australia to a 1987 Parliamentary enquiry into personnel management in the defence forces reflected concern that the Air Force was under threat of dismemberment, a circumstance ascribed to perceived Army and Navy attempts to subsume air assets.³ The essence of that concern, which was also noted by Air Marshal Funnell, was the opinion expressed by 'many people' in the mid 1980s that the RAN should operate the RAAF's long-range maritime patrol force (LRMP) and the Australian Regular Army (ARA) its battlefield helicopters.⁴

Threats to the continued independence of the Air Force are not new. In the years leading up to World War II the RAAF had to deal with an explicit subservience to Navy and Army, while since then it has been subjected to periodic forays of varying seriousness against its assets. That particular pressure is only one of a number of external forces which inevitably have influenced RAAF thinking since 1921. Any evolution in military thought is unlikely to escape

Introduction

the vicissitudes of, for example, national security policies, technology and, indeed, inter-Service rivalries.

In examining the development of RAAF doctrine, this book has been structured around significant periods in Australian history, which themselves define a range of policy pressures. The only exception is Chapter One, which presents a necessary examination of the relationship between theory and practice in air power doctrine, to provide a framework for the remainder of the argument. Chapter Two covers the years from 1921 to 1938, when Australian security policy was dominated by the country's commitment to Imperial defence. That was also the period when Navy and Army opposition to an independent air service was strongest. World War II provides an obvious framework for Chapter Three. While air power emerged as a decisive factor in that conflict, at the end of the war disturbing questions remained about the way in which the RAAF had been employed and the ability of its senior commanders to promote their Service as a major consideration in national security planning.

There was, understandably, a great deal of uncertainty in the immediate post-war years, which are examined in Chapter Four. Governments had first to demobilise hundreds of thousands of troops; and then try to frame policies which dealt with the atomic threat and the tensions of the emerging Cold War. The Australian Government's response of negotiating the ANZUS Treaty in 1951 put in place a security framework which has exerted a major influence on foreign and defence policies ever since. Chapter Five covers the period from 1950 to 1972, when alliance politics, opposition to communism and the Cold War continued to underpin the national defence outlook. The withdrawal of the Australian forces from Vietnam in 1972 provides a starting point for Chapter Six. Together with Britain's departure from east of Suez and President Nixon's Guam Doctrine, the Vietnam experience reinforced growing nationalist ambitions to achieve a greater degree of foreign policy and defence self-reliance. In turn, those circumstances challenged Air Force strategists to examine their Service's intellectual foundations. The publication of the RAAF's first air power manual in 1990 was one important response to that challenge.

Just how important a definitive indigenous doctrine will be to the RAAF cannot be assessed at this stage as the document has only recently been published. The main purpose here is to present a detailed analysis, of the development of doctrine in the Royal Australian Air Force, which examines not only ideas and strategies, but also such indicators of doctrine as force structure, roles, organisation, command and control, education and the like. At the same time, an effective examination of those issues should help to explain how the RAAF's interpretation and application of air power doctrine has affected both its own capabilities and national security.

NOTES TO INTRODUCTION

1 RAAF, AAP 1000, *The Air Power Manual*

2 Air Marshal R.G. Funnell, 'The Royal Australian Air Force: A Small Air Force and its Air Power', The 1987 Sir Ross and Sir Keith Smith Memorial Lecture, in *Royal Aeronautical Society Magazine*.

3 Air Commodore B.I. Lane, *Personnel Wastage in the Australian Defence Force — Report and Recommendations*, Submission to Parliament of the Commonwealth of Australia, Joint Committee on Foreign Affairs, Defence and Trade, Canberra, 1988.

4 Air Marshal R.G. Funnell, 'Air Power Strategy', in Ball (ed.), *Air Power: Global Developments and Australian Perspectives*, p 95.

CHAPTER
— ONE —



*AIR POWER DOCTRINE:
THEORY AND PRACTICE*

Like any form of combat power, air power 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 it will remain responsive to a range of external influences from the wider civil and military communities which combine to shape the national security outlook.

NATIONAL SECURITY POLICY

National security policy is the most senior of those influences. 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 ministers. 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, the defence, foreign affairs and economic portfolios are 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 military weapons employment, while with the economic portfolio, financial constraints continually affect force development.

Beneath those broader influences — which frequently may apply in the form of constraints rather than condecements — comes more specific guidance, the best recent instance being the 1987 Policy Information Paper, *The Defence of Australia*.¹ That document presents explicit interpretations of such matters as national defence interests, alliance relationships, threat assessments, defence strategy and budgetary considerations. In turn, that information leads logically to conclusions on the structure, roles and disposition of the defence force. Regardless of any of the inherent qualities of the various forms of combat power, those kinds of factors must influence land, sea and air doctrinal development.

THE DETERMINANTS OF DOCTRINE

The policy influences described above are external to the RAAF and are largely beyond the organisation's control. So too are the characteristics which give air power its unique capabilities and which, like those external forces, must underpin doctrine. The inherent characteristics of air power are implicit in the definition used in the RAAF. Air power is defined as 'the ability to project military force by or from a platform in the third dimension

above the surface of the earth'.² 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 derived directly from the singular characteristics of the aeroplane. Minor disagreements might arise over terminology, but there would be general agreement that those characteristics could be summarised as flexibility, mobility, reach, speed, versatility, pervasiveness, responsiveness, the ability to concentrate force, and high relative military effect (that is, the high ratio of combat power applied to the numbers of combatants involved).

While the RAAF may not have had a formal doctrinal manual for its first 70 years, the inherent characteristics of air power have always been well understood. It would be a matter for some dismay if that were not the case; nevertheless, it is an important observation which needs to be recorded. Comments from three representative chiefs of the air staff serve to illustrate the point.

Australia's first CAS, Air Marshal Sir Richard Williams, prepared a paper on air power for the Minister for Defence in 1936.³ Williams drew attention to the aeroplane's 'enormous hitting power' and 'ever increasing range, speed and, consequently, mobility'. He argued that the latter set of characteristics also gave the Air Force the means to overcome 'any natural obstacles' and 'old methods of defence'. Similar qualities were identified in an article which the RAAF's wartime commander, Air Vice-Marshal George Jones, sent to the Prime Minister and the Minister for Defence in 1946, and which he endorsed as containing 'conclusions and proposals [which were]...in close agreement with the policies which we are endeavouring to follow in the RAAF'.⁴ That document presented a more sophisticated perception of air power than did Williams' paper, a consequence perhaps not of personality but rather of the technological advances made in a decade and the lessons learnt from a world war. Notwithstanding those events, the article's analyses and conclusions were all predicated on the same basic characteristics identified by Williams.

The third and final illustration is provided by Air Marshal R.G. Funnell who, following his appointment in 1987, played the dominant role in the production of *The Air Power Manual*. Addressing a conference on 'Air Power: Global Developments and Australian Perspectives' at the Australian National University in 1986, Air Marshal Funnell described the characteristics of air power in terms familiar to his two predecessors.⁵ Flexibility, versatility, mobility and responsiveness were mentioned, as were range, the shock effect of air strikes, and an air force's unique ability to concentrate military power in time and space.

The point has already been made that doctrine will be responsive to a range of external forces. However, the enduring nature of those determinants of doctrine described above raises an interesting observation regarding the employment of air power. Changing technology is used here as an uncomplicated example of an external force to illustrate the observation, although other pressures (national policies, for example) could be used.

Air forces are highly technical organisations which must respond to developments in such areas as aerodynamics, propulsion and guidance systems, electronics, and weapons and information systems. Yet, notwithstanding the enormous technical advances made from the time of Sir Richard Williams to that of Air Marshal Funnell, the comments of all three leaders demonstrate that the inherent characteristics of air power have remained constant. Technology undoubtedly influences the way in which air power is applied and the effects of its application, but the nature of the business has remained the same.

THE CLASSICAL THEORISTS

While the inherent characteristics of air power are clear enough and generally accepted, the same cannot always be said for expositions of doctrine. At the start of this book doctrine was defined as an 'orderly and endorsed interpretation of theory and accumulated experience'; that is, doctrine is not simply theory or practice but theory *and* practice. The distinction is important. As was also noted in the Introduction, the RAAF has been most successful in operations (practice) but took 70 years to produce a confident, rigorous and independent exposition on the use of Australian air power (theory). The relationship between theory and practice must be seen as central to any analysis of the development of doctrine.

Airmen have not been well served by their theorists. Many of the difficulties which have affected the development of air power stem at least in part from the unrealised expectations raised by its early advocates. The ideas of such influential thinkers as Douhet, Mitchell and Trenchard have been examined at length elsewhere and need only brief comment here.⁶ In short, all three, and particularly the first two, 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.

Giulio Douhet's classic *The Command of the Air* was first published in 1921.⁷ Douhet had, however, presented the ideas in that book more than 10 years previously, a 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 notions firmly held in high places'. He was aware that his ideas, which challenged existing precepts of warfare, might seem 'daring, perhaps strange', but 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:

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

All that a nation does to assure her own defense 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.⁸

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 the 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 inherent and decisive offensive capabilities of air power. A 'Battleplane' which combined the capabilities of bomber and fighter aircraft was proposed as the means to those ends.⁹ Interestingly, Douhet's idea for a 'Battleplane' was



General Giulio Douhet: The Command of the Air. Aeronautica Militare Italiana.

one of the first proposals for a 'general purpose' or 'multi-role' aircraft, a concept which has been something of an article of faith for airmen ever since and which, like the belief in strategic bombardment, for many years never quite met the expectations of its advocates.

Douhet accompanied his thesis on aerial bombardment with considerable comment on other aspects of air warfare, including organisation, the moral aspects and material preparation. That he overstated his case and by doing so 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.

Edward Warner 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.¹⁰ 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 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 a moment of the first magnitude in the history of combat Mitchell provided a dramatic demonstration of his theories by sinking the captured German battleship *Ostfriesland* with 2000 lb bombs during trials in July 1921.¹¹

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

Hugh Trenchard's contribution to the development of air power is difficult to overestimate. Commander of the Royal Flying Corps (RFC) on the Western Front, director of the Independent Force's bombing campaign against Germany and champion of the RAF between the wars, Trenchard played a dominant role in the development of Western air forces during the first half of the twentieth century. In contrast to his early years as a regimental officer when he showed no special intellectual ability, he became a significant original thinker on the employment of air forces. His major contributions to air power theory are discussed in detail in Chapter Two, in the section on the notebooks of Air Vice-Marshal H.N. Wrigley. Brief mention must be made here of his two most significant concepts.

The first formalised two enduring maxims of air power. In his classic instruction to the RFC of September 1916 titled '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. Substitution remains a topical but controversial contribution to air power doctrine. For all his practical experience Trenchard was, however, subject to the same criticism as the other theorists. According to Trenchard's biographer, Winston Churchill felt that he 'too often spoiled a good case by overstating it'.¹²

There is a nice irony in the fact 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 some of the aeroplane's capabilities, provided their opponents with the means to refute them. Because of the theorists' predictions and the public panic caused by air attacks during World War I, the spectre of air power haunted statesmen in the period between the wars.¹³ During the early years of World War II, however, the apparent failure of strategic bombing to meet its supporters' claims damaged the credibility of air power



*General William 'Billy' Mitchell: Independent air power
and the demise of capital ships. OAH.*

generally. Notwithstanding the eventual pervasive dominance of the aeroplane in both land and sea battles, a legacy of uncertainty about air power theory was created. Yet at the ultimate level the early theorists were proven correct, for the strategic bombing attacks on Hiroshima and Nagasaki made any other form of global warfare redundant at that **time**. The concept of Mutual Assured Destruction (MAD) has permanently changed strategic thinking.

THEORY AND PRACTICE IN CONTEMPORARY DOCTRINE

Clausewitz's famous observation that war is characterised by 'fog' and 'friction'¹⁴ could equally be applied to many attempts to categorise and separate thought and action in doctrinal studies. As there almost invariably will be a degree of overlap, semantic problems often arise. For example, the inherent characteristics of air power have in the past sometimes been presented as doctrine; but as the author of the RAF's current doctrine manual, Group Captain A.G.B. Vallance, has correctly pointed out, those characteristics should be regarded as *determinants* of doctrine, not tenets.¹⁵ Similarly, it is not difficult to confuse a 'role' or a 'strategy' with a doctrinal principle.

The word 'doctrine' seems to mean different things to different people. Some discussion, therefore, on contemporary USAF, RAF and RAAF interpretations may be helpful. It is not the intention of this discussion to facilitate 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 purpose 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'.¹⁶ It represents 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'.¹⁷ 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. Nevertheless, the principles of basic doctrine should be evident throughout the operational and tactical levels. Seven tenets of basic air power employment doctrine have been identified by the USAF, as follows: centralised control/decentralised execution; flexibility; priority; synergy; balance; concentration; and persistence.

Doctrine is defined by the RAF as 'an accumulation of knowledge which is gained primarily from the study and analysis of experience'.¹⁸ In essence, doctrine informs airmen of 'that which...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, 10 factors which are important to the successful employment 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.¹⁹ Those factors are not presented in the RAF's manual as a hierarchical list, but rather as a circular, mutually supportive process.



Lord Trenchard: Offensive action and substitution. RAF.

The care taken by the RAF to avoid explicitly identifying air power maxims raises an interesting issue. The point has already been made that doctrine does not develop in a vacuum. Like any intellectual activity it must respond to a range of external pressures. As subsequent chapters of this book illustrate, one of the strongest, most persistent pressures on air force attitudes has been the hostility of admirals and generals to independent air power. Inevitably, therefore, there is a political dimension to doctrine. The development of the RAF's current manual, *Air Power Doctrine*, demonstrates that dimension.

The precursor to *Air Power Doctrine* was, a thesis written in 1988 by Group Captain A.G.B. Vallance, who, after completing that thesis, was appointed to rewrite his Service's doctrine.²⁰ Unlike the eventual official manual, Vallance's thesis listed five tenets of air power employment: air power can be independent of land and sea power and an independent air force is required to exploit it; air power should be employed as a united and indivisible entity; air power can be used as a substitute for land and sea power; offensive action is of prime importance in aerial warfare; and it is important to gain air superiority.²¹ The first two of those tenets clearly have inter-Service political significance, with their unambiguous statement of support for independent air force operations; while the third — the concept of 'substitution' — had infuriated Britain's generals and admirals when first raised by Trenchard in the 1920s.²² In the period between writing his thesis and *Air Power Doctrine*, Vallance decided that, regardless of the logic and merit of those tenets, the sensitivities of inter-Service politics would be best served by taking a moderate line.²³ Thus, while Vallance personally strongly supported the notions of independence and unity (both of which appear in the Australian manual as 'maxims'), he elected to present them implicitly in the RAF's official doctrine. Explicit references to substitution were also deleted as, with its obvious consequences for the force structure, the concept is highly political.

RAAF strategists define doctrine as the 'body of central beliefs about war that guides the application of air power in combat'.²⁴ 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 achieved in combat only by conducting concurrent air campaigns using a unified, balanced and independent force.²⁵ Thus, the RAAF's four doctrinal maxims are: the ability to conduct concurrent air campaigns, unity, balance and independence. Together 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 latter two, clear parallels exist in current American, British and Australian 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,²⁶ that appears to be a sensible, and therefore valid, 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.

For example, the RAAF, the USAF and the RAF all identify independent operations and offensive action as components of their basic air power employment doctrine.²⁷ In many

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instances those components would combine to take form as strategic strike operations. Strategic strike capabilities are not, however, inherent in an air force, but are a direct function of force structure. Yet it may be the case that national policy — strategic, economic or social — discounts maintaining a strategic strike capability.²⁸ In such circumstances, the two basic concepts of independent operations and offensive action (when interpreted as strategic strike) are not necessarily disproved, but are certainly irrelevant.

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 power doctrine. Good doctrine will be a balance of ideas and action, in which influence can flow both ways. As Clausewitz wrote in his classic *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...²⁹

The right balance may be difficult to achieve. In 1990 two principle authors of contemporary doctrine in the RAF and the USAF commented that their Services have perhaps focused on the practical component of doctrine at the expense of the theoretical. Group Captain A.G.B. Vallance observed that the RAF has tended to gravitate to the technical and tactical levels of thinking and paid insufficient attention to operational and strategic concepts; while Colonel Dennis Drew, in drawing attention to the strong connection between the development of doctrine and history, stated that the USAF Air University intends placing greater emphasis in its syllabus on military history.³⁰

Until the publication of *The Air Power Manual* in 1990, expressions of doctrine in the RAAF were made predominantly in terms which define what an air force does and how it does it; that is, in practical rather than theoretical terms. In the evidence examined for this study, the theory component of doctrine has largely been implicit. Consequently, it has generally been necessary to use a comparative technique to identify elements of doctrine. The inherent characteristics of air power — its 'determinants' — as identified by a succession of chiefs of the air staff have remained constant over the life of the RAAF. Relating those characteristics to tangible indicators of doctrine such as force structure, roles, training and so on, should enable an accurate picture of the development of air power thinking in the RAAF to emerge.

However, more than that is needed. As has been noted, doctrine not only provides the guiding force for action, structure and organisation, but is also the highest expression of military thought. It is concerned with the history of a Service's ideas, with Clausewitz's 'war of opinions'.³¹ In his monumental study *Basic Thinking in the United States Air Force*, Frank Futrell found it necessary to define that thinking not simply as doctrine, but as 'ideas, concepts [and] doctrine'.³² In 1986 when the RAAF was in the early stages of writing its own doctrine, the Directorate of Air Force Plans argued that there is a connection between doctrine, strategic thought and military guidance.³³ Accordingly, the directorate concluded that any RAAF doctrine would have to take account of government and higher Defence Force policies, endorsed strategic guidance, ADF concepts for operations, Air Staff plans and policies, and the history, principles and theory of war. The approach that an examination of doctrine must comprehend the quality of an organisation's basic thinking has been followed here.

There also is a direct relationship between reviewing and confirming or modifying an organisation's fundamental beliefs and the education of its members. One of the principal authors of *The Air Power Manual* has stated that, as his work progressed, he increasingly appreciated the worth of the intellectual process involved.³⁴ The absence of a formal, rigorous process to establish and present those beliefs could inhibit a Service's intellectual vigour and, consequently, the rational development of the total defence force. Further,

without the stimulus of theoretical debate, the practical development of any endeavour is more likely to be constrained. In that context, Air Marshal Funnell's observation that 'nowhere is there a comprehensive, coherent, well-articulated and broadly supported theory of air warfare'³⁵ is noteworthy, as are the often-expressed concerns over perceived attempts by the other two Services to dismember the Air Force. Accordingly, particular attention has also been paid here to the process by which doctrine has been developed. That process had its origins in the experiences of Australian airmen during World War I, and began formally on 31 March 1921 when the Australian Air Force was established as an independent Service.

NOTES TO CHAPTER ONE

- 1 Department of Defence, *The Defence of Australia, 1987*, Policy Information Paper, Canberra, 1987 (hereafter The 1987 White Paper).
- 2 The definition comes from Armitage & Mason, *Air Power in the Nuclear Age*, pp 2-3.
- 3 Australian Archives (AA), CRS A5954, Box 877.
- 4 AA, CRS A5954, Box 1634.
- 5 Air Marshal R.G. Funnell, 'Air Power Strategy', in Ball, *Air Power: Global Developments and Australian Perspectives*, pp 96-100.
- 6 Other influential early theorists include Lanchester, Sykes, Groves, Slessor and deSeversky. However, Douhet, Mitchell and Trenchard are the most important.
- 7 Douhet, *The Command of the Air*, pp xi-xii.
- 8 *ibid*, p 28.
- 9 *ibid*, pp 117-20.
- 10 Edward M. Warner, 'Douhet, Mitchell, Seversky: Theories of Air Warfare', in Earle (ed.), *Makers of Modern Strategy*, qv David MacIsaac, 'Voices From the Central Blue: The Air Power Theorists', in Paret (ed.), *Makers of Modern Strategy*.
- 11 Mitchell, *Winged Defense*, pp 66-73; and Hurley, *Billy Mitchell: Crusader for Air Power*, pp 64—70.
- 12 Boyle, *Trenchard*, pp 724-5.
- 13 See Document 1, 'The Nature of War', in Stephens & O'Loghlin (eds), *The Decisive Factor: Air Power Doctrine by Air Vice-Marshal H.N. Wrigley*, pp 3-13.
- 14 Clausewitz, *On War*, pp 164—7.
- 15 Vallance, *The Evolution of Air Power Doctrine Within the RAF* (Unpublished MPhil Thesis), p 18.
- 16 Air Power Research Institute, AFM 1-1, *Basic Aerospace Doctrine of the United States Air Force*, 1990, p v.
- 17 Department of the Air Force, AFM 1-1, *Basic Aerospace Doctrine of the United States Air Force*, pp v-vi.
- 18 RAF, AP 3000, *Air Power Doctrine*, p 5.
- 19 *ibid*, pp 85-96.
- 20 Vallance, *op. cit.*; and Group Captain A.G.B. Vallance, Interview, RAF Bracknell, 12-11-90.
- 21 Vallance, *op. cit.* pp 19-20.
- 22 See pp 24-5 below.
- 23 Vallance, Interview.
- 24 *The Air Power Manual*, p 257.
- 25 *ibid*, p 38.
- 26 See, for example, S.M. Walt, 'The Search for a Science of Strategy', in *International Security*, Summer 1987; and Richard N. Rosecrance, 'Explaining Military Doctrine', in *International Security*, Winter 1986-87.
- 27 *The Air Power Manual*, pp 33-7, 42; AFM 1-1 (1990 draft), pp 2-2/3, 3-2/3; *Air Power Doctrine*, pp 57-64.
 - 28 The RAAF encountered that problem in the South West Pacific in World War II during its attempts to acquire an independent strategic strike capability. Despite persistent and strong representations at the highest levels, Australia was unable to convince the US to provide it with heavy bombers until late 1943. US strategists perceived higher priorities for those aircraft, so in the meantime the RAAF had to operate with a force which was 'quite out of balance'. See Chapter Three.
- 29 Clausewitz, *op. cit.*, p 191. Clausewitz presents a masterful analysis of the theory of war on pp 180-200.

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- 30 APSC Seminar, Canberra, 15-5-90. At the time Vallance was the RAF's Director of Defence Studies, and Drew the Director of the USAF's Airpower Research Institute.
- 31 Clausewitz, op. cit., p 181.
- 32 Futrell, *Ideas, Concepts, Doctrine: A History of Basic Thinking in the United States Air Force 1907-1964*.
- 33 Directorate of Air Force Plans (DAFP), AF 86-16116, 17-11-86.
- 34 Group Captain DJ. Schubert, Interview, Canberra, 17-1-91.
- 35 APSC, Air Marshal R.G. Funnell, Doctrine Development, CAS Note 558/89, 5-9-89.

CHAPTER
— Two —



A MATTER OF SURVIVAL
1921-1938

THE SUBORDINATE SERVICE

It was always going to be difficult for Wing Commander Richard Williams and his senior RAAF colleagues to consolidate their Service's independence in its early years. There were three main reasons for this, two arising from alliance and military relationships, and the third from organisational constraints. In the first instance, Australia's involvement in the Imperial defence strategy inevitably placed its senior military commanders in a position subordinate to their British counterparts.¹ For the RAAF, the restrictions inherent in that situation were exacerbated by its explicit subservience to the Navy and the Army. Finally, the Air Force's development was inhibited by the Defence organisation's nature and funding. In that environment of over-riding external pressures, doctrinal development was always likely to take second place to survival.

Notwithstanding the excellent performance of the Australian Flying Corps (which was part of the Army) during the Great War and the apparent potential of air power,² it was by no means certain that Australia would follow the United Kingdom's lead and form an independent air service. Following the establishment of the RAF in 1918, Australia's Minister for Defence, Senator G.F. Pearce, appointed a committee to report on, *inter alia*, the needs of military aviation.³ Chaired by the Hon. G. Swinburne, the committee included the CGS, Major General J.G. Legge, and a former RNAS airman, Lieutenant Colonel O.H.K. Maguire.⁴ As its starting point the Swinburne Committee accepted the strategic basis of the Imperial defence strategy, namely that Australian security would continue to be based on sea power. That assessment inevitably circumscribed the committee's outlook. Its members were aware of 'what had taken place in Great Britain in respect to the establishment of a new "service" and "force"', but did not believe that the circumstances which justified the creation of the RAF were relevant to Australia.⁵ Accordingly, while they supported the establishment of an air service, they rejected any suggestion that it should have an independent role. Any Australian air force would exist solely to support the sea and land forces.

For reasons of economy and the necessarily limited size of the proposed service, the Swinburne Committee recommended the formation of a single, separate air corps, rather than one each for the Army and Navy. Their proposed 'Australian Air Corps' was to be administered by an Air Board comprised of members of the Naval and Military Boards, while the wings of the corps allotted to the Navy and Army were to be controlled by the Naval and Military Boards respectively. Even that tight degree of control did not satisfy Major General Legge. In an expression of things to come, he opposed the committee's recommendations and submitted a minority report. Legge referred to the 'extravagant waste of public money which had occurred in England on the combined air service' (the RAF), and argued that Australia should have two separate air branches, one each under the control of the Army and

Navy. In his opinion a 'joint Service' would be 'unworkable'. Rejecting Legge's dissent, the Cabinet of Prime Minister W.M. Hughes approved Swinburne's recommendations on 18 February 1919.⁶

Following the decision to proceed with a separate air service, an Air Board was formed, consisting of Captain W. Nunn and Lieutenant Colonel S.J. Goble as Naval Members, and Brigadier T.A. Blarney and Lieutenant Colonel R. Williams as Military Members. Early in 1920 Senator Pearce instructed the board to prepare recommendations on air policy. The board's strategic assessment was noteworthy in its implications for the use of air power. Geography was central to that assessment. In the board's judgment, Australia's isolated position and the limited radius of action of existing aircraft 'rendered independent action by air forces against enemy centres impracticable', as a result of which 'the action of aircraft in the defence of Australia would be confined to auxiliary work for the army and navy'.⁷ It followed, therefore, that the disposition of the air service should conform to that which best served the requirements of the other two Services, a decision consistent with the prevailing inter-Service political climate. The key role for an 'Air Corps' was defined as surveillance. An army depended on its cooperation aircraft for information; while, along with naval units, aircraft constituted the 'chief means' of completing long-distance reconnaissance with 'sufficient rapidity and certainty'.⁸

It is worth noting that in reaching its unimaginative conclusions, the board had the opportunity to consider — and presumably had rejected — objective expert opinion to the contrary. In 1919, Admiral of the Fleet Lord Jellicoe had visited Australia and handed down a report on maritime defence.⁹ Jellicoe's report had included a brief but impressively detailed and argued section titled 'Future Possibilities of the Use of Aircraft Against Ships and Submarines'. His analysis demonstrated a perceptive and informed knowledge of the subject, discussing such issues as aircraft performance, bombing effectiveness, technical developments, weapons, anti-aircraft fire and the effect of weather on air operations. Jellicoe's conclusions, based on a reasoned application of probabilities, sounded a strong warning to navies on the present and future dangers of air attack. Perhaps it was convenient that Jellicoe's report was rejected by the Admiralty in London. Its findings certainly did not leaven the dismissive attitude of Australia's generals and admirals to the notion of independent air operations.

Even though their policy firmly placed the nascent air service in a subordinate role, the board found it could not avoid the question of control of the air, with its unambiguous connotations of independent air operations. Board members assessed that any enemy action against Australia could be strongly supported by hostile aircraft, whose dual objectives would be to collect information while denying Australian forces the same opportunity. Inevitably that would lead to 'fighting in the air', a circumstance which indicated the need for air strength near major population centres to ensure that 'absolute mastery in the air was obtained in the early stages of the struggle'.

In addition to surveillance, the Navy and Army had their own tasks for the air service. Navy requirements covered three major roles. The first was 'attacking enemy ships', for which torpedo bombers were needed; second was patrolling, scouting and protecting warships, for which flying boats and seaplanes were needed; and finally, 'ordinary fighting squadrons' were required 'for the protection of special points'. The force structure recommended to meet those objectives consisted of one fighting squadron, one torpedo bomber squadron, one ships' seaplane squadron, and 12i flying boat squadrons. Those squadrons required a total of 198 aircraft, with the standard 50 per cent reserve bringing the sum to 297.

Army air requirements encompassed three distinct roles. 'Fighting planes' for 'dealing with enemy aircraft' were listed first, a priority which perhaps unconsciously acknowledged the concept of 'control of the air' as the prime air power campaign. Reconnaissance machines were required for a variety of observation duties, while 'bombing planes' were necessary for

'operating directly against the enemy';¹⁰ again, there were clear connotations of independent operations in that role. Implicit recognition of independent air power was even more pronounced in the Army's recommended establishment. Only six of the proposed 21 squadrons were intended for direct army support in the reconnaissance role. Of the others, eight were to be fighting (air superiority) squadrons and six bombing squadrons, with the remaining unit responsible for training. Satisfying those roles would require 669 aircraft, including the 50 per cent reserve.

The total force structure proposed to satisfy the board's policy was interesting on several counts. As has been noted, the Navy wanted 297 machines and the Army 669, in a program to be implemented over six years. A grand total of 966 aircraft was not only unrealistic to the point of absurdity, but also seemed quite out of keeping with the notion of a subordinate Service. Any specialist force of that size, regardless of whether it is discrete or integrated, is likely to develop its own outlook and a common sense of purpose, particularly if its professional base — in this case, the pilots — shares a common training system.¹¹ The Air Board's proposal did, however, demonstrate a keen appreciation of air power. More to the point, the structure and the roles envisaged for the air service reflected the fact that it is difficult to exercise air power in any sort of balanced form without raising — even unintentionally — the issue of independent offensive action.

The concept of operations proposed by the board was accepted by the Hughes government. At a special meeting of the Council of Defence on 12 April 1920, at which the Prime Minister and the Defence Minister were among those present, it was confirmed that an air force would be formed to meet 'certain fundamental needs of the Navy and the Army...The Air Force recommended is auxiliary to the Navy and Army, and is not an independent force. It provides merely for the minimum needs of the existing defence Force'.¹²

While the concept of operations was endorsed, there was no chance that the recommended number of aircraft would be approved, as the cost would have been prohibitive. The board's motives for proposing such a massive force make little sense unless seen in the context of an assumed continuing naval and military dominance of the new Service or, indeed, its eventual absorption back into the two senior Services. Whether the same numbers would have been proposed had it been thought that the Air Force would develop its own identity remains debatable. In the event, when the Air Corps became the Australian Air Force on 31 March 1921, the bulk of its aircraft came as a gift from the Imperial government and consisted essentially of obsolescent machines left over from World War I. Any relationship between force objectives, structure and roles, and air power doctrine, was therefore likely to be as much coincidental as intentional.¹³

The stifling effect of naval and military domination on the Air Force's development was repeated at the highest policy level, where Australia's defence independence was constrained by the national commitment to the Imperial strategy and the British connection.¹⁴ The Imperial Conference of 1923 declared that the basis of the Empire's security was the sheltering screen provided by the Royal Navy,¹⁵ a judgment which was confirmed at subsequent conferences in 1926, 1930 and 1937.¹⁶ Passing reference was made at one conference to the merits of adopting a common approach to training and equipping air forces, while the need to establish and maintain an adequate chain of staging posts to facilitate the 'effective and economical employment of air power' was also acknowledged. At the 1937 conference, some information was presented on the belated implementation in Australia of the expansion plan for the RAAF recommended by Sir John Salmond in 1928. Overwhelmingly, however, the notion of sea power underpinned strategic thinking.

In the circumstances, it was scarcely surprising that the RAAF was dominated by RAF thinking. Twice during the inter-war period a major review of the Air Force was considered necessary, and on each occasion the government of the day turned to an RAF officer. The Salmond Report of 1928 and the Ellington Report of 1938 were probably the major

influences on RAAF policy and thinking during those years, a strong indication that RAAF strategic planning, development, equipment procurement and staff training were to all intents and purposes totally reliant on the RAF.¹⁷

Finally, the RAAF was desperately short of resources. If the Imperial connection and the explicit subordination to the other Services inhibited the Air Force's intellectual independence, funding and manning constraints imposed suffocating restrictions on force development, a process which itself inevitably circumscribed capabilities and, therefore, doctrinal development. When the Australian Air Force was formed in 1921 its total complement of officers was 21. For a military organisation involved in a comparatively new — and in some influential circles distrusted — endeavour, and one which was trying to build itself from the ground up, that was a very small professional base. The officer corps remained small. After three years it had grown to 65 permanent members, and by 1929 to 110.¹⁸ Day-to-day demands such as establishing facilities, conducting training and determining standards naturally received priority. In those circumstances, it was understandable that the development of theories was seen almost as a luxury. Indeed, according to Air Marshal Sir George Jones, little consideration was given to doctrine in those days as the Air Force concentrated on the business of surviving and meeting its primary obligation of supporting the Navy and the Army.¹⁹

Resource constraints affected each of the Services, but primarily the RAAF. The establishment of the Air Force coincided with the decision to place defence spending on a peacetime basis for the first time since the Great War. As the international community reacted against World War I — the first session of the Washington Disarmament Conference was held only eight months after the RAAF was formed — the government's priority was to 'achieve a measure of relief from the burden of armaments at a time when the financial and economic situation was most difficult and complex'.²⁰ Defence funding became even tighter in the Depression years, falling from 7.0 million pounds in 1926-27 to 5.7 million pounds in 1928-29 and 2.7 million pounds in 1931-32.²¹ As Figure 2.1 illustrates, between 1921-22 and 1931-32 the RAAF received less than 9 per cent of total defence appropriations. Those difficult financial conditions did not start to improve until the mid 1930s, when the growing threat of war and the easing of the Depression made greater defence expenditure both necessary and possible.

Operational units were few, fragmented in role and staffed substantially on a citizen force (that is, non-professional) basis. By 1929 the Air Force's flying units comprised only the Flying Training School at Point Cook, one landplane squadron each at Laverton and Richmond, and a seaplane flight attached to the RAN. The landplane squadrons contained about one-third permanent and two-thirds citizen force staff. Further, the squadrons were organised on a composite basis, with each of their three flights tasked with a different role, namely army cooperation, bombing or air fighting. As Sir John Salmond noted during his review of the RAAF in 1928, those arrangements led not just to training and maintenance difficulties, but also to policy 'instability'.²²

The diversity of roles within the squadrons was in fact partly an attempt to do as much as possible with limited resources, and partly a shrewd doctrinal move. An army cooperation flight was essential in each squadron, as that was the RAAF's main role. By forming 'mixed' squadrons, the RAAF also was able to operate bomber and fighter flights, and thus acquire some expertise in the roles most favoured by advocates of independent air power. According to the Secretary of the Air Board, Major P.E. Coleman, the composite units could be rapidly expanded into squadrons of each type if necessary.²³

Naval and military antipathy towards the RAAF continued to surface throughout the inter-war years. In 1925, CGS Sir Harry Chauvel was still insisting that it was never the intention of the government for the Air Force to be 'co-equal to the other two Services', and that he could not envisage any situation in which the RAAF would be employed independently of.

FIGURE 2.1

*DEFENCE EXPENDITURE BY SERVICE
F/Y 1921-22 TO 1931-32
(in pounds Australian)*

<i>Financial Year</i>	<i>Navy</i>	<i>Army</i>	<i>Air Force</i>
1921-22	3,212,736	1,386,042	245,755
1922-23	2,575,131	1,230,378	189,517
1923-24	2,279,310	1,289,171	207,423
1924-25	2,393,562	1,269,799	402,908
1925-26	3,567,935	1,307,815	448,715
1926-27	5,027,133	1,299,454	687,099
1927-28	3,658,540	1,284,886	522,002
1928-29	3,769,897	1,270,443	662,902
1929-30	2,064,121	1,211,337	501,663
1930-31	1,760,273	1,184,558	363,190
1931-32	1,406,887	979,429	323,604

Source: *Aircraft*, August 1, 1931, pp 14-15.

the other Services against a seaborne attack on Australia, while in 1929 Sir John Monash and Sir Brudenell White were urging at a Council of Defence meeting that 'the Air Force was an arm and not a separate Service...no independent sphere of action for the Air Force existed in the Great War nor did it exist in Australian defence'.²⁴ Air Commodore Williams, who attended the 1929 Council of Defence meeting as CAS, was able to point out that Monash and White were wrong, as General (later Marshal of the RAF) Trenchard's Independent Force had conducted strategic bombing attacks against Germany from October 1917.

A particularly strong anti-RAAF move emerged in 1929, when there was a genuine possibility that the Air Force would be dismembered. With the government of Prime Minister J.H. Scullin trying to manage the economic depression, a proposal was formally made to split the RAAF between the other two Services. Williams later wrote that the campaign against the RAAF was 'supported by the Navy and General Monash', and but for the 'foresight of Messrs. Scullen (sic) and Theodore...the move would have been successful'.²⁵ The campaign was continued when the Lyons government assumed power in 1932. Cabinet eventually decided that the RAAF should be retained and, according to Air Marshal Williams, after the mid 1930s 'the existence of the Air Force was not again threatened'.²⁶

A THEORETICAL BASIS: THE WRIGLEY NOTEBOOKS

While the circumstances described above weighed heavily on the RAAF, there is no doubt that the Air Force's senior commanders brought to their Service an appreciation of the value and potential of air power and the way in which it should be employed. That appreciation largely came from the lessons of World War I.

In the absence of a formal text on air power doctrine, a number of official and unofficial records serve as indicators of thinking on the subject at the time. The notebooks of Air Vice-

Marshal Henry Neilson Wrigley constitute a stimulating and valuable starting point.²⁷ Wrigley has perhaps not received the recognition his splendid career deserves. He served with distinction as a pilot with No. 3 Squadron in France and his pioneering flight from Melbourne to Darwin in 1919 stands as one of Australian aviation's most notable achievements. Following the disbandment of the Australian Flying Corps, he was commissioned into the Air Force on the day it was formed as a flight lieutenant. There were at that time only 21 officers in the force. During those early years Wrigley filled a number of influential positions in RAAF Headquarters. He served on the staff of the first CAS (Wing Commander Williams), who was responsible for Operations and Intelligence, and from March 1923 to April 1925 was the RAAF Headquarters Training Officer. Wrigley was one of the first RAAF officers to complete the RAF Staff College course, graduating in 1928, only four years after Williams. Promotion was regular. He became a squadron leader in October 1924, at which time the CAS was only one rank above him; and he reached the rank of air commodore shortly after the start of World War II. His scholarship was not limited to the notebooks under review here. In 1935 he published a book — a rare achievement for a serving RAAF officer — on No. 3 Squadron's operations during World War I, and the same year contributed an article on RAAF history to the *RAF Quarterly*.²⁸ Given that background, it is reasonable to accept that Wrigley's extraordinarily fastidious notes would have been representative of the Air Force's central beliefs. While a number of the observations and comments recorded by Wrigley have been made elsewhere by others, his are important to this study because they were made by a significant and influential RAAF figure.

Before examining the detail of Wrigley's work, two preliminary comments on the realities of developing doctrine are warranted. First, in his major essay titled 'Air Strategy', written in 1923, Wrigley somewhat apologetically commented on the need 'to get down to a bed rock foundation of facts' on the general characteristics of air power, as 'most of these are so obvious that they are apt to be overlooked'.²⁹ Nearly 70 years later as the RAAF drafted its first indigenous manual of air power doctrine, the writing team 'felt the same compelling need to include some explanatory remarks on these same "obvious" characteristics of air power'.³⁰ Second, in view of the establishment in 1989 of an RAAF Air Power Studies Centre,³¹ there is some ironic humour in Wrigley's note from the 1920s that an air force needs some sort of 'thinking department'.³² He based that conclusion on his wartime experiences. In his opinion, throughout World War I most of the aircraft were not only unsuitable for fighting but were 'impossible to fight in'. As Wrigley recorded, those who should have been 'thinking these things out' were too deeply immersed in the daily routine, 'too occupied with coaxing aeroplanes into the air and teaching pilots to bring them down again without breaking their necks'. Consequently, doctrine suffered.

Notwithstanding the immediate and constant constraints imposed by operations, ideas for the use of the air weapon emerged rapidly during the war. Two of the most significant early observations came from the Headquarters of the Royal Flying Corps in France. On 22 September 1916, the General Officer Commanding (GOC) of the RFC, General Trenchard, issued guidance on 'Future Policy in the Air', which Wrigley subsequently recorded approvingly.³³ Trenchard addressed the question of whether combat aircraft should be used offensively or defensively, and examined in particular the tactics the British and French Air Forces were employing to try to prevent hostile aircraft from crossing the front and harassing observation flights. He concluded that, while the aeroplane had significant limitations in the defensive role, 'as a weapon of attack, [it could not] be too highly estimated'. Trenchard's policy thus was to use the Flying Corps aggressively whenever possible. Recent French operations at Verdun during the winter of 1916 were cited to support his conclusion.

During the fighting at Verdun, the French initially had concentrated their aircraft into large formations and adopted a vigorous offensive policy, taking the fight to the enemy. Consequently, 'superiority in the air was obtained immediately', which in turn allowed the Entente's artillery cooperation and photographic reconnaissance aircraft to operate freely.



Air Vice-Marshal H.N. Wrigley: A theoretical basis. Mr R. Wrigley.

However, in order to satisfy other demands for air support, aircraft were dispersed to individual units. As air power could no longer be concentrated, the offensive was abandoned. The French then found they were unable to prevent German air attacks. Eventually the mistake was recognised, air power was again concentrated, and the policy of the general offensive resumed. The enemy 'at once' stopped making hostile raids, having been forced onto the defensive. 'Superiority in the air was thus once more regained.'

The emphasis on the offensive in Trenchard's policy was taken to the extreme. RFC Headquarters stated that should the enemy respond to an allied air offensive with similar tactics, then in turn the British and French should employ still greater aggression, increasing the scale of their offensive and going 'further afield' as a means of retaining the initiative.

'Future Policy in the Air' has become recognised as perhaps the definitive statement on the offensive use of air power. It has also been dismissed by some critics as little more than an RFC imitation of Sir Douglas Haig's policy for the land war.³⁴ As Commander-in-Chief of the British forces in France, Haig subscribed to a 'relentless and incessant' offensive; and, as Malcolm Cooper has pointed out, Haig and Trenchard 'spoke as one on the subject of air policy'.³⁵ Thus, it has been argued, the war in the air also became one of attrition, with losses such as those at Arras in April 1917³⁶ testimony to Trenchard's 'stubborn stupidity'.³⁷ That may or may not be true. As far as enduring doctrine is concerned, however, the origins of Trenchard's directive and the reverses experienced at Arras are less significant than the focus the policy placed on the *general* importance of offensive action and air superiority. Like all doctrine, those concepts require judgment in application.

Wrigley elaborated on the seminal concept of control of the air in the context of army cooperation. He noted that the campaigns of 1918 had again proven the value of a vigorous and continued air offensive, regardless of whether the army was advancing or retiring.³⁸ However, during those campaigns the RAF had become concerned by an increasing demand for army cooperation flights, which absorbed aircraft and reduced the Air Force's offensive power. Because support for the land forces was directly dependent on the degree of freedom of operation enjoyed by the RAF, the Air Force concluded that army cooperation was justified only if superiority in the air was assured. In the RAF's opinion at least, control of the air had replaced army cooperation as the prime role of air power. Wrigley recorded the implementation of that doctrine in notebook entries which also examined the technicalities of achieving air superiority, such as air combat tactics, formation flying and gunnery skills.³⁹

It is accepted that victory in war will at some stage necessitate offensive action. The doctrine articulated by Wrigley had drawn attention to the singular ability of an air force to take the initiative, particularly through its ability to concentrate force. As he wrote, 'the offensive implies concentration, the defensive necessitates dispersion'.⁴⁰ His discussion of the employment priorities for air power established the connection between the offence as an essential condition of victory and the unique capability of an air force to concentrate combat power effectively.

If the relative merits of offence and defence has been a perennial discussion topic in defence academies, so also during the 20th century has been the debate about the control of air assets and independent operations, an issue on which Wrigley reported in detail. Command and control is a subject of direct relevance to doctrinal development because it is central to the employment of air power. Perhaps the most influential report on the question of independent air operations was that prepared for the British government by the Smuts Committee in July/August 1917 which led to the formation of an independent RAF in 1918. If the RAF had not been formed, it is certain that an independent RAAF would not have come into being three years later, as only the world's second separate air force. Wrigley paid careful attention to the committee's work.⁴¹

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The Smuts Committee was an unusual instrument formed in unusual circumstances. Consisting of just the South African statesman, soldier and politician, Lieutenant General J.C. Smuts, and the volatile Prime Minister Lloyd George, the committee was established in haste in an atmosphere bordering on panic following the bombing of London by the German Air Force in the preceding months. Cabinet perceived a need for urgent political action. It was also considered probable that in the near future all of the aircraft equipment needs of the RFC and the RNAS — which at the time shared responsibility for military aviation — would have been satisfied and a surplus would start to accumulate, which raised the question of how best to manage the extra machines. The Smuts Committee's basic terms of reference thus were to report on the air defences of the United Kingdom and the higher direction of the air services.

As Wrigley subsequently recorded, under the existing arrangements the Air Board (which directed the RFC) was essentially subordinated to military and navy direction, a circumstance which made it 'useless' for the board to try to put forward its own policies, derived from its specialist knowledge. The Smuts Committee illustrated the untenable nature of that situation by contrasting the role of the air services with that of the artillery. Unlike batteries of guns, which had no role outside their direct support of the land battle, an air service, using the unique characteristics of the aeroplane, clearly could play an independent combat role. Smuts and Lloyd George presented a neat example of independent air operations by citing the very raids on London that had instigated their report. In terms reminiscent of Douhet, they suggested that 'the day may not be far off...when aerial operations...may become the principal operations of war', with the older forms of naval and military actions becoming 'secondary and subordinate'. It was proper, therefore, that the merits of establishing a specialist organisation to manage that potential should at least be examined.

Smuts and Lloyd George based their recommendation for the establishment of an independent air service squarely on the powerful argument of expertise. The matter was raised by posing the rhetorical question 'who is to look after and direct the activity of the surplus [aircraft]?' Answering its own question, the committee declared that 'neither the Army nor the Navy was specially competent to do so'; and for that reason the 'creation of an Air Staff for planning and directing independent air operations will soon be pressing'.

In his biography of Lord Trenchard, Andrew Boyle has suggested that the Smuts report owed its acceptance as much to politics as to the persuasiveness of its case.⁴² With the land war seemingly locked in an endless stalemate, Cabinet was looking for a way to curb the strategic monopoly of the Chief of the Imperial General Staff, Sir William Robertson, and the Commander-in-Chief in France, Sir Douglas Haig. Further, faced with a degree of public panic following continuing bombing raids by the Germans against the United Kingdom, the Prime Minister was desperate for a strike force which would be 'liberated from the dead hand of Haig and capable of carrying the war into Germany'. General Smuts' biographer, on the other hand, has indicated that the report succeeded through the merits of its case, which rested on the dual needs of rationalising the wasteful competition between the RFC and the RNAS, and establishing an organisation which could most effectively control and develop the great potential of the air weapon.⁴³ Malcolm Cooper took a middle course, arguing first that there were sound reasons for the committee's conclusions, but then that Smuts was poorly informed and unduly influenced by vested interests.⁴⁴

Regardless of any political machinations which may have been involved, the case argued by Smuts and Lloyd George was at worst defensible and at best convincing; that is, the decision to establish a separate air force could fairly be justified. It was a decision which implicitly recognised some of the tenets of air power doctrine. As Wrigley's notebooks point out, while the profoundly depressing ground campaign was considered likely to continue to move at a 'snail's pace in Belgium and France', the air battle front could be taken far behind the Rhine, bringing 'continuous and intense pressure' to bear against Germany's main industrial

centres and lines of communications.⁴⁵ A specialist organisation capable of conducting independent offensive operations was needed, not only to try to break out of the appalling mess on the ground in France, but also to strike at the enemy in his homeland. An independent air force, utilising its inherent characteristics of mobility, speed, range and concentration of force, and operating under the control of specialists, was a logical solution.

The Smuts Committee had, in effect, endorsed the concept of strategic bombing. The establishment of separate air forces meant that nations realised they could now use aircraft 'to impose [their] will upon the enemy people by action separate from that of the Navy and Army'.⁴⁶ That phrase was, of course, a description of strategic bombing, which in turn provided the foundation of the relationship between air power and deterrence. The effect of that relationship on concepts of warfare could fairly be described as dramatic. Total warfare could now be waged against an entire nation, with the objective being the destruction of the national will-power rather than its army and navy. The Clausewitzian principle that victory is achieved by defeating an enemy's military force had been turned on its head.⁴⁷

Ideas on the use of air power continued, however, to be constrained by individuals' conditioning and preconceptions. Wrigley noted a feeling in Army and Navy quarters that the Independent [Air] Force, which effectively started operations in October 1917 and was officially formed in June 1918,⁴⁸ would be the first step towards an air service that would no longer meet its formal *raison d'être*, namely, the support of the other two Services. According to Wrigley, the suspicion was held that the Air Force would carry out its operations without regard to the Navy or Army, or indeed government policy, and would 'arrive from God knows where, drop [its] bombs God knows where, and go off again God knows where'.⁴⁹ He felt obliged to add that such ideas were entirely wrong.

The establishment of the RAF in 1918 following the Smuts Report can be seen as formal acknowledgment of the independent status of air power and, by association, the logic of its evolving doctrine. In particular, as Wrigley had noted, ideas like strategic bombing and air superiority threatened not only a radical change in warfare, but also the primacy of navies and armies.

Equally dramatic notions for the employment of the air weapon emerged shortly after the Great War and were also thoroughly analysed by Wrigley. The catalyst this time was a series of campaigns conducted by the RAF in the Middle East and on the north-west frontier of India. Wrigley's observations were contained in a 'Precis of Lectures on Small Wars', which he compiled with the benefit of the lessons learnt by the RAF from actions in Somaliland in 1920, Iraq in 1923, Waziristan in 1925 and the Sudan in 1928.⁵⁰

In 1921, acting on the advice of Trenchard (by then the RAF's CAS), Winston Churchill as Minister for War and Air had transferred responsibility for defending Imperial interests in Iraq from the Army to the RAF. Churchill's decision was based partly on a wish to save money — Britain had been maintaining a force of 60 000 soldiers in Iraq in 1920 and was still unable to suppress rebellion — and partly on Trenchard's assurance that Imperial authority could be enforced through the strategy of 'Air Control'.⁵¹

As well as exploiting the pervasiveness, speed and striking power of aircraft, Air Control or the 'Air Method' of policing territories relied heavily on the 'moral effect' of a population's fear of aerial bombardment. Before an errant tribe or community was actually bombed, well-defined procedures were followed, with a sequence of warnings being given, often by proclamation dropped from the air. If that procedure did not work, a 'punishment' air raid was carried out.

Air Control amounted to the substitution of air power for land power. The technique was highly successful, drawing praise from such a significant and impartial figure as Sir Henry Dobbs, High Commissioner for Iraq from 1923 to 1929.⁵² Not surprisingly, however, the 'substitution debate', as it became known, also generated the most intense opposition from

naval and military quarters. That did not deter Trenchard, who in 1929 prepared a paper titled 'The Fuller Employment of Air Power in Imperial Defence'. According to Sir John Slessor, the paper 'fairly took the gloves off by declaring 'unequivocally the belief of the Air Staff that real economies with at least no less efficacy could be secured by the substitution of Air Forces for other arms over a very wide field'.⁵³

Wrigley wrote in some detail on the importance of the psychological effect of air power. He established a connection between that effect and Australia's defence needs, noting that because the 'application of [the] Air Force' primarily produced a 'moral' effect, it was important to employ air power quickly.⁵⁴ In turn, that made it essential for squadrons to be part of an organisation which both understood and could exploit that characteristic. That fundamental organisational principle was accompanied by a significant tactical consideration which, like the observation on organisation, also amounted to an article of air power faith. It was essential, Wrigley wrote, to preserve an air force's mobility, not only through an enlightened command and control system but also through force disposition. In a passage reminiscent of Australia's strategy of the 1970s and 1980s of constructing a string of 'bare base' deployment airfields across the north of the continent,⁵⁵ Wrigley's notes identified the need for 'an organisation of landing grounds to any of which air units can be moved by air'. From those landing grounds the 1920s equivalent of Australia's present 'bare base' strategy would then have been followed, with the Air Force units concerned operating from their own resources, resupplied from the air 'until they can be reinforced by other means'.⁵⁶

Two important conclusions can be drawn from Wrigley's notes. First, the fact that they were written almost exclusively in relation to the RAF is indicative of the subordinate mentality which dominated Australian thinking at the time. Second, his work amounts to a *de facto* form of doctrine. Even if that doctrine were neither official nor published, its existence is significant for the RAAF. In Wrigley's observations, each one of which was derived from the unforgiving testing ground of combat, the contemporary maxims of air power can be seen. The terminology may have changed, but concepts such as offensive operations, concentration of force, specialisation, substitution, the importance of establishing air superiority, joint operations, unity of command and independence have not.

AN AIR POWER DEFENCE STRATEGY: THE WILLIAMS PLAN

The RAAF's leaders struggled to translate the theory characterised by Wrigley's work into tangible form. By the middle of 1924 the Air Board was describing the RAAF's condition as 'most unsatisfactory', as it survived on a 'hand to mouth' existence.⁵⁷ Because of limited funds, the Air Force had not even been able to sustain a program of 'curtailed activities'. It had not been possible to replace or maintain existing equipment, let alone establish a development program. Funding had to be increased, the board stated, to satisfy the '*immediate requirements*' for stores and equipment if the RAAF were to maintain even its reduced level of activity.⁵⁸ In a disturbing judgment, the board concluded that the Air Force 'as at present constituted and with its activities curtailed by reason of limited funds' could not be regarded as an 'adequate aerial defence unit' and its efficiency could not be prevented from 'continual deterioration'; indeed, it could not be considered economical to maintain an air force under such conditions.

In his position as acting CAS, Wing Commander Goble had already given Prime Minister S.M. Bruce a startling illustration of the RAAF's unhappy state. Summoned to a meeting of the Council of Defence in May 1924, the CAS reported that the Air Force consisted of 65 officers and 300 men and had 'two machines fit for war'.⁵⁹ Although he recently had been able to raise a formation of 22 aircraft to welcome the fleet to Melbourne, only two of those were 'efficient for warlike services', and they were both seaplanes. In Goble's opinion, a



Air Marshal Sir Richard Williams: Defending the air/sea gap with air power. RHS.

major problem for his Service was the absence of an approved program of development, 'spread over a term of years'.

Goble's plea fell on deaf ears. He consequently prepared a forceful submission on the RAAF's structure for the Air Board's consideration.⁶⁰ Goble stated that given the projected level of funding, the RAAF would be incapable of meeting its commitments. That gloomy outlook was made worse by the fact that the forward estimates assumed the continuation in service of the gift equipment aircraft, which were 'obsolescent even now'. Goble told his colleagues that, even with modest development, the RAAF would be quite inadequate to cope with the demands likely to be made upon it. As the Air Force entered the 1930s it would still be equipped with '1916-17 types of machines', and would be unable to provide mobilisation equipment for any units. Further, the force structure did not meet strategic needs. In the event of an invasion, flying boats would be the first units of the Air Force called into action, yet there was 'no provision whatever' for the establishment of flying boat bases at strategic points along the coast.

Goble concluded by stating that he wished to place on record 'the importance of deciding on a definite policy no matter whether large or small, with regard to the Air Force'. A marginal comment on the particular agenda item by the board's Secretary, P.E. Coleman, provided a depressing footnote both to Goble's submission and the state of air power policy generally. The matter was not referred to the Council of Defence: Coleman recorded that the item had been referred to at an Air Board meeting on 17 September 1924 'but no action was indicated'.

During the time Goble was making those representations, Williams was in the United Kingdom attending staff training courses at Camberley and Andover. On his return in 1925 he resumed command of the RAAF with the rank of air commodore. Before examining Williams' concepts for the employment of the RAAF, a brief comment on his relationship with Goble is essential. Throughout the interwar period the two men alternated as CAS. Each held the post on three separate occasions, Williams for a total of about 14½ years and Goble for about four and a half. That unconventional arrangement appears to have been the result of yet more ill-considered naval and military interference, this time to curb Williams' independence, and to give the RAN an equal voice in RAAF affairs (Goble was a former member of the RNAS). It was an arrangement which almost inevitably fostered an unproductive rivalry.⁶¹ Worse than that, however, it established a tradition of self-interest at the highest levels of the Air Force which subsequently was carried to extremes in World War II. The harm that caused the RAAF's development is one of the major themes of Chapter Three.

In 1925, however, Williams was back in charge. It seems he was disturbed by the lack of direction and governmental interest in the Air Force, for the preparation of a detailed concept of operations became one of his immediate priorities. He took over from Goble as CAS on 10 February 1925 and by 21 April had completed a 'Memorandum Regarding the Air Defence of Australia'.⁶² 'Memorandum' was something of a misnomer, as the document contained 68 pages and a great deal of detail. It discussed such issues as Australia's strategic setting, Japan's air strength, a proposed RAAF posture and force structure, technical and personnel matters, logistics, costs, local aircraft production and training. Two separate development plans were presented, one to take place over four years and the other over nine. If adopted, Williams' plan would have significantly strengthened the RAAF.

The observation has been made that Williams must have realised that his plan was 'so much at variance with the views of the government that there was no chance that it would be implemented or even seriously considered'.⁶³ If that were so, then Williams at least deserves credit for his forceful promotion of air power. It may also have been the case that, fresh from his staff training in England — he was one of the few RAAF officers with that prestigious,

high-level professional qualification — Williams had drafted a blueprint which he believed his Service could carefully pursue over the coming 10 or so years.

Williams' memorandum started by identifying deficiencies in a program the government had approved in August 1924. If fully implemented, that program would have established an air force of 48 landplanes and six seaplanes by 1929. Because of inadequate funding it was, however, doubtful whether that modest target could be achieved; and even if it were many of the aircraft would be 10 or more years old. As Williams pointed out, the result was that while the RAAF now had far greater responsibilities than had the AFC during the Great War, it was likely to find itself with a smaller and less capable force. That situation was bound to worsen as the demands of the Navy and Army grew, along with the need to acquire a modern and effective long-range strike and reconnaissance force and an air superiority capability.

The lack of support for the Air Force was, Williams argued, inconsistent with developments in warfare. In a passage which drew on the inherent qualities of the aeroplane — that is, the determinants of doctrine — he pointed to his Service's unique ability to 'pass over defences, armies and fleets and penetrate into those portions of a country and attack [targets] which previously have been immune from attack'. He then quoted the expert opinions of Marshal Foch, Field Marshal Sir Henry Wilson, Sir Samuel Hoare and Major General Seely to support the proposition that the aircraft was the weapon which would decide future conflicts.⁶⁴

While geography and aircraft performance combined to make the European air strategy of bombing an enemy's homeland impracticable for Australia, air power could still provide the key to national security through control of the sea lines of communication. In a neat argument, Williams suggested that the main justification for maintaining an army and navy was to prevent an enemy from occupying 'part or parts' of the Commonwealth; yet that was an outlook which more than any other demanded the use of aircraft. Command of the sea would be a prerequisite for any invasion. In view of Australia's immense problems of distance, small population and limited infrastructure, the other two Services could never be expected to provide the necessary level of security against invasion.⁶⁵ Aircraft, with their speed, range, and reconnaissance and striking power, provided the obvious response. It was also reasonable to assume, Williams continued, that no enemy could expect to secure a lodgment on the continent without establishing air superiority, and fighter aircraft were the best means of defence against air attack. Each of those points was illustrated with examples and detail. While the CAS was not overtly putting a case for or against the Imperial strategy, it is worth noting that the plan he had presented was related directly to continental defence, and was relevant to protection against either raids or invasion.

Air Commodore Williams saw five main roles for the RAAF: the defeat of enemy aircraft (to establish air superiority in a particular theatre, such as an attempted invasion area); army cooperation; navy cooperation; long-distance reconnaissance over land and sea; and attacks against enemy targets on land and sea. Those roles required three main types of aircraft. Air superiority demanded high-performance fighters; cooperation and long-distance reconnaissance needed machines with 'good speed, ceiling and air endurance', and with some defensive armament; while the attack role required aircraft which could carry bombs and torpedoes. In some instances the aircraft types might be interchangeable.

There was no prevarication about which countries might threaten Australia. In listing the numbers of aircraft the RAAF needed, Williams based his calculations on Japan's naval air capability. Appendix IV of his memorandum showed that by 1928 Japan would be able to operate 130 to 150 aircraft from ships, and that 80 to 100 of those machines would be fighters whose objective would be 'to obtain superiority in the air'.

After taking into account the needs of training, reserve aircraft and the wide dispersion of vital areas to be defended, Williams proposed a force structure of 30 squadrons and 324 aircraft, as shown at Figure 2.2. Special emphasis was placed on the attack force, which was

described as the component of an air force most relevant to Australia's needs. Aircraft were able to strike harder with greater speed and at greater distances than any other force for the same cost. A well-equipped and well-trained strike force would attack the enemy at sea 'long before he reaches the coast', and would also make it possible to engage 'those units not otherwise easily attacked by surface craft, namely, his aircraft carriers and transports'.

FIGURE 2.2

*FORCE STRUCTURE PROPOSED IN 'MEMORANDUM REGARDING THE AIR DEFENCE OF AUSTRALIA', RAAF HQ
21 APRIL 1925*

- Air Superiority, 10 and one third squadrons with 124 landplanes
- Navy Cooperation, six flights with 36 seaplanes or amphibians
- Army Cooperation, six squadrons with 72 landplanes
- Attack, seven and two third squadrons with 92 landplanes

Source: RHS, Memorandum Regarding the Air Defence of Australia, RAAF HQ, 21-4-25.

If implemented over four years, Williams' plan would have involved an average annual expenditure of about 2.5 million pounds, while the nine year program would have averaged 2 million pounds. While that represented a huge increase over the average annual RAAF estimate from 1924/25 to 1928/29 of about 450 000 pounds, it is worth noting that the annual RAN estimate for that period averaged about 2.8 million pounds and the total annual defence vote was about 5 million pounds.⁶⁶

Williams' plan was ignored by the government. The RAAF not only continued to struggle along on constrained budgets, but also remained under threat as attacks from the Navy and Army persisted. As the references cited above from Chauvel, Monash and White indicate, the CAS's program, with its obvious inference that Australia should substitute air power for sea power, plainly did not impress his senior military colleagues.

SPECIALISATION AND SUBSTITUTION: THE SALMOND REPORT

The official support which the RAAF sought came in 1928 when Prime Minister S.M. Bruce invited the RAF to send a senior officer to Australia to report on the RAAF and air defence generally. It speaks volumes for the environment in which Williams and his colleagues were working that the author of that report, Air Marshal Sir John Salmond, was a British rather than an Australian officer and that while Williams' memorandum was ignored, Salmond's report received earnest consideration.

Williams has stated that he welcomed the review, as he realised that any senior RAF officer was bound to recommend additional resources for the RAAF.⁶⁷ Australia's CAS also believed that his government was more likely to listen to 'an authoritative and informed opinion in regard to what is being done in the RAAF' if it came from an English source.⁶⁸ Nevertheless, the fact remains that the review essentially was concerned with the air defence of Australia, and Williams himself was as well, if not better, qualified for that task as any other airman.

Indeed, his 'Memorandum on the Air Defence of Australia' which the government had ignored already existed as a thorough examination of the subject.

Air Marshal Salmond handed down his report on the RAAF and Australian air defence on 20 September 1928. Perhaps not surprisingly, the report turned out to be an emphatic endorsement of air power in the defence of Australia and the Empire. The force structure changes it recommended were 'valued' by the RAAF according to Air Commodore Williams;⁶⁹ and its general thrust largely shaped RAAF development up until World War II. For those reasons, the report must be regarded as a major indicator of doctrinal thinking at that time, even though it took seven years and the increasing likelihood of war with Japan for the government to act on its recommendations.

At the time of Salmond's review, the RAAF's total flying strength consisted of two squadrons, one flight and a training school. Further, each of the squadrons was comprised of two-thirds citizen force (that is, non-professional) personnel. That modest structure stood in wry contrast to the 36-squadron, 966-aircraft armada envisioned in the Air Board policy document of February 1920, and nicely demonstrated the difference between ideas and reality.

The Air Force had of course been battling against considerable odds, as Salmond recognised. The great problems facing a new military Service were acknowledged in the covering letter he sent to the Prime Minister with his report. Salmond first stated that in some aspects his report was critical of the RAAF. Having said that, he then stressed that the defects he had identified were due largely to the immense difficulties which were inseparable from the task of building up an air force from its initial stages and 'without any properly established organisation or basis'.⁷⁰ Those difficulties applied just as much to the development of doctrine as to the acquisition of equipment, training and so on.

As far as doctrine is concerned, the essence of Salmond's review lies in the force structure proposed, the logic which determined that structure, and the emphasis placed on specialisation in the application of air power. Part I of his report dealt with the state of the RAAF, and it was there that the matter of specialisation was raised. Salmond expressed his concern about the low standard of training in the Service. He judged that while pilots were competent on graduation, from then on their air training in gunnery, bombing, photography and fleet and army cooperation was inadequate. Additionally, theoretical instruction was 'extremely elemental'. The training problems were attributed primarily to the government's policy of maintaining the Defence Force on a 'citizen soldier' basis. While the economic reasons for that practice were acknowledged, it was, Salmond argued, unacceptable for an air force. The efficient operation of 'modern war aircraft' could be attained only by constant practice. In particular, the highest skill in the art of 'air fighting, the ability to navigate and bomb accurately, and efficiency in cooperation with other arms, could be obtained only by constant training in a "full-time" permanent unit'.⁷¹

This was a crucial point. The matter of specialisation and high-quality training is central to doctrinal development. Air power doctrine is concerned with the application of military force. If the practitioners of that force are neither well trained nor exposed to the full range of its potential, then they are unlikely to develop advanced or independent concepts of operations. The connection between practice and theory is critical. The need for specialisation and professionalism — that is, permanent forces — was an issue which continued to attract attention as aircraft became more capable, and Salmond's opinion on the subject was raised regularly over the next decade.

Salmond considered that the problems with specialisation and training went beyond the permanent/citizen force issue. While initial training was good, post-graduate training in Australia effectively was non-existent. In its response to Sir John's report, the Air Board agreed that the absence of specialist post-graduate schools was the greatest handicap to the

professional development of military aviation in Australia.⁷² The Defence Committee subsequently acknowledged the problem, and measures which were taken to redress the situation at least in part included placing more units on a permanent basis, sending additional pilots to England for training, and extending the initial flying training course in Australia to 12 months.⁷³ Each of those actions recognised the unsatisfactory consequences of trying to base air power on a largely non-specialist structure.

However, even more action was needed. As Salmond had noted, the discontinuity between theory and practice which affected the RAAF during the 1920s was not confined to flying training. In mid 1928, seven years after achieving independence, the RAAF was still not training its own officers. The only avenue through which a young man was certain of being considered for a commission in the RAAF was to gain selection as an Air Force candidate to the Royal Military College, Duntroon. Having been selected, he was then required to wear an Army uniform and complete exactly the same course of instruction as Army cadets. On graduation he was commissioned into the Army and then seconded to the Air Force. If he proved unsuitable for aviation he was returned to the Army to serve there for 12 years as a commissioned officer.⁷⁴ Those were not attractive conditions for anyone whose main interest was aviation.

Salmond recommended the formation of an RAAF Wing at Duntroon in preference to the other option of sending cadets to the RAF College at Cranwell. The Air Board commended his proposal on grounds of 'sentiment' (by which it presumably meant the desirability of training RAAF officers in Australia) but rejected it on costs. By the board's reckoning, it would have been twice as expensive to train cadets at Duntroon as it would have been to send them to England.⁷⁵ Ultimately, neither option was exploited. In a marginal note to the Air Board Agenda item, the secretary recorded that the 'deterioration in the financial position' had resulted in the Minister withholding his support from the scheme.

The questions of specialisation and force structure were brought together in the recommendations Salmond made for the expansion of the RAAF. In Part I of his report on the state of the Air Force, he had recommended the formation of a number of new units and facilities, including four squadrons and four flights. Only one of the proposed new units was to be operated by part-time personnel, although Salmond accepted that the RAAF's two existing squadrons, Nos 1 and 3, should continue as Citizen Force units. In Salmond's opinion, the structure he had proposed would give Australia a 'balanced, composite force, which should by its potential offensive power offer a serious deterrent to invasion'. If the plan had been implemented, it would have signified a much more professional approach to the use of air power.

The rationale for the proposed force structure was contained in Part II of Salmond's report, which was entitled 'The Employment of the Royal Australian Air Force in the Defence of the Commonwealth', and focused on Australia's strategic circumstances and the forces needed to deal with the most credible contingencies.⁷⁶ Salmond's strategic assessment emphasised the importance to Australia's defence forces of speed, mobility, flexibility and offensive striking power. The starting point for that assessment was an examination of the likely forms of external aggression Australia might have to face. In Salmond's judgment, any attack would be seaborne, but was unlikely to involve either battleships and large aircraft carriers or a large-scale invasion. That left four possible contingencies, each of which came into the category of 'raids': attacks by raiding cruisers, armed merchant vessels or submarines; raids against specific objectives by landing parties; small-scale air attacks from carriers or seaplane tenders; and extensive raids against sea trade.

Those contingencies plainly raised enormous problems for a sparsely populated country with 12 500 miles of coastline and strategic targets separated by the breadth of the continent. Sir John identified two possible responses. The first was to secure vital areas with garrisons and permanent defences, an option he dismissed on the grounds of expense. Instead, he argued,

Australia should employ as its primary defensive weapon 'that arm which possesses the greatest mobility, namely Air Forces'. Where feasible, air power could be supplemented by other means of defence 'as and when their inferior degree of mobility makes them available'.

In terms of the future of national defence and air power doctrine that was a momentous proposal. As a result of its request for an inquiry into the nation's air services, to be conducted at the highest professional level, the government had been advised to *substitute air* power for sea and land power as its prime combat force in the defence of Australia. Salmond of course was fresh from the United Kingdom, where Trenchard, as CAS, had made the 'substitution' debate perhaps the most contentious issue among the three Services in the late 1920s.⁷⁷ Further, Salmond had himself successfully used 'Air Control' as a substitute for land power during his time as a commander in Iraq. The RAAF was familiar with the concept, as indicated in the astute observations of (the then) Squadron Leader Wrigley.⁷⁸

The concept of substitution as proposed by Salmond was based on the inherent characteristics and relative capabilities of the three forms of combat power. While it was feasible — and perhaps desirable — to substitute air power for land and sea power, plainly the reverse was not the case. Substitution was a notion which favoured the development of air forces. It is also a notion which the influential RAF air power analyst Group Captain A.G.B. Vallance suggested in 1988 should be considered as one of five basic tenets of air power employment doctrine for his Service.⁷⁹

Some of the inherent limitations of the aeroplane as a military weapon — such as its inability to hold ground and its impermanence — were tacitly acknowledged in Salmond's support for the retention of some fixed defences, although the point was made that those installations would be 'supplementary to Air Forces where both are available to repel attack'. In the main, however, Australia would be defended against raids by the Air Force carrying out the following operations, of which it alone was capable: long-distance reconnaissance; torpedo and bomb attacks on enemy warships and transports at long distances; anti-submarine patrols; convoy escorts; and observation for long-range artillery fire.

Salmond's strategy reflected significant technical improvements in the capabilities of the air weapon. When the Swinburne Committee had found it difficult in 1919 to identify an independent role for an Australian air service, its members had been strongly influenced by the limited performance of aeroplanes. England and Germany may have carried out strategic bombing raids against each other during World War I, but the distances involved were small. In 1919 there was no question of Australia mounting similar raids with land-based aircraft against likely enemies. While by 1928 long-range bombing attacks by the RAAF against land targets remained a dubious proposition, the passing of a decade had seen marked improvements across the spectrum of aircraft performance, particularly in range and reliability. In 1928, for example, Bert Hinkler had completed the first solo flight from England to Australia; and Charles Kingsford-Smith and C.T.P. Ulm had flown across the Pacific. The capability now existed, at the least, for long-range strike operations against shipping.⁸⁰

Salmond's judgments were not accepted without argument. His report indicated a significant increase in the status and independence of the Air Force, perhaps even to the extent that air operations might assume the leading role in Australian defence planning. That possibility was obvious to the Naval and Military Boards, whose members presented separate responses later that year.⁸¹ The Naval Board couched its paper in terms of the RAAF providing only 'Equipment for the Navy' and 'Equipment for the Army'. Its two-page response amounted to little more than a superficial review of the possible locations and roles of air support units. By contrast, Army's response was thoughtful and detailed, addressing such matters as the firepower of aircraft, cooperation between aircraft and fixed defences, the 'mechanical weapon', anti-aircraft defence, and the place of air warfare in Australia's strategic outlook. While the Military Board's objective clearly was to keep Air subordinate to the other two Services, it identified a number of genuine doctrinal challenges facing the RAAF.



Marshal of the RAF Sir John Salmond (left): Specialisation and substitution. RAF.

The Army got straight to the heart of the matter in its opening paragraph by dismissing the 'main strategical idea' on which Salmond's report was based. According to the Military Board, Salmond's strategic assessment for Australia was based on a 'definite conclusion' that a large-scale invasion was unlikely, and that the defence of Australia therefore resolved itself into the need to protect points of special importance from small-scale raids. That outlook, Army suggested, was not uncommon amongst those whose ideas on defence were 'restricted by considerations of the functions of the particular Service to which they belong'. Thus, Salmond's assessment was said to favour the 'special aptitude' of an air force for quick movement from one point to another. Army acknowledged that particular quality of air power, but then questioned whether it was sufficient in itself. The Military Board went on to suggest — not unreasonably — that Australia's policy of relying on support in the long term from the British fleet was too risky; accordingly, it would be an act of 'delusion' to entrust Australia's defence to 'a few squadrons of aeroplanes, however mobile, acting in conjunction with garrisons of certain ports'. Adequate air forces were important, but only as a part of a defence organisation designed to face the larger threat. The key element in that organisation would continue to be land forces.

In addition to that reservation, Army also expressed concern that the air force structure proposed by Salmond was of such 'comparatively small dimensions' that it could not 'be regarded as meeting any of our strategical problems'. Economic constraints were likely to continue to restrict the size of the Air Force and, in any case, 'the limitations of function imposed by the characteristics of the air arm' were such that the RAAF could only be expected to play a subordinate role in cooperation with the other two Services. Despite that comprehensive dismissal of independent air power, the board generally endorsed Salmond's recommendations as they applied to the RAAF and provided that they did not impinge on the provision for land forces.

Having attempted to lay siege to the policy high ground, the Military Board turned to the matters of mechanisation and the aeroplane's alleged ability to concentrate force. Army accepted mechanisation as a means of increasing fire power and efficiency, but was sceptical about the extent of those benefits and Australia's capacity to support 'mechanical forces'. Board members doubted the capabilities of Australia's production and maintenance facilities, which they believed were inadequate and would inhibit the country's employment of such forces. Their conclusion on that matter bears repeating (not least as a classic example of bureaucratic expression):

Industrial and financial factors must place definite limits upon mechanical forces until finally in all probability it will work out in most cases that a preponderance of armed individuals efficiently trained, organized and commanded will still be the deciding factor.⁸²

The board stated baldly that, given the fighting, administrative and industrial manpower needed to sustain an air force, the fire power it was able to generate was not cost-effective. That was a parochial assertion, unsupported by either cost estimates or operational analysis. It ignored, for example, the fact that seven years previously General Billy Mitchell's aeroplane worth about 5000 pounds had sunk a battleship worth about 5 million pounds; and that at the end of the 1920s it was possible to buy 152 bomber aircraft for the price of a single 10 000 ton cruiser.⁸³ Accepting that Mitchell enjoyed the artificial conditions of a trial, those were still compelling numbers.

An air force's ability to concentrate force through the massive application of fire power has become recognised as one of the most significant qualities of air power; consequently, it is now an integral component of doctrinal thinking. However, it was partly a professed uncertainty over Air's capacity to concentrate force which underpinned the Military Board's doubts about Salmond's concept of operations for defence against raids.

In the Military Board's judgment, the primary strategical aim of any enemy would be the destruction of Australia's armed forces (a questionable, 100-year-old notion which was classical Clausewitz).⁸⁴ That aim could be achieved only by bringing Australian forces to battle in some 'principal geographic place or area for which we should, by reason of its importance in our national life, be compelled to fight with all...our main forces'. While the RAAF might possess the attribute of mobility, its effectiveness against an enemy who had succeeded in getting ashore could not be expected to be decisive, even if its strength was immeasurably greater than that proposed by Salmond. Thus, rather than persist with a coastal defence strategy in which garrisons were supported by air forces, Army argued that priority should be given to mobile land forces, which alone could be concentrated in sufficient force to combat a massed invasion. The Military Board's emphasis on mobile land forces was a curious argument from a Service which, at the time, wanted to set 36 large guns in cement at a cost of 4.8 million pounds to defend Australian ports.⁸⁵

Two other 'inherent' limitations of aircraft which would further inhibit air operations in the coastal defence stratagem were listed. First, the Military Board noted the requirement for reasonably favourable weather. The limitations imposed by that aspect of nature were then extended to night-time, when aircraft were 'completely ineffective', especially against fast warships. Those were reasonable observations, although at the risk of being wise in hindsight, they did seem to demonstrate a somewhat static outlook, especially in their failure to allow for continuing technological advances.

The points raised thus far by the Military Board were all explicit criticisms of the alleged shortcomings of air power and its doctrine. Army's final criticism of the Salmond Report ostensibly was based on costs. In fact, it challenged the doctrinal basis of air power at least as seriously as any of the other points. Despite its differences with Salmond, the Military Board had generally supported the proposed structure for the RAAF. As a substantial part of that structure was for army cooperation, that should not be surprising. Army was concerned more with the *place* and *control* of air power in the defence of Australia than with the size of the RAAF. The board did, however, reject Salmond's recommendation that the RAAF should acquire torpedo bomber aircraft, on the grounds of their high cost.⁸⁶ Interestingly, the Navy also had come out against torpedo bombers because of the purported high capital expenditure involved.⁸⁷

While there will always be intense competition among the Services for limited budgets in peacetime, the opposition to torpedo bombers seemed seriously inconsistent with the Military Board's strategic assessment. Specifically, if, as Army contended, Australia's defence forces should have been structured to deal with the worst possible contingency of a massive invasion, the logical response should have been to promote a force structure which could inflict maximum losses on an invasion fleet at sea. In the late 1920s that meant the use of ships and/or aircraft, not guns fixed in concrete and land-bound soldiers.

Trials conducted by the Royal Navy in 1926 had already demonstrated the effectiveness of torpedo bombers, as evidence cited by Sir John Salmond in his report illustrated:

The...results show that the aeroplane can claim a higher proportion of hits than any other type of torpedo carrier...It should not be assumed...that this sort of attack will be invariably successful, but undoubtedly the menace is great, and, with a large explosive charge in the torpedo and higher performing aeroplanes, this menace will increase.⁸⁸

The Military Board could protest (as it did) that the estimate of the 'menace' was based only on trials and not on experience during active service. Nevertheless, the source was not an airman, but the Commander-in-Chief, Mediterranean Fleet; and his assessment took into account the marked success enjoyed in exercises by the (British) Fleet Air Arm's torpedo bomber units over a lengthy period. The Royal Navy's assessment did not change over the

years. In 1935, following exercises in the North Sea, it was still concluded that 'Aeroplanes are certain to find and locate a hostile fleet... [and] would probably inflict heavy losses'.⁸⁹ Salmond supplemented the evidence from the 1926 trials with advice from the Air Staff that under active service conditions, torpedo bombers might expect a hit rate of 22 per cent.

The cost of establishing a torpedo bomber flight for the RAAF over a three-year period was estimated at 997 300 pounds, a sum which would have provided aircraft and fixed and mobile workshops.⁹⁰ Any later expansion costs would have been proportionately less in view of the 'once only' expenditure for the support facilities. At the same time, the RAN was spending 900 000 pounds buying two submarines from England in a program that John McCarthy has assessed as serving 'no purpose'.⁹¹ Indeed, McCarthy has pointed out that not only was the submarine policy a failure in itself— after six months restricted service in Australian coastal waters the boats were transferred to the Royal Navy in 1931 — but it also inhibited the RAN's rational development, to the extent that in 1933 it was necessary to borrow four destroyers from Britain to overcome a 'critical shortage'. As has also been noted, the Army wanted to spend almost 5 million pounds on fixed guns.

The inconsistency between Army's strategic outlook and the force structure it proposed for the RAAF was striking. It is difficult to avoid the conclusion that the Naval and Military Boards were acting solely from self-interest, fearing that RAAF aircraft would replace capital ships and fixed shore-defence batteries. The influence that kind of action had on Air Force doctrine cannot be measured but, clearly, it would have had an effect, particularly as in this instance torpedo bomber aircraft represented that most fundamental element of air power, deterrence.

The experience of the Salmond review explains a lot about the nature of RAAF thinking. The problems the RAAF has had with the theoretical component of doctrine should be evident from the discussion presented so far in this book. With the notable exceptions of Williams and Wrigley, there is little evidence that RAAF officers were especially active intellectually. The occasional officer published the occasional article or gave an occasional public talk,⁹² but in general the level of comment on theoretical issues was not high.⁹³ As has been pointed out, there were reasons which perhaps partly explained that circumstance: the RAAF was existing in a hostile environment, in which survival rather than philosophy was the issue. None of the foregoing means, however, that all RAAF thinking was indifferent. On the contrary, at the tactical and operational levels of doctrine — the levels involved with the mechanics of fighting, administering and organising — the Air Force almost invariably was at the least competent, and often much better than that. Salmond's review is a case in point. Commenting on the re-equipment and training program proposed by Salmond, *Aircraft* magazine told its readers that 'the report says nothing that has not been said and agreed upon, times without number, by every senior officer of the RAAF for several years past'.⁹⁴ The Air Board made the same point in its response to the report.⁹⁵ Despite the absence of a formal doctrine, the RAAF knew what it needed in material terms. Its problem was convincing the decision makers.

Salmond's judgments were largely accepted but not acted on by the government. Nevertheless, his report laid the groundwork for a significant increase in the status and independence of the RAAF, perhaps even to the extent that air operations might eventually assume the leading role in Australian security planning.

A LEARNING CURVE

If it was difficult to promote Australian air power without clearly articulated ideas, it was impossible to do anything without equipment. As Air Marshal Sir George Jones has observed, there is little point in talking about air power without aeroplanes.⁹⁶ There is a direct link between doctrine and force structure and, therefore, equipment acquisition. The RAAF's

early involvement in the equipment acquisition process gave it the opportunity to demonstrate the practical skills which seemed to be its forte. Additionally, the kinds of equipment a military organisation seeks give an obvious indication of its outlook. Williams and his colleagues found themselves on a learning curve on both counts.

When the RAAF was formed in 1921, all landplanes and a good deal of other equipment came as gifts from the Imperial government. While that may have been generous, it inevitably circumscribed the way in which the Air Force could develop an independent outlook and structure. To some extent that seems to have suited the RAAF's senior officers. As the Air Board stated in late 1928, the introduction into service of the three types of 'gift equipment' aircraft had given the RAAF the opportunity to gain experience and train in 'as many sides of air force operations as possible' until the 'future requirements and possible developments of the Air Force as a whole could be foreseen'.⁹⁷ There appears to be a contradiction between that uncertain attitude, and the knowledge acquired from hard experience in World War I, the doctrine recorded by Wrigley, and the strategic plan developed by Williams. The Air Board's diffidence was perhaps another example of the subordinate mentality and excessive reliance on the RAF which characterised RAAF thinking. That attitude was also apparent when the Air Force first sought to re-equip some of its flying units.

In June 1927 the board requested approval for the purchase of six landplanes for army cooperation work. The aircraft were intended for Nos 1 and 3 Squadrons which, seven years after the establishment of the RAAF, were still operating the obsolete gift equipment aircraft. Air Commodore Williams told the Minister for Defence, Senator Sir Thomas Glasgow, that information received from the British Air Ministry showed the Armstrong Siddeley Atlas to be the best machine available for army cooperation work, and that it had been adopted for RAF army cooperation units.⁹⁸ That most superficial evidence from the United Kingdom was sufficient for both parties, as the Minister approved the request just two days after it was submitted. In fairness to the RAAF, the difficulty in gaining access to timely information in the days before air mail inevitably made the selection process difficult. Nevertheless, the performance was unprofessional and dependent.

A similar procedure was followed to secure ministerial approval for six new light day bombing aircraft three weeks later. The Air Board's minute to Senator Glasgow was notable for its brevity and vagueness. In four sentences it advised that new light day bombers should be purchased as soon as possible, and that the de Havilland DH65 Hound, which was just 'being tried out by the RAF', was likely to be suitable.⁹⁹ Funds for six machines were requested, pending further reports from the Air Ministry. On the strength of that submission, Glasgow approved the expenditure of 40 000 pounds from the Trust Fund, Defence Reserve Aircraft, for 'six new day light bombing landplanes for the re-equipment of one DH9A Flight'.

The delivery of both the Atlas and the Hound was delayed, and a year later the Air Board was obliged again to raise with the Minister the matter of re-equipping its army cooperation units. There were now four British machines which appeared suitable, as in addition to the Atlas and the Hound, the Fairey IIF and the Westland Wapiti were available. Comments on the four types were presented to the Minister. Significantly, in the intervening 12 months, each of the aircraft had been flown by RAAF officers in England, and the reputation of the Atlas had suffered. It was no longer 'the best machine available for army cooperation work'. Instead, it suffered from 'poor performance' and had been 'adversely reported on in general flying qualities' and was 'unsuitable for bombing, etc'.¹⁰⁰

The board outlined for the Minister the basic performance and cost estimates of the four aircraft which 'appear[ed] suitable for our purposes'. On the basis of the information sent from England by the Australian pilots, the purchase of 32 de Havilland Hounds was recommended. The Hound was not only the cheapest, but also 'the latest design', held 'new

records' and had 'the best performance of all types'. On 3 July 1928 the minister approved the expenditure of 150 000 pounds for the re-equipment of Nos 1 and 3 Squadrons. However, in an instructive caveat to his approval, Glasgow stated that he wanted Sir John Salmond's 'views and confirmation as to the suitability of the type recommended' (Salmond was shortly due in Australia to report on the RAAF). Given the board's past performance, Glasgow's caution was understandable. It was also unflattering to the RAAF.

What Salmond said, or whether indeed his opinion was ever sought, was not indicated in the Air Board's records. However, just over a month later, the board found it necessary once again to change its recommendation. In an addition to its original minute, the board told the Minister that it had received further 'detailed information' from the RAAF Liaison Officer in London, Wing Commander W.H. Anderson.¹⁰¹ While Anderson still favoured the Hound, other factors now needed to be taken into consideration. First, the Hound was unlikely to be ordered by the RAF in the modification state favoured by the RAAF. Second, the most recent flight tests indicated that its performance advantage over the Wapiti was less than originally thought. Finally, the Hound was no longer substantially cheaper. For those and several other less important reasons, the Air Board recommended on 2 August that the Wapiti be purchased to re-equip its two composite squadrons.¹⁰² Approval was given on 24 August.

A more professional approach to force development was evident in the period immediately following the release of Sir John Salmond's report. Air Commodore Williams had in fact flagged his wish to modernise the RAAF before Salmond's visit. Despite serious financial restrictions, the favourable political climate following Salmond's visit allowed Williams to proceed, albeit on a limited basis.¹⁰³ The first aircraft the CAS wanted was a replacement for the SE5As which equipped the RAAF's single-seat fighter flight at No. 1 Flying Training School. Those aircraft were not only obsolescent but also had been entirely rebuilt and were considered no longer worth keeping.¹⁰⁴ As approval had already been received for the purchase of Westland Wapitis for Nos 1 and 3 Squadrons (which included fighter flights in their composite structure), the suggestion was made that the FTS fighter flight also should be equipped with the two-seater Wapiti. The Air Board acknowledged that rearming the RAAF with one type of landplane (the Wapiti) '[would do] away with the necessity for training single-seater fighter pilots particularly for those units', but board members believed that the ability to fly and operate single-seater fighters should be part of the training of Permanent Air Force officers. They considered that six single-seat Bristol Bulldogs should be bought for the fighter flight at No. 1 FTS to retain a nucleus of that important skill and capability.

The board had learnt from its unhappy experience during the Atlas/Wapiti/Hound fiasco 12 months previously. It accordingly informed the Minister that the Bulldog had been selected by the RAAF as 'the best single-seater fighter type, after competition with others'. Members also made a point of mentioning that the establishment of a single-seater fighter flight at Point Cook had been included in Sir John Salmond's recommendations. The Minister approved 34 700 pounds for the purchase of the Bulldogs on 31 January 1929.

That more professional approach was taken further in the procurement of the Hawker Demon and the Supermarine Seagull Mk V aircraft. Indeed, the acquisition of those two types showed not only a degree of independence but, for the first time, a distinctively Australian outlook. According to Air Commodore Williams, when the RAAF placed an order for the Demon, it was no longer 'merely a matter of saying we wanted a certain number of the type already in use in the RAF'. Now, Australian standards and operational requirements had to be met. The characteristics of the aircraft and Rolls Royce engines were examined and changes incorporated to make the end products 'suitable to meet our needs'. Modifications were necessary to enable the RAAF's aircraft to be used in a variety of roles,

namely, air combat, army cooperation and bombing. The RAF, on the other hand, used a different aircraft type for each of those roles.¹⁰⁵

The Supermarine (Vickers) Seagull Mk V amphibian aircraft was an exception amongst early RAAF aircraft, as it was built to a general specification issued by RAAF Headquarters, rather than one from the British Air Ministry.¹⁰⁶ Australia's senior military commanders had been looking for a suitable amphibian for almost 10 years, as the Seagull Mk IIIs with which the seaplane carrier HMAS *Albatross* was equipped were obsolescent. It was to the RAAF's credit that, when trials on the Seagull V were conducted at Gibraltar by a crew from the (Royal Navy) Fleet Air Arm, the aircraft was described as being better than any comparable type then in use in the Royal Navy.¹⁰⁷ Substantial numbers of the aircraft, renamed the Walrus, were later ordered for the RAF. The Walrus was the first aircraft introduced into squadron service with the RAF which had a fully retractable main undercarriage, a completely glazed cockpit and an all-metal fuselage. The development of the aircraft at an Australian initiative and to Australian specifications should be seen as an indication of the RAAF's growing sense of self-confidence, as well as its strategic outlook and operational priorities.

The politics of local aircraft production and maintenance during the period under review in this chapter have been covered elsewhere and need no detailed examination here.¹⁰⁸ The intention of the following brief section is simply to demonstrate that the RAAF appreciated the importance of achieving some degree of self-sufficiency in airframe and engine production and major maintenance as an essential element of air power.

Williams and his colleagues on the Air Board had from the outset supported attempts to establish a local aircraft industry. In the comprehensive development program he prepared for the RAAF in April 1925, the CAS had stated that the position of air defence in Australia would not be completely satisfactory until self-sufficiency was attained in the production of aircraft, aero engines and aircraft equipment.¹⁰⁹ He accordingly recommended the implementation of a 'definite program of development' to establish the necessary industries. A major contribution to that objective was made by the establishment of the RAAF Experimental Station at Randwick in 1924, under the direction of Squadron Leader Lawrence Wackett.¹¹⁰ The Experimental Station was a significant initiative, for as a design and development facility it had the potential to give Australia's practitioners of air power considerable control over their tools of trade. Additionally, World War I had demonstrated the importance of the technological edge in air combat. *Aircraft* magazine told its readers the station gave Australia the capability to 'deal with aeronautical problems as they arise'.¹¹¹ Williams continued to support the station, at one stage suggesting that the Wackett Warrigal could become the RAAF's standard training and army cooperation aircraft.¹¹² Regrettably, the Experimental Station was closed in 1929 on the recommendation of Sir John Salmond. Wackett believed Salmond's recommendation was politically motivated by a perceived need to protect the interests of British aircraft manufacturers, an opinion shared by Williams.¹¹³

The importance of constructing proven types was also appreciated. Concurrent with the development of the Warrigal, the Air Board recommended to Minister for Defence Sir Thomas Glasgow the purchase of 12 Avro 504N aircraft, with six to be imported from England and the remainder constructed in Australia. As Williams observed, that program would give 'some [local] firm a chance of showing its capabilities in regard to the manufacture of complete aircraft and be a step towards the establishment of the aircraft industry'.

The RAAF continued to support local production throughout the inter-war years. In a background paper prepared for the Minister almost 10 years later in May 1936, Air Vice-Marshal Williams strongly argued the strategic need for a self-reliant aircraft industry. Australia had experienced great difficulties in getting aircraft from England during the preceding 12 to 18 months, which prompted Williams to press yet again for an indigenous production capability. He stated that there were no insuperable difficulties in attaining self-

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sufficiency, with the possible exception of getting certain raw materials at the start of any program. The CAS argued that Australia could, and should, achieve self-reliance in air defence, an objective which probably was not feasible for the Army or Navy.¹¹⁴ Regrettably, the same positive outlook towards developing a local aircraft industry was not demonstrated by the other two Services. As John McCarthy has noted, in the early 1920s 'the question of local manufacture appears to have been submerged in the attempt of the army and navy to control the air force'.¹¹⁵ It was not until 1937 that an effective local capability was established.¹¹⁶

EDUCATION AND SPECIALISATION

If the RAAF was ever going to overcome negative attitudes towards air power, a great deal of education and promotion of ideas was needed, not only within the armed forces but also at official and public levels. For that process to be sound, it had to be based on a thorough understanding of the fundamentals of air power. Education and the development of doctrine within the Air Force were the keys. Here, numerous difficulties existed.

In the first place, the RAAF's intellectual development was constrained by the small size of its officer corps. In 1930 the Air Force's General Duties (that is, aircrew) Branch of the Permanent Air Force comprised only 66 members, of whom nine had completed staff training with the RAF. By September 1935 the total had risen to 88, with 16 staff course graduates.¹¹⁷ That was a very small base from which to develop the Service's intellectual foundations, particularly in view of the RAAF's understandable preoccupation with simply surviving its day-to-day challenges. The problem was, however, deeper than that.

The Air Force did not especially value intellectual achievement. As has been noted, there is little evidence of RAAF officers contributing to scholarly journals. The tertiary qualifications of Permanent Air Force officers were not always listed in that most important publication for an ambitious officer, *The Air Force List* (the 'stud' book, which lists all officers in order of seniority), but decorations and military qualifications invariably were. Squadron Leader J.P.J. McCauley was one of the few General Duties officers of the inter-war period to complete a degree, and yet, because of his reputation as a mediocre pilot, drew only supercilious criticism from some colleagues who 'valued little beyond flying ability'.¹¹⁸ Commenting on RAAF promotion practices a half a century later, Air Marshals S.D. Evans and J.W. Newham suggested that the RAAF has always suffered from a tendency to evaluate its officers primarily on their flying and technical skills.¹¹⁹

Some of the shortcomings of using the Royal Military College at Duntroon to train RAAF officers have already been mentioned. In addition to those problems, RMC provided no education in air power theory. By the 1930s, the best Duntroon could offer was a reference to 'Imperial air routes' in its course on 'Imperial Military Geography'.¹²⁰ One distinguished RMC graduate, Air Marshal Sir Valston Hancock, 'cannot remember any instance in which a formal attempt was made to teach us the doctrine of Airpower'.¹²¹ Hancock's only exposure to the subject came when he won a prize for an essay on a subject of his own choice, which happened to relate to flying.

Like most RAAF activities, air power education was largely dependent on the RAF. Through an arrangement between the British and Australian governments, provision had been made annually since 1924 for RAAF officers to attend the RAF Staff College course at Andover.¹²² Later that was extended to include the Imperial Defence College course. The utility of the British training has been questioned. Writing in September 1934 on his experiences at the Imperial Defence College the preceding year, Air Commodore Williams expressed his dismay that at no time during the course were views sought from the Dominion Liaison Officers stationed in London. Williams believed that situation reflected a general level of ignorance about defence matters in the Dominions on the part of the college staff.¹²³ Forty years later

Williams still held reservations about the college, in particular recalling with disappointment some of the exercises and visits.¹²⁴ Similar concern about the RAF Staff College course at Andover was raised by Squadron Leader J.E. Hewitt, a student in 1934.¹²⁵ Because of those kinds of criticisms, the suggestion has been made that the RAF training 'had a doubtful application to Australian defence'.¹²⁶

In an immediate sense that may have been true. Exercises set in Europe were of limited interest to Australians. However, using Air Vice-Marshal Wrigley's experience and notebooks as a guide, the RAF Staff College provided a comprehensive and first-class education in the theory and practice of air power. Students were exposed to the full range of concepts and operational techniques, in an intensive study program.¹²⁷ They also benefited from the opportunity to discuss air power first hand with some of the subject's most notable thinkers. Wrigley's course in 1927-28 received presentations from, among others, Air Marshal Sir John Salmond, Air Vice-Marshal H.R.M. Brooke-Popham, Air Vice-Marshal J.M. Steel, Sir Maurice Hankey, Air Commodore E. Ludlow-Hewitt, Colonel J.F.C. Fuller, Wing Commander T. Leigh-Mallory, Wing Commander D.C.S. Evill, Squadron Leader R. Saundby and Flight Lieutenant E.J. Kingston-McCloughry.¹²⁸ With the possible exception of Trenchard and Slessor, those were perhaps the most influential air power scholars in the Commonwealth.

Wrigley's work shows that, while issues invariably were presented in the context of the RAF, the main concepts had general relevance. Indeed, if the RAAF criticisms of the British education illustrated anything, it was an inability or unwillingness on the part of the critics to translate those concepts into an Australian setting. Williams' complaints in fact seem perverse. His major paper from 1925 on the RAAF's development was based on an admirable understanding of the principles of air power as they applied to Australia.

In addition to staff training, other steps were taken to promote air power and develop doctrine. Officer training generally assumed a more professional character in the mid 1930s, although it remained almost totally dependent on the RAF. Before 1935 the approach to post-graduate training was unstructured. Officers were sent overseas for specialist courses 'at irregular intervals, depending on circumstances at the time'.¹²⁹ As the RAAF grew it became necessary to enlarge the scope of the training in order to stay abreast of the technical and operational methods associated with new equipment. Consequently, a proposal to place training onto an expanded and more modern footing was endorsed by Defence Minister Archdale Parkhill in August 1935. Several important new courses were arranged through the RAF, including expanded training on armaments, signals, photography, navigation and engineering.

Another interesting initiative was an exercise conducted by the Office of the Chief of the Air Staff in September 1935, in which flying units were required to examine the relevance of RAAF tactics to the local defence of Australia. The initiative usefully illustrates the relationship between tactics and doctrinal concepts, as well as RAAF thinking at the time. The exercise was outlined in a letter sent on behalf of the CAS by Squadron Leader J.P.J. McCauley.¹³⁰ Units were required to submit detailed papers addressing 'the different aspects of the tactical employment of air forces in the local defence of Australia', focusing on their own roles. Thus, No. 101 Flight was required to prepare a paper on naval cooperation, No. 1 FTS (Seaplane Squadron) on coast reconnaissance, No. 1 FTS (Fighter Squadron) on fighting, No. 1 Squadron on striking, and No. 3 Squadron on army cooperation. Once that process had been completed, a series of Air Staff Memoranda was to be compiled, which when approved by the Air Board would be issued 'for the information and guidance of all concerned'. Thus, while much of the exercise was going to be completed by junior officers, the intention was to use its findings officially.

Five weeks later the exercise was expanded when McCauley sent another letter to the same units instructing all officers below the rank of flight lieutenant to write a paper on the topic of 'The Manner in which Air Forces Could Cooperate with the Fixed Defences to Protect the

Vital Areas of Australia from Enemy Raids'. Three essays on that topic remain attached to McCauley's original file.¹³¹ Although prepared by junior officers, they provide a useful insight into the RAAF's attitude to doctrinal development in the mid 1930s. Additionally, as was mentioned above, it was the CAS's intention to include the essays in the formal process of determining tactics for the local defence of Australia.

The essay submitted by Flying Officer F. Headlam — a future member of the Air Board — attracted the most approval. If Headlam's paper represented a vested interest, it nonetheless did so cogently. It also displayed an ability to think outside the boundaries of conventional opinion. One of the paper's main conclusions was particularly noteworthy, especially in the context of Australian defence planning in the late 1930s. For many years there has been a popular belief that Australia could not be defended against a substantial threat; it was that perception which underpinned the Imperial and American alliances.¹³² Headlam challenged that outlook. He agreed that before the development of aviation the problem of defending Australia's 'widely scattered areas' was almost 'insuperable', since the nation's resources were insufficient to support the necessary naval forces. The mobility of modern aircraft had, however, to a great extent solved that problem, and it was even possible that with 'strong air forces, naval forces (including submarines), and fixed defences, Australia may be made practically invulnerable'. Headlam had, in effect, defined the 'anti-lodgment' concept which has been a persistent feature of RAAF strategic thinking.¹³³

Two final aspects of the exercise deserve mention. The first again illustrates the very limited pool of specialist opinion the RAAF was able to draw on in those years for its doctrinal development. For the essay on 'The Cooperation of Air Forces with Fixed Defences in the Repelling of Raids', No. 1 FTS could muster only two contributors. The second aspect emerged in a letter signed by Squadron Leader McCauley on behalf of the CAS, commenting on the essays. McCauley did not miss the opportunity to draw to his readers' attention one of the fundamental tenets of air power:

Some officers appear to hold the view that air superiority can best be ensured by air fighting; whereas in fact, in the circumstances of the defence of a vital area against a raid, air superiority can best be assured by bombing the enemy's base whether the base has been organized in a ship or on land.¹³⁴

Concurrent with better education, the RAAF's leaders persisted with their efforts to increase the specialisation (and therefore, professionalism) within their force, a need which had been identified by Sir John Salmond in 1928. In August 1935 the Secretary to the Air Board, Mr P.E. Coleman, had prepared a paper on the continuing problem of the balance between regulars and reservists in a highly technical Service.¹³⁵ Coleman's main argument was that in such a Service, training and specialisation were paramount. He contended that in a navy or army an efficient commanding officer could get results from 'numbers of persons under him who obey his orders', as the subordinates were more or less 'efficient machines themselves'; but by contrast, in an air force, every pilot in charge of an aircraft had to be trained and practised to 'act on his own initiative under all circumstances'. Coleman's point was that the RAAF should be based primarily on permanent rather than citizen squadrons. (His remarks are also interesting in the context of the psychology of air forces as opposed to armies and navies.)

Coleman took up the matter again four years later when, at the direction of the Air Board, he wrote to the Defence Secretary in September 1939 to advise him of the RAAF's intention to restructure its cadre squadrons. Those units comprised one flight of permanent staff and two of citizen staff, with the three flights all operating the same aircraft in the same roles.¹³⁶ The justification for the Air Board's proposal was the inability of citizen force crews to 'reach and maintain the required standard in reconnaissance duties to seaward' following the introduction into service of the Avro Anson. Because of that failing, the potential of Anson aircraft in the general reconnaissance role was not being fully exploited; accordingly, the Air

Board had decided to equip the cadre units with a mix of Anson and Demon aircraft, with the more advanced Ansons to be flown only by regular aircrew. The decision was a significant step in a more professional approach to the employment of air power.

Coleman reminded the Defence Secretary of Sir John Salmond's recommendation that a modern air force should be based on permanent personnel.¹³⁷ Salmond believed that modern military aircraft represented the highest potential form of combat power. The index of that power was found in the 'number of machines and the degree of skill of the pilot or crew'. Regardless of how good a machine might be, it would be wasted in unskilled hands. In Salmond's opinion, the efficient handling of 'modern war aircraft' could be attained only by constant practice, that is, by permanent forces. Coleman noted that Salmond's assessment had recently been endorsed by a Defence sub-committee appointed in 1936 to report on the role of the citizen force, aero clubs and civil aviation in air defence. That sub-committee had examined, *inter alia*, the competence of citizen pilots in the RAAF's nine roles, namely: cooperation with fixed defences, general purpose duties, general reconnaissance, fleet cooperation, flying boat operations, fighter/bomber tasks, bombing, fighting, and army cooperation. In the sub-committee's opinion, the skill requirements for military aviation were such that citizen forces should be used on a long-term basis only in general purpose units.

Having provided the background, Coleman returned to the Air Board's proposal for restructuring the five cadre squadrons. In each of those squadrons, 'A' Flight, which was manned by permanent personnel, would be equipped with Ansons and would be tasked with the full range of general reconnaissance duties, while 'B' and 'C' Flights, which were the citizen force components, would be given single-engine Demons for the supposedly less demanding role of cooperation with fixed defences. The proposed reallocation of aircraft was interesting. In order to make the necessary Demon aircraft available for reallocation to the citizen force pilots, No. 1 (Bomber) Squadron — which was staffed by permanent pilots — was to have its Demons replaced by Ansons, 'as a preliminary step to the equipment of this squadron with a new type of twin-engined Bomber Reconnaissance aircraft'.¹³⁸

A brief minute on the same file from the Minister for Defence, Archdale Parkhill, shrewdly identified the implications of the Air Board's plan. Under the cadre squadrons' existing organisation, the permanent force pilots were primarily responsible for cooperation with Army coastal batteries. Parkhill noted that the proposal for the citizen force pilots to assume that role was contrary to Defence Committee Minute No. 45/1936, 'whereunder it was insisted by the Chief of the General Staff that the portion of the [cadre squadrons] required for cooperation with the Fixed Coast Defence batteries should be on a permanent basis'.¹³⁹

CGS's insistence on retaining the permanent RAAF forces for cooperation with his fixed batteries was understandable. If it is accepted that the permanent forces were the more efficient — as was overwhelmingly stated by specialist opinion — he would have been doing Army a disservice to have argued otherwise. From the Air Force perspective, however, the reorganisation would have significantly enhanced its capacity for the kinds of operations favoured by the advocates of 'pure' air power, in this case independent strike and reconnaissance. The permanent flights of the cadre squadrons would have been better placed for those roles once the new organisation was in place, while No. 1 Squadron would have been far more effective in its primary task of bombing when it exchanged its single-engine, obsolescent Demons for the twin-engine, more modern (albeit scarcely front line) Ansons.

HANKEY AND ELLINGTON: SUBSTITUTION AND 'UBIQUITY OF PURPOSE'

The tide began to turn for the RAAF in the mid 1930s. That change of circumstance came not from the force of ideas, but rather from the increasing threat of Japan and the emerging

danger in Europe. In response to the deteriorating international situation, government attention began to focus on the structure and disposition of the defence forces. Funding to the military was increased substantially following the cutbacks of the Depression years. The 1932-33 appropriation of 3.2 million pounds was boosted to 4.1 million pounds in 1933-34 and 5.5 million pounds in 1934-35; while the forward estimates for the succeeding two financial years were increased to a 'record sum' of 8.8 million pounds.¹⁴⁰

Development plans for each of the Services were reviewed. In the case of the Air Force, it was decided to reactivate Sir John Salmond's plan of 1928, suitably modified for the passage of eight years. The revised plan, which was developed in consultation with the Naval and General Staffs, was intended to provide 'balanced forces'.¹⁴¹ Three main objectives were identified for the RAAF: cooperation with the sea and land forces, both fixed and mobile; coast and general reconnaissance and the protection of shipping; and the direct attack of enemy raiding forces and the defeat of enemy aircraft. An establishment of 17 squadrons and 198 aircraft was considered adequate to meet those objectives (see Figure 2.3). The predominance of attack and fighter aircraft meant that, yet again, the RAAF's proposed structure contradicted the official doctrine that the main purpose of air power was to support land and sea power.

FIGURE 2.3

*FORCE STRUCTURE PROPOSED BY AIR FORCE POLICY
FOR FURTHER DEVELOPMENT
1935*

- Local Air Defence, three fighter or fighter/bomber squadrons
- Navy Cooperation, one squadron
- Coast Reconnaissance and Protection of Shipping, four twin-engine landplane squadrons and one flying boat squadron
- Cooperation with Fixed Defences, five squadrons
- Cooperation with Field Army, three squadrons

Source: AA, CRS A5954, Box 910, Council of Defence Papers 1936, Program for Development of the Air Force, July 1935; and CRS A5954, Box 877, Air Force, Air Defence Policy, 27-8-35.

The concepts of control of the air, substitution and independent strike implicit in the 17-squadron plan had in fact been given official prominence just over a year previously by the Secretary to the Imperial Defence Committee (IDC), Sir Maurice Hankey. During a visit to Australia in October/November 1934, Hankey had suggested that 'the defence of Australian interests might easily require the cooperation of Air Forces, whether with or without military forces, in the first line of Australian defence', and that there were now 'special reasons' for the RAAF to be 'so organised as to enable a force to be sent abroad in an emergency'.¹⁴² He was particularly keen for the RAAF to be capable of quickly reinforcing 'one or other of the strong points on the eastern [Imperial] route — Australia's first line of defence'. Singapore was mentioned as a likely destination. Hankey envisaged the size of an RAAF deployment force as 'at least one squadron'. Whatever size it may have turned out to be, that force would have been neither imposing nor significant. However, the proposal was. One of the most

influential men in the Imperial defence organisation was arguing that the substitution of Australian air power for sea or land power was a legitimate exercise. The first call of Empire thus might be on the RAAF rather than the RAN or the Army. In the event, that was precisely what happened in 1940. When the weakness of the Singapore strategy was exposed by the Royal Navy's inability to deploy a fleet to counter Japanese aggression, the RAAF was directed to send three squadrons of aircraft to the island fortress.¹⁴³

The Secretary of the Defence Committee, Mr F. Shedden, picked up Hankey's analysis in a note he prepared for the Minister for Defence.¹⁴⁴ Shedden advised Parkhill that the RAAF offered Australia 'potentialities for ultimate security that are not possessed by the other Services'. The Navy was too dependent on the British fleet, without which it would need land and air support; while if control of the sea were lost the Army could be outnumbered by an enemy with access to overseas resources. Through air superiority, however, the RAAF could 'prevent a landing, or defeat it before it had the opportunity to develop'. Additionally, as the performance of aircraft continued to improve, the Air Force, 'by reason of its great mobility and striking power', would be able to 'render succour to threatened parts of the first line with greater speed than would be forthcoming from the Army'.

Air power as a substitute for the other forms of combat power began to attract even more impressive support in the wake of the endorsements from Hankey and Shedden. Defence Minister Parkhill stated in a major speech in June 1936 that the RAAF's organisation provided not only for cooperation with the Navy and Army, but also for the 'exercise of the independent role which it may be called upon to assume'.¹⁴⁵ A year later Prime Minister J.A. Lyons endorsed that concept in a speech made in Parliament on Australian defence policy. Lyons first confirmed that Australia's security ultimately depended on the 'command of sea communications' and that the Army was supplementary to Empire sea power as the first line of Australia's defence against invasion. However, he then defined the Air Force's role in terms which unquestionably raised its strategic significance and status:

Supplementary to Empire sea power as the first line of Australia's defence against invasion, and since sea power cannot provide a complete defence against raids, the Air Force organisation, which is being developed in accordance with the revised Salmond Scheme, should provide for air forces adequate for close cooperation with the other Services and as a striking force in whatever role it may be required to perform.¹⁴⁶

Hankey's notion of substituting the Air Force for the Navy and Army was of course wedded to his commitment to Imperial defence, with the 'substitute' RAAF force to be employed somewhere along the Imperial eastern line of communication. Because the Australian government shared that commitment, a copy of the RAAF development plan was sent to London, where High Commissioner Stanley Bruce passed it on for comment to the RAF's Chief of the Air Staff, Sir Edward Ellington, early in 1936. As usual, rarely if ever was anything done without first consulting Britain.

While generally supporting the program, Ellington felt obliged to sound a plainly heartfelt doctrinal warning. He acknowledged the economic realities which meant it was likely that the RAAF would always operate under financial limitations, within which 'must be compressed the requirements in aircraft for all military purposes'. That led to Sir Edward's concern. Any avoidable specialisation of aircraft 'for roles ancillary to sea and land forces' was 'to be deprecated if, by such specialisation, aircraft [were] rendered incapable of efficient work on purely air operations'. It was vital, Ellington continued, to bear in mind the 'necessity of producing an offensive air effort comparable with that which any potential enemy can dispose of. He then came to the nub of his (possibly gratuitous) didactic passage:

To that end ubiquity of purpose, as opposed to specialisation in type and duty, has become an end in itself governing every aspect of organisation from the selection of aircraft types to the training of personnel.¹⁴⁷

Ellington concluded by commenting that he had no doubt that those considerations would be 'continuously kept to the fore' when decisions were made on the organisation of units and the selection of aircraft.

The Air Board responded to Ellington's comments through its secretary, Mr P.E. Coleman. In a letter to the Secretary to the Department of Defence, Coleman advised that the board was 'fully seized with the necessity of avoiding specialisation of units particularly in a force of the size of the RAAF, or of doing anything which would preclude the possibility of making the greatest use of them in war'. The examples of the coast reconnaissance, cadre and army cooperation squadrons were cited. It was the RAAF's intention, Coleman stated, to rename the coast reconnaissance units as general reconnaissance squadrons; and for their organisation and training to be amended so that they could be used for all types of reconnaissance, whether over sea or land; and for bombing by day or night either at sea or on land. The cadre squadrons (a mixture of permanent and citizen force personnel), although primarily intended for local defence in cooperation with fixed defences, were to be organised and trained on the lines of general purpose squadrons, and would be deployed outside their local area if necessary. Even the army cooperation squadrons, which were more specialised than most other units, were to be trained for the secondary roles of 'fighting and bombing' so that, if the need arose, they could be used in the main air offensive. Ellington had no cause for complaint with the flexibility of the organisation envisaged by the Air Board in 1936.

The Air Force would have been unwise to have adopted any other attitude. The concept of the 'general purpose' aircraft offered perhaps the best chance for the RAAF to develop a force which, while able to meet its prime commitment to the Navy and Army, was also capable of pursuing the doctrinal objectives of an independent air force. Those objectives became more realistic as aircraft with a reasonable general purpose performance, such as the Anson, the Blenheim and the Hudson, became available in the mid to late 1930s.

That did not mark the end of Ellington's association with the RAAF. Ten years after the Bruce government invited Air Marshal Sir John Salmond to report on the RAAF, the Lyons government extended a similar invitation to Ellington, who by then was Inspector-General of the RAF. Ellington's report was handed down on 16 July 1938 and is best remembered for its criticism of the RAAF's accident record, which in turn led to the replacement of Air Vice-Marshal Williams as CAS.¹⁴⁸ Williams was effectively banished overseas until the end of World War II, first to England and then America. In retrospect, that banishment might be seen as having had the most harmful consequences for the RAAF's doctrinal development. With Williams off the scene, the Air Force was riven by a disgraceful dispute between its two most senior officers in the South West Pacific theatre, Air Vice-Marshal Jones and Bostock. John Robertson has suggested that the two 'were so preoccupied with their struggle that they had no time to seek to develop a strategic doctrine for the RAAF'.¹⁴⁹

That was in the future. Regarding the RAAF's development, Ellington made some pointed observations on the principles which he felt should be observed in determining a concept of operations. Those observations were quite consistent with the comments he had made in 1936 on the RAAF's proposed development plan. As he had done two years previously, Ellington stressed the need for the RAAF to give 'due weight to the claims of ubiquity of purpose' when assessing the organisation of units and the selection of aircraft. In particular, he considered that the specialisation of aircraft for units 'ancillary to sea and land forces' was unacceptable if it reduced the effectiveness of those aircraft in 'purely air operations'.¹⁵⁰ Ellington considered that on paper the striking power of the RAAF seemed rather weak, but as long as the cooperation squadron aircraft could be used as bombers, then the 'want may [be] more apparent than real'.



Marshal of the RAF Sir Edward Ellington: Ubiquity of purpose. RAF.

Chapter Two

PREPARING FOR WAR

Ellington's comments coincided with a major change in Australia's defence outlook. At the time his report was received, Australia's familial relationship with Great Britain and its dependence on all things British was in the process of fundamental change. The catalyst for that change was the Munich crisis of September 1938, after which Australia's defence planners started to look for support from the new world rather than the old. In the wake of that crisis, the RAAF realised with considerable alarm that its supplies of aircraft from the United Kingdom could be cut off suddenly and entirely.¹⁵¹ Following discussions between the Minister for Defence and the chiefs of staff, the RAAF was directed to consider alternative sources of supply. Logically, the Air Board turned to the United States. Board members were in fact already concerned about a delay in the delivery from England of 90 Beauforts which were needed for the general reconnaissance role. An order for 50 Lockheed Hudsons accordingly was placed with the United States as a safeguard against either continuing slippages in the Beaufort program or, indeed, Britain's inability to provide any aircraft at all.

On the eve of world war the RAAF's closest and most important professional relationship was about to undergo a profound change. As had been the case with most of the significant occurrences which affected the Air Force in the period between the wars, that change came not from the force of ideas but from a reaction to external events.

If only one phrase were permitted to describe the RAAF's thinking during the inter-war years, it would be 'dependent and immature'. Yet if concepts of air power doctrine had been neither formalised nor forcefully presented, they were undoubtedly appreciated within the Air Force. Further, the argument could always be put that any attempt by Williams and his colleagues to press their case too strongly might only have intensified the persistent objections raised by the Navy and Army to a separate Air Force and provoked even more peremptory treatment.

As it was, the kinds of ideas which constitute doctrine and which had been embraced by the RAAF did more than define organisational objectives, practices and structure. To a considerable extent they challenged the dominance of the Navy and Army. Thus, while doctrinal notions emerged which enjoyed the support of the other Services — for example, the importance of offensive operations and establishing air superiority, maintaining a balanced force, and specialisation — others such as substitution, ubiquity of purpose and independent strike operations clearly had implications beyond their contribution to the effectiveness of the RAAF. While the latter three undoubtedly were valid concepts for the employment of air power, they also were particularly useful for a junior Service trying to establish an independent role for itself in an unfriendly environment.

One final observation on the nature of air power doctrine in Australia during the period under review is warranted. Throughout those years, there was a persistent contradiction in the attitude of the Navy and Army to the employment of air power. On the one hand, the Naval and Military Boards generally mounted the most stubborn opposition to any proposal to expand the RAAF's roles, independence or funding; yet on the other hand, they periodically made extravagant bids for increases to the RAAF's force structure. Their apparent belief that, should those increases have been made, the Air Force could then have been constrained to the army and navy cooperation roles, was indicative of a confused understanding of air power. RAAF thinking, by contrast, had progressed well beyond those outdated notions.

At the start of World War II the RAAF consisted of 12 squadrons, although two of those units were formed in nucleus only and four were citizen force squadrons. While that may not have been an especially impressive order of battle, the mere fact that the RAAF still existed as an independent Service represented a considerable achievement. It also represented tacit

endorsement of the basic principles, concepts of operations and capabilities which the RAAF had pursued, albeit obliquely, with diffidence and against a great deal of opposition, from 1921 to 1938.

NOTES TO CHAPTER TWO

- 1 For details of that strategy, see McCarthy, *Australia and Imperial Defence 1918-1939*, *passim*.
- 2 See the official history, Cutlack, *The Australian Flying Corps*.
- 3 AA, CRS A5954, Box 785. qv Coulthard-Clark, *The Third Brother*, pp 1-12.
- 4 Swinburne was the Chairman of the Defence Board of Business Administration. For more comment on Legge's involvement in the establishment of air services in Australia, see Coulthard-Clark, *No Australian Need Apply*, pp 178-83.
- 5 AA, CRS A5954, Box 785.
- 6 AA, CRS A2717/XM, Vol 1, Folder 5.
- 7 AA, CRS A5954, Box 785.
- 8 *loc. cit.*
- 9 Australian Defence Studies Centre (ADSC), Report of Admiral of the Fleet, Viscount Jellicoe of Scapa, on Naval Mission to Australia, May-August 1919.
- 10 AA, CRS A5954, Box 785.
- 11 The development of the USAAF is the obvious example. For detail on the evolution of USAAF doctrine, see Futrell, *Ideas, Concepts, Doctrine: A History of Basic Thinking in the United States Air Force, 1907—1964* and USAF Historical Division, *The Development of Air Doctrine in the Army Air Arm, 1917—1941*.
- 12 AA, CRS A1606, Item D15/1.
- 13 That assessment is supported by Williams' description of the selection process for the gift aircraft: see Williams, *These Are Facts*, pp 117-20. qv Coulthard-Clark, *The Third Brother*, pp 159-62.
- 14 See McCarthy, *op. cit.*, esp. pp 44—63.
- 15 ADSC, Imperial Conference 1923, Summary of Proceedings, 27-3-24.
- 16 ADSC, Agenda and Summary of Proceedings, Imperial Conferences 1903-1937.
- 17 See AA, CRS A5954, Boxes 787 and 1083.
- 18 AA, CRS A5954, Box 786. By 1929 there were also about 100 citizen force officers.
- 19 Air Marshal Sir George Jones, Interview, Melbourne, 31-10-89.
- 20 AA, CRS A5954, Box 786.
- 21 *Aircraft*, 1-8-31, pp 14-15.
- 22 AA, CRS A5954, Box 787.
- 23 *Aircraft*, 31-3-25.
- 24 AA, CRS A5954, Box 787. At the time, Chauvel was CGS, while White was his predecessor. Monash had been the Army's most notable commander in World War I.
- 25 RAAF Museum (RM), Williams Papers, Letter, Williams to Drakeford, 2-7-43 (Edward Theodore was the Treasurer).
- 26 Williams, *op. cit.*, pp 198-200, and in the Foreword, Department of Air, *The Golden Years*, p xi. qv Coulthard-Clark, *The Third Brother*, pp 72-5.
- 27 See Stephens & O'Loughlin (eds), *The Decisive Factor: Air Power Doctrine by Air Vice-Marshal H.N. Wrigley*.
- 28 Wrigley, *The Battle Below*, and 'History of the RAAF', in *Royal Air Force Quarterly*, Vol 6, No 3, July 1935.
- 29 RM, Ace No 7090, *Wrigley Notebooks*.
- 30 See Stephens & O'Loughlin, *op. cit.*, p 29.
- 31 In 1989 the CAS, Air Marshal R.G. Funnell, established the RAAF Air Power Studies Centre in Canberra to develop, *inter alia*, Australian doctrine.
- 32 RM, Ace No 7089, *Wrigley Notebooks*.
- 33 RM, Ace No 7091, *Wrigley Notebooks*.
- 34 See Cooper, *The Birth of Independent Air Power*, pp 71-3. For the favourable official view of Trenchard's policy, see Raleigh & Jones, *The War in the Air*, Vol VI, pp 552-6.
- 35 Cooper, *op. cit.*, p 73.
- 36 RFC losses at Arras were so high that April 1917 became known as 'Bloody April'. See Raleigh & Jones, *op. cit.*, Vol III, pp 334-79.
- 37 Sykes, *From Many Angles*, London, 1942, pp 219-21.

Chapter Two

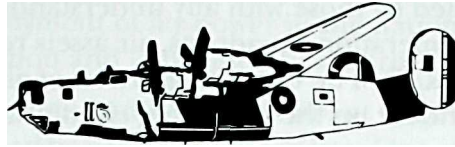
- 38 RM, Ace No 7091, *Wrigley Notebooks*.
- 39 RM, Ace Nos 7089-7091, *Wrigley Notebooks*.
- 40 RM, Ace No 7090, *Wrigley Notebooks*.
- 41 RM, Ace No 7091, *Wrigley Notebooks*.
- 42 Boyle, *Trmchard*, pp 229-38.
- 43 Hancock, *Smuts*, Vol 1, Cambridge, 1962, pp 438-42. It is noteworthy that, during a discussion in the Council of Defence on the independence of the RAAF 12 years later, Prime Minister Scullin 'intimated that, on advice he had received from abroad, Britain had saved millions of dollars by the creation of a separate Air Force'. AA, CRS A5954, Box 762.
- 44 Cooper, op. cit., pp 97-107.
- 45 RM, Ace No 7091, *Wrigley Notebooks*.
- 46 RM, Ace No 7090, *Wrigley Notebooks*.
- 47 See Clausewitz, *On War*, pp 122-34.
- 48 The reference is to the Independent Force, not the RAF which was formed in April 1918. The Independent Force was established specifically for strategic bombing against Germany. While it was not officially formed until June 1918, it effectively started operations in October 1917 as the 41st Wing, based at Nancy in France. See Raleigh & Jones, op. cit., pp 118-74.
- 49 RM, Ace No 7090, *Wrigley Notebooks*.
- 50 RM, Ace No 7089 and 7091, *Wrigley Notebooks*.
- 51 Slessor, *The Central Blue*, pp 45-75. In 1921 Iraq was garrisoned by 33 Imperial battalions costing 20 000 000 pounds a year. They were replaced by five RAF squadrons, without any army forces in support, at a cost of less than 2 000 000 pounds a year. *Aircraft*, October/November 1928.
- 52 AA, CRS A5954, Box 39.
- 53 Slessor, *The Central Blue*, p 70. 'Air Control' was still being used successfully by the RAF in Aden and on the north-west Frontier in the mid 1930s.
- 54 RM, Ace No 7090, *Wrigley Notebooks*.
- 55 See The 1987 White Paper, pp 65-6.
- 56 RM, Ace No 7090, *Wrigley Notebooks*.
- 57 RAAF Historical Section (RHS), Air Board Agenda 506, 2-6-24.
- 58 loc. cit. Emphasis in original.
- 59 AA, CRS A5954, Box 786.
- 60 RHS, Air Board Agenda 545, 2-9-24.
- 61 See Coulthard-Clark, *The Third Brother*, pp 26-9.
- 62 RHS, Memorandum Regarding the Air Defence of Australia, RAAF HQ, 21-4-25.
- 63 McCarthy, op. cit., p 68.
- 64 RHS, Memorandum Regarding the Air Defence of Australia, RAAF HQ, 21-4-25. Foch had been Supreme Commander in France, Wilson the Chief of the Imperial General Staff, and both Hoare and Seely the UK's Secretary of State for Air.
- 65 65 years later, one of Williams' successors as CAS, Air Marshal S.D. Evans, used precisely the same starting point in presenting a defence strategy for Australia. See Evans, *A Fatal Rivalry*, pp 16-26.
- 66 RHS, Memorandum Regarding the Air Defence of Australia, RAAF HQ, 21-4-25, esp. Appendices I, V and VI.
- 67 Williams, op. cit., p 182.
- 68 RM, Williams Papers, Correspondence with Trenchard and Trumble in London. Williams to Trenchard, 31-12-27 and 5-4-28.
- 69 Williams, op. cit., p 184.
- 70 AA, CRS A5954, Box 877. For other comment on Salmond's report and its consequences for the RAAF, see McCarthy, op. cit., pp 67-75; and Coulthard-Clark, *The Third Brother*, pp 98-103.
- 71 AA, CRS A5954, Box 787.
- 72 AA, CRS A5954, Box 877.
- 73 loc. cit.
- 74 loc. cit. qv Coulthard-Clark, *The Third Brother*, pp 191-8.
- 75 RHS, Air Board Agenda 1337, 2-8-29. If an RAAF Wing had been established at Duntroon, the Air Force would have been liable for considerable expenses for extra staff and facilities. That was not a problem at Cranwell. Additionally, there was an understanding that any RAAF cadets who graduated from Cranwell would serve with the RAF for three to four years; consequently, the RAF was prepared to accept some of the costs.
- 76 AA, CRS A5954, Box 1083.

- 77 See pp 24-5 above.
- 78 RM, Ace No 7089, *Wrigley Notebooks*.
- 79 See p 11 above.
- 80 Aircraft which would have been suitable for long-range operations in 1928 included the Boulton Paul Sidstrand (combat range 500 miles, bomb load 1050 lbs) and the Supermarine Southampton (range 930 miles, bomb load 1100 lbs, including a torpedo carrying capability). Two Southamptons were in fact operated by the RAAF from 1928 to 1939.
- 81 Australian Archives, Victoria (AAVIC), MP 153/18.
- 82 loc. cit.
- 83 The Mitchell costings are approximate, but are based on an examination of *Jane's Fighting Ships*, London, 1929. The other figures come from 'RAAF the Cinderella of the Services', in *Aircraft*, 1-8-31, pp 14-15.
- 84 Clausewitz, op. cit., pp 122-34.
- 85 McCarthy, op. cit., p 70.
- 86 AAVIC, MP 153/18.
- 87 AA, CRS A5954, Box 877.
- 88 loc. cit.
- 89 See 'Night Torpedo Attacks Made on the Fleet', in *Aircraft*, 1-1-35, p 22.
- 90 AA, CRS A5954, Box 877.
- 91 McCarthy, op. cit., pp 53-4. The submarine costings are from Naval Historical Section, File 184H, RAN Submarine Service — Establishment and Abandonment — Historical Background, 1958.
- 92 Apart from Wrigley, articles from this period can be found by Squadron Leader W.D. Bostock, 'Air Strategy', in *Aircraft*, December 1928/January 1929; Flight Lieutenant F. Bladin, in *RAF Quarterly*, 1931; and Air Vice-Marshal Williams, 'RAAF Developments', in *Aircraft*, 1-6-37. Williams also spoke about air operations on radio: see AA, CRS A5954, Box 1083.
- 93 Coulthard-Clark, *The Third Brother*, pp 204-5, 446, reported that between the wars, many RAAF officers valued little beyond flying ability.
- 94 *Aircraft*, 30-9-28, p i.
- 95 AA, CRS A5954, Box 877.
- 96 Jones, Interview.
- 97 AA, CRS A5954, Box 877. The three gift aircraft types were the DH9/9A, the SE5A and the Avro 504K.
- 98 RHS, Air Board Agenda 921, 25-6-27.
- 99 RHS, Air Board Agenda 939, 19-7-27.
- 100 RHS, Air Board Agenda 1085, 21-6-28.
- 101 Later an air vice-marshal, member of the Air Board, and Commander, Eastern Area, World War II.
- 102 RHS, Air Board Agenda 1085, 21-6-28.
- 103 Salmond's report had been well received publicly. See *Aircraft*, 30 September 1928 and October/November 1928.
- 104 RHS, Air Board Agenda 1174, 13-10-28.
- 105 AA, CRS A5954, Box 877.
- 106 loc. cit. qv Williams, op. cit., pp 176-8.
- 107 AA, CRS A5954, Box 877. Subsequently, more than 740 Seagulls — known also as the Walrus — were built for British forces, qv Williams, op. cit., pp 209-11.
- 108 See McCarthy, op. cit., pp 93-128; and Wackett, *Aircraft Pioneer*, pp 79-139.
- 109 RHS, Memorandum Regarding the Air Defence of Australia, RAAF HQ, 21-4-25.
- 110 See Coulthard-Clark, *The Third Brother*, pp 258-72.
- 111 *Aircraft*, 31-3-24, 20-10-24. The Station's responsibilities included developing and testing airframes, engines and materials, and investigating aerodynamics and design.
- 112 RHS, Air Board Agenda 921, 25-6-27; and 931, 18-7-27.
- 113 Wackett, op. cit., pp 101-3; Williams, op. cit., p 197.
- 114 AA, CRS A5954, Box 877.
- 115 McCarthy, op. cit., esp Chapter 5.
- 116 See AA, CRS A7938, CAS File 105, 4-2-37.
- 117 RHS, *The Air Force List 1930*, and *The Royal Australian Air Force List 1935*. The numbers quoted include pilot officers and above but exclude air cadets.
- 118 Coulthard-Clark, *The Third Brother*, p 446.

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- 119 Air Marshal S.D. Evans, Interview, Canberra, 14-8-90; and Air Marshal J.W. Newham, Interview, Canberra, 6-9-90.
- 120 RMC, RMC Reports, 1910 to 1940.
- 121 Letter to author, 3-4-90. Air Marshal Hancock attended RMC 1925-28.
- 122 RHS, Air Board Agenda 1477, 2-9-31.
- 123 AA, CRS A5954, Box 877.
- 124 Air Marshal Sir Richard Williams, 'The Imperial Defence College in 1933', in Gray (ed.), *The Imperial Defence College and the Royal College of Defence Studies 1927-1977*.
- 125 Hewitt, *The Black One*, pp 142-3.
- 126 McCarthy, op. cit., p 66.
- 127 See RAF Air Historical Branch, RAF Staff College, Program of Work, 6th Course, 19-9-27 to 14-12-28.
- 128 loc. cit. The last two were also students on Wrigley's course.
- 129 RHS, Air Board Agenda 1788, 8-8-35.
- 130 AA, CRS AA1969/100, Box 473, 108/2/P1.
- 131 loc. cit. One of the papers was not identified, while the others were written by Flying Officer (later Air Vice-Marshal) F. Headlam and Pilot Officer (later Group Captain) W.N. Gibson, both from the Seaplane Squadron at Point Cook.
- 132 See Ross Babbage, 'Australian Defence Strategies', in Ball & Downes (eds), *Security and Defence*, pp 208-10. qv Dobb, Report to the Minister for Defence, *Review of Australia's Defence Capabilities*, p 175 (hereafter The Dobb Review).
- 133 See pp 27-9 above and pp 165-8 below.
- 134 AA, CRS AA1969/100, Box 473, 108/2/P1.
- 135 AA, CRS A5954, Box 877. At one stage, to support his case, Coleman even cited an address given several months earlier by Josef Stalin to the Red Army on the importance of training.
- 136 AA, CRS A5954, Box 877.
- 137 AA, CRS A5954, Box 877.
- 138 Nos 21, 22, 23 and 25 (General Purpose) Squadrons were already formed, while No. 24 was to be raised.
- 139 AA, CRS A5954, Box 877.
- 140 *Aircraft*, 1-10-36.
- 141 AA, CRS A5954, Box 877.
- 142 AA, CRS A5954, Box 1015.
- 143 RHS, War Cabinet Minute 139/40, 26-6-40. qv Gillison, *Royal Australian Air Force 1939-1942*, p 121.
- 144 AA, CRS A5954, Box 1014.
- 145 AA, CRS A5954, Box 910.
- 146 *Commonwealth Parliamentary Debates (CPD)*, 24-8-37, pp 21-37.
- 147 AA, CRS A5954, Box 877.
- 148 For an account of Williams' dismissal, see CD. Coulthard-Clark, 'A Damnable Thing', in *The Journal of Military History*, Vol 54, No 3, American Military Institute, July 1990. qv Williams, op. cit., pp 235-44.
- 149 Robertson, *Australia at War 1939-1945*, p 122.
- 150 AA, CRS A5954, Box 1083.
- 151 RHS, Air Board Agenda 2377, 20-12-38.

CHAPTER
- THREE -



*THE SECOND ELEVEN:
WORLD WAR II
1939-1945*

Air power has a number of shortcomings. Because aircraft can neither hold ground nor remain in an area of operations for an extended period, there can be a degree of impermanence about their operations. While the aeroplane is unique in its ability to concentrate force rapidly, its payload can be relatively small compared to other platforms. Finally, an air force generally needs a relatively sophisticated logistic support system and secure bases to operate from. Despite those limitations, air power arguably emerged as the decisive factor in World War II. Whether the use of the atomic bombs at Hiroshima and Nagasaki was necessary or justified remains a debatable and emotional issue. It is certain, however, that in 1945 no nation could have withstood the United States, with its monopoly of those apocalyptic air-delivered weapons.

If the decisiveness of air power was less clear cut at the conventional level of war (that is, the non-nuclear), its influence was at the least immense. The flexibility, speed, capacity to concentrate force rapidly and sheer pervasiveness of the air weapon made it the architect of victory. As General Montgomery observed at the beginning of 1943, 'the air striking force is a battle-winning factor of the first importance...you must win the air battle before you embark on the land, or sea, battle'.¹ Montgomery's judgment was shared in Australia by the Curtin government, which assumed power for the remainder of the war in October 1941. In a speech to the House of Representatives in May 1942, Prime Minister John Curtin described World War II as the war in which 'air superiority almost dictates the nature of military and naval operations'. He suggested that without air support, 'naval strength is virtually impotent', while the activities of an army without an adequate air force were likely to be 'greatly prejudiced and frustrated'.² Curtin argued that Australia's air strength 'must be increased', to the extent that the doubling of the Air Force would be far more advantageous than, for example, adding two or even three divisions to the Army.

In those favourable circumstances air power developed with dramatic speed. Any lingering doubts about the equal and independent status of air forces were quickly dispelled, as Curtin's predecessor as Prime Minister, Mr R.G. Menzies, found to his discomfort. At a War Cabinet meeting on 9 July 1941, Menzies led a discussion on the command and control of air assets.³ Principles of operations which reportedly had emerged during the fighting in the Middle East were cited. Cabinet was advised that, because the British Army and Air Force allegedly had not developed the same close cooperation as had the German forces, some allied operations had suffered. The remedy, it was suggested, was to give all Allied Army Corps their own fighter, bomber and reconnaissance aircraft under direct command. Concern was expressed whether that arrangement was being observed in the Middle East

and, if so, what dedicated air strength had been allotted to the Australian Corps. The War Cabinet sought comment on the matter from the Dominions Office in London.

The reply from the Dominions Office may have surprised some members of War Cabinet, but it should have been expected by those with any understanding of air power doctrine. With the exception of army cooperation squadrons, air assets remained under the independent command of the RAF. The exact proportion of air power allocated to a particular operation was dependent on the prevailing circumstances. As the Dominions Office pointed out, at one time army requirements for bomber and fighter support might be paramount; at another, there might be no active land operations but operations at sea may require air resources. Moreover, at all times it was necessary to maintain maximum pressure on enemy air forces. In those circumstances, it had been found most effective to place all air forces under the control of an Air Officer Commanding-in-Chief who, in consultation with the Commander-in-Chief, was responsible for the allotment of air resources between competing requirements. In other words, the Dominions Office had presented the Prime Minister and his colleagues with a practical illustration of the concepts of economy of effort, concentration of force and unity of command, based on the need to make the most effective use of resources and to apply the maximum force at the critical point. The independence of the RAAF did not come under question again for many years.

As far as air operations were concerned, the most significant progress perhaps came in two separate roles. The greatly increased capability of transport aircraft redefined the meaning of 'mobility'; while in the close support of land operations, the now-classic combination of armour and air ('blitzkrieg') was found to confer immense increases in fire power, speed and manoeuvrability. Those were not, of course, the only notable developments. The Battle of Britain confirmed the lesson from World War I that air superiority — the 'control of the air' — was likely to be a prerequisite for victory in any large-scale conflict. At sea the aircraft carrier made the battleship obsolete, while aircraft played a critical role in defeating the German U-boats, which at one stage threatened the allies' entire war effort. Ironically, the only role in which the utility of air power was seriously questioned was the one on which the classical theorists had based their extravagant expectations, namely, strategic bombardment. The massive area bombing of Germany and Japan by the RAF and the USAAF, and of the United Kingdom by the Luftwaffe, manifestly failed to bring the war to a rapid conclusion with minimal material damage, as Douhet *et al* had hoped.⁴ Nevertheless, if assessed only by the clinical yardstick of destruction, the two atomic attacks against Japan remain, almost half a century later, the ultimate expression of warfare. In sum, air power emerged from the war as a decisive factor in national security.

Given that largely positive outcome for air power, it might seem contradictory to state that the RAAF's experience during World War II was in a number of important aspects frustrating and disappointing. Comments from two distinguished observers from disparate eras and backgrounds serve to support that statement. In a private file note dated November 1944, the influential Secretary to the Department of Defence, Sir Frederick Shedden, wrote: 'Some day there will be an outcry about the relatively poor RAAF effort in the Southwest Pacific Area [SWPA] in relation to the resources allotted to the air effort'.⁵ Shedden absolved 'the personnel in the squadrons', whom he described as 'magnificent', instead placing the blame for the perceived failure on the organisational 'set up', under which it had 'been necessary to send senior officers to Europe to get operational experience which should have been provided in the Southwest Pacific Area'. Shedden's assessment was given more definition 40 years later by the historian John Robertson who, in 1981, concluded that because of the RAAF's commitment to provide aircrew for the European theatre under the Empire Air Training Scheme (EATS), and the command and control arrangements which obtained in the SWPA, 'no chance was created for an able man to turn the RAAF into an instrument of war of national significance'.⁶

In effect, Shedden and Robertson were saying that the exercise of Australian air power failed to achieve the following objectives: sufficient high-level command experience for senior RAAF officers, suitable involvement in operations, the development of the RAAF as a significant weapon of war, Australian political objectives in the SWPA, and the development of a vision for the future employment of air power in the national interest. Those are all matters central to the formulation and expression of doctrine.

The conclusions drawn by Shedden and Robertson are at once disturbing and significant; accordingly, they have been used as a framework for Part One of this chapter. However, it is important to remember that doctrine is a combination of theory and practice, and in wartime emphasis inevitably will be on the latter. When national survival is seen to be at risk, action is essential. The pressures of war militate against the promotion of elegant theories. Thus, a review of force structures, operations and capabilities is likely to give just as good an indication of doctrine as it was being applied — deliberately, intuitively or reactively — as is a critical analysis of policies from the comfort of 50 years of hindsight. That more practical approach provides the foundation for Part Two of the chapter.

Air activities in two theatres of war are examined. In Europe, the RAAF's major contribution came from the 27 000 or so EATS aircrew graduates, most of whom flew with the RAF's Bomber Command. Because the RAAF had no commands of its own in Europe — a fact which by itself might seem to support John Robertson's criticism — that review is brief. Comment on the EATS is presented primarily in terms of principles of air power employment. Far more attention is focused on operations in the SWPA, where the RAAF played a significant role in its own right.

*PART ONE:
AN IDENTITY CRISIS*

THE EMPIRE AIR TRAINING SCHEME

As John McCarthy has pointed out in his definitive study of the EATS, Australians generally accepted that their security was ineluctably tied to that of the United Kingdom.⁷ If Britain fell, the Dominions would face an uncertain, dangerous future. Thus it was considered to be in Australia's interests to support the defence of Europe to the maximum extent possible. Attention logically turned to the role of air power, which was seen as critical to the defence of an island nation. For some years the RAF had known that if a rapid expansion became necessary, it would not be able to train enough aircrew from British sources. While the United Kingdom had the industrial capacity quickly to increase aircraft production to 2250 machines a month, its aircrew training system was woefully inadequate.⁸ Agreement therefore was reached that Australia and the other Dominions would participate in a massive training program, subsequently known as the Empire Air Training Scheme, to resolve that problem. The mother country would provide the machines, the Dominions the men. Australia responded to the challenge splendidly, eventually contributing over 27 000 men to the war effort through the EATS.

The perceived importance of the EATS should not be underestimated. Following his attendance at a meeting in Ottawa in December 1939 at which the details of the scheme were concluded, Australia's Minister for Civil Aviation and for Air, Mr J.V. Fairbairn, told Prime Minister Menzies that 'the only activity that we have undertaken which could lead to the winning or losing of the war by our failure or success in carrying out our undertaking is the Empire Air Training Scheme'.⁹

Official opinion indicates that the scheme was highly successful and made a substantial contribution to the allied victory.¹⁰ However, two serious criticisms emerged from the RAAF viewpoint. The more clear cut of the two was the lack of opportunity under the scheme for RAAF officers to gain high-level command experience. That complaint is irrefutable. While a total of 17 'RAAF' squadrons was eventually formed in the United Kingdom,¹¹ there were no Australian wings, groups or commands. Those RAAF officers who did gain high-level command experience in Europe did so only through *ad hoc* arrangements with the RAF.¹² That contrasted unfavourably with the experience of the Canadians, who from January 1943 had their own Bomber Command Group, commanded by a Canadian air vice-marshal. Because of the circumstances under which the RAAF was employed in Europe, a number of senior Australian airmen believe that, in one sense, the RAAF's role in the EATS was simply to provide 'cannon fodder'.¹³ Given the magnitude of the contribution made by Australia, that is a disappointing conclusion.

The second criticism of the EATS deals with the philosophy of the scheme. Australia entered into the EATS agreement partly in the belief that Britain needed 'prompt aid in the air to defend it' that is, fighter pilots were needed to establish control of the air over the United Kingdom. However, by the time the scheme was producing graduates the Battle of Britain had been won. John Robertson has argued that, consequently, the need for Australia to contribute to the air defence of the motherland no longer existed.¹⁴ Robertson has pointed out that most EATS graduates in fact fought over Europe in the strategic bomber offensive, evidence which he suggests proves that the scheme was not crucial to Britain's safety.

Robertson's argument rests on an imperfect understanding of air power; indeed, it illustrates one of the perennial problems with which theorists have had to contend. Defining the air defence of the United Kingdom (or anywhere else) solely in terms of fighter aircraft places a doctrinal yoke on air operations which, those theorists would argue, does not exist in practice. Douhet and Trenchard, for example, most certainly would have pointed to the importance of the offensive in air operations, and the desirability of establishing air superiority by destroying the enemy on the ground rather than in the air. That was the strategy used for much of World War II, when air power doctrine as applied by the RAF and the USAAF in Europe held that the strategic bombing offensive might bring a spectacular and rapid victory by itself.¹⁵

The RAAF subscribed to that doctrine, even at the possible expense of its own immediate needs. In 1943 Australia was experiencing difficulties in raising the manpower needed for operations in the SWPA, so the government considered reducing its commitment to the EATS. It was left to the Deputy Chief of the Air Staff, Air Commodore J.P.J. McCauley, in the absence of the CAS, to present the case to the Australian War Cabinet and the chiefs of staff to maintain the agreed supply of aircrew, especially to Bomber Command. This McCauley did enthusiastically. His argument was based on the premise that the heavy bomber force 'was the only possible counter-offensive in the strategic sense that could be mounted in Europe', a fact which gave the campaign such significance that it was essential to maintain the RAAF's contribution. McCauley had 'little difficulty' in obtaining consent and his argument was 'accepted by Government'.¹⁶

In the meantime, the claims for strategic bombing made by its proponents were neither proven nor disproven. The RAAF's contribution to the aerial bombardment of Germany was consistent with the prevailing doctrine and the strategic circumstances. It was only in the command arrangements that the Australian endorsement of and contribution to the EATS was at fault.

THE SOUTH WEST PACIFIC AREA

The RAAF's involvement in the SWPA was much more complex than that in Europe. Because the Pacific was Australia's neighbourhood and the focus of national attention, there were more immediate and long-term political objectives to be pursued, as well as military victory. Questions of prestige and status, and influence in any post-war settlements, were never far below the surface.

Military actions generally were satisfactory, as was the RAAF's expansion. By the end of the war there were 52 Australian squadrons in the theatre.¹⁷ While those squadrons were integrated with the United States Army Air Force (USAAF) to form the Allied Air Force (AAF), the RAAF retained its independence through its own system of commands, groups and wings. However, despite its strength and independence, the RAAF's experience was again clouded by an identity crisis. This time, the belief of many was that, although the Air Force retained its corporate identity, control over its fortunes was surrendered to the Americans, who then relegated the RAAF to a secondary role. The depth of feeling generated by that belief should not be underestimated. Commenting on the command arrangements in the SWPA 40 years later, the RAAF's wartime CAS, Air Marshal Sir George Jones,¹⁸ stated that the allies' Supreme Commander in the theatre, General Douglas MacArthur, 'sidestepped' Australia out of the final victory over Japan, wanting all the glory for himself.¹⁹ In Jones' opinion, the RAAF 'could have handled the air war on their own'. A number of other senior RAAF officers believe their Service was relegated to the position of a 'second XI'.²⁰

In a literal sense the Americans undoubtedly had a good deal of control over the RAAF. For most of the war in the SWPA the RAAF's operational units were integrated into the AAF, and came under the operational control of General MacArthur. In turn, MacArthur delegated the conduct of air operations to the senior USAAF officer. Placing the RAAF under American control at the highest level need not in itself, however, have amounted to the 'surrender' of the Australian forces. Further, the suggestion that Australia surrendered control of its Air Force to the Americans implies that any such 'surrender' would have been inimical to the national interests and the development of the RAAF, a proposition which is questionable on grounds of national security requirements, organisational arrangements and air power doctrine. Any reasonable assessment of the relationship between the American and Australian air forces can be made only after reviewing the RAAF's operational experiences and the working arrangements within the AAF.

It is also the case that formal organisational arrangements represent only one avenue through which objectives can be pursued. Within most large bureaucracies there is a variety of informal mechanisms for achieving influence. Opportunities can arise through personal contacts, the political climate at a particular time and place, seizing the moment, and performing consistently well, irrespective of one's position. Using those avenues is likely to turn primarily on leadership and personal qualities. An examination of the relationships at the political, higher military and single Service levels is therefore essential.

Finally, the consequences of a military compact cannot be assessed in isolation. In this instance, two factors have to be included in any analysis. First and most important are the strategic circumstances and war objectives obtaining at the time critical decisions were made. In that context, the attention paid by decision makers to the principles of war and air power doctrine is crucial. Second, national defence capabilities (in this case those of the RAAF) cannot be ignored.

WAR OBJECTIVES AND RAAF CAPABILITIES

By mid 1943 it was reasonably apparent that, barring unforeseen developments, the allies were likely to win the war. A great deal of hard work and sacrifice was still needed, but guarded optimism was justified. In those circumstances, national leaders' attention started to turn towards post-war political objectives. For Australia, considerable significance was attached to the perceived importance of participating in the recapture of Commonwealth countries and the final drive against Japan. The latter operation in particular was one in which the RAAF might have been expected to play a leading role. In the event, the exclusion of the RAAF from the campaign against the Japanese homeland left a legacy of disappointment over its participation in the SWPA, for which the command and control arrangements are often blamed.

Such judgments ignore the circumstances facing the War Cabinet in 1942. At the risk of stating the obvious, the imperative for the allies was to win the war. It is perhaps easy to treat the immediacy of that imperative a little casually. Yet few Australian decision makers have faced more desperate circumstances than did Prime Minister Curtin and his War Cabinet in 1942. Any analysts commenting on Australian wartime decision making should start by reminding themselves that in the early years the invasion of Australia by Japan and the defeat of the allies seemed likely. If the allies' position had been less parlous, then, in setting its initial strategy, the Australian government might have been able to place some emphasis on its political objectives. As it was, there were few options.

The Cabinet's priority had in fact been signalled some four months before the establishment of the AAF. Shortly after Japan entered the war, Australian foreign policy appeared to make its most dramatic shift since federation. On 27 December 1941 Curtin had stated that Australia now looked to America, 'free from any pangs as to our traditional links or kinship with the United Kingdom...we shall exert all our energies toward the shaping of a plan, with the United States as its cornerstone'.²¹ In some circles in London and Washington Curtin's apparent abandonment of the Imperial connection was viewed as bordering on treachery, or at the least as cowardly. Yet the Prime Minister had simply been taking a step he and his cabinet believed was necessary, not merely for national security but possibly national survival.

Curtin's judgment must have seemed justified following Japan's stunning successes in South East Asia. By the end of February 1942 Japanese forces had gained footholds in territories adjoining northern Australia which made it seem probable that the advance southwards would continue, culminating in the invasion of Australia. Even six months after the battles of the Coral Sea and Midway — which contemporary historians now correctly see as having been decisive in curtailing Japanese sea and air power — the Australian War Cabinet still feared an invasion.²² Looking back to 1942 two years later, Curtin stated:

Now that Singapore was lost and we were unable to concentrate a superior fleet, the strength of our defences was inadequate to defend Australia...against an enemy with command of the sea and air. We lacked air support, possessing no fighters whatsoever, and our bomber and reconnaissance planes had been reduced to about 50 machines. No country faced a greater danger with less resources than Australia.²³

It was against that background that the decision to place the RAAF under General MacArthur was made. In the circumstances, it was strategically sensible.

There were also sound military reasons for the government's action. The unpleasant truth was that during the preceding four months of the war against Japan, the RAAF had not performed well. Supporters of the Air Force might argue that there were good reasons for that. As Chapter Two of this book has argued, from the time of its establishment in 1921 the RAAF had been explicitly subordinated to the other two Services. Its basic roles had been

army and navy cooperation, while for the first decade of its existence it received less than 10 per cent of total defence appropriations. Its aircraft were mostly obsolescent, and its flying units contained a large number of citizen force — that is, non-professional — personnel. Those were not circumstances conducive to the development of an elite fighting organisation.

Whether those conditions excuse the RAAF's early record in World War II is debatable. What is not at issue is that the Air Force's performance was undistinguished. Two particular events which occurred before the April 1942 decision to allocate operational control of Australian forces to MacArthur were especially significant. The first was the RAAF's involvement in the Far East campaign. By any measure the allied effort was an utter disaster. For the Commonwealth Forces the campaign consisted of a series of devastatingly quick defeats, and a humiliating flight down the Malay Peninsula to Singapore and the Netherlands East Indies, before final defeat or capture.

As it happens, the RAAF performed better than most. The Hudson bomber crews of Nos 1 and 8 Squadrons led the allied defence against the initial Japanese landing at Kota Bharu on 7 December 1941, and fought bravely. Fighter pilots from Nos 21 and 453 Squadrons in their Brewster Buffalos continued to try to provide air superiority, notwithstanding the shock of the overwhelming superiority of the Zero; while other Australian aircrew played their part with RAF squadrons. The RAAF also contributed some informed leadership, with its senior officer in Singapore, Group Captain J.P.J. McCauley, vainly trying to impress on the (RAF) C-in-C and AOC Far East the importance of air superiority and the need to strengthen the command's fighter force.²⁴

But in a campaign characterised by disaster and chaos, those involved were unlikely to emerge with too much credit, regardless of individual or unit bravery. An official report on the campaign was prepared by the GOC of the Australian Imperial Force in Malaya, Major General Gordon Bennett. Bennett did not dwell much on the RAAF's efforts, but did mention that both the quality and quantity of the air support in Malaya were inadequate.²⁵ The GOC also was critical of 'the lack of air support from our own air force', complaining that 'during the last week not one of our planes was seen'.

General Bennett's report covered the period from 7 December 1941 to 15 February 1942. On 19 February the Japanese bombed Darwin. The outcome of that attack was even more damaging for the RAAF. Again, numerous examples of courage and competence can be cited: for example, Wing Commander A. Tindal was killed trying to mount a defence against the raid and Group Captain F. Scherger acted calmly and professionally to try to retrieve the situation after the initial attack. However, despite those and similar contributions, the RAAF was strongly criticised during the subsequent Royal Commission conducted by Mr Justice Lowe.

It was the RAAF which attracted most blame for the military's failure to alert the local air defences of the approach of possibly hostile aircraft, notwithstanding ample warning.²⁶ Matters did not improve once the attack started. The Darwin Air Station was not well prepared and, as Justice Lowe noted, the lessons taught by war in Crete, Malta and Malaya had not been heeded. Numerous Australian and American aircraft were destroyed on the ground, and nine USAAF P-40s were shot down, five while making a recklessly brave attempt to take off and fight while the raid was in progress. Worse was to come. In what was a humiliating experience for the RAAF, large numbers of its members deserted their posts. There is some suggestion that the desertions resulted through the misunderstanding of an order. That seems a generous interpretation. Four days after the attack, 278 personnel were still missing.

Alan Powell has commented that the partial collapse of military standards at Darwin was a case of the 'RAAF's chickens...coming home to roost'.²⁷ Perhaps that conclusion could have

been extended. The experiences of Darwin and the Far East were more a case of the government's chickens returning to roost. For most of its existence the RAAF had been treated as a subordinate Service. It was poorly equipped and, in some cases, poorly trained. The Australian government, and through it the people, were arguably getting the kind of air force they had paid for.

ALLIANCE POLITICS

Given those experiences, it was understandable that, in Curtin's words, the government looked to the United States as the cornerstone of Australian security. The directive appointing General MacArthur as Supreme Commander of the SWPA placed under his control 'all armed forces which the governments concerned have assigned, or may assign, to this area'. From 18 April 1942 that included all Australian forces in the SWPA, which for the RAAF effectively amounted to its entire operational strength outside Europe.²⁸ By January 1944 MacArthur was exercising operational control over RAAF Command (the Air Force's highest theatre headquarters), five area headquarters, two group headquarters, 14 wing headquarters, four RAAF stations, 39 operational base units, 36 squadrons, 14 fighter sector headquarters and a number of ancillary stations and units.²⁹

The command and control arrangements were, of course, more complex than that. Operational control of the RAAF may have been formally vested in the Supreme Commander, SWPA. However, as the directive from the United States chiefs of staff to MacArthur added, 'the interests of the Nations whose forces...may be involved in these Military Operations are...safeguarded by the power each Nation retains to refuse the use of its forces for any project which it considers inadvisable'.³⁰ That provision clearly gave the Australian government final authority over the employment of the RAAF. The RAAF's independence was further safeguarded by the fact that its CAS retained administrative control, which meant he was responsible for training, logistics and personnel. Perhaps those were provisions which could be applied more in a negative than a positive sense; nevertheless, they were significant.

Personal friendships, mutual respect and effective working relationships play a major role in any bureaucracy. Those aspects of the alliance must therefore also be considered — informal lines of communication were always likely to be just as influential as the formal arrangements. At the highest political level, Curtin's relationship with MacArthur could be described as one between equals.³¹ Correspondence between the two invariably was courteous and correct, with an underlying tone of mutual respect.³² However, while MacArthur's approach was confident and positive, Curtin's tended towards diffidence. A good illustration of the nature of their relationship is provided by MacArthur's decision of September 1942 to form the larger part of the RAAF into the 'Coastal Command, Allied Air Force'. MacArthur first mentioned the reorganisation to Curtin in a letter dated 4 September. The following day, before Curtin had responded, MacArthur's air commander, General George C. Kenney,³³ issued an order constituting Coastal Command and naming the Australian Air Vice-Marshal W.H. Bostock as its AOC. When the plan was promulgated to RAAF units on 18 September, it was still being considered by the Australian chiefs of staff, at the direction of the Prime Minister. Curtin was also waiting for more information on the proposal from MacArthur.³⁴

The Prime Minister appreciated the dangers of the proposal for the RAAF. The role of a coastal command primarily would be defensive and, therefore, secondary, a circumstance which inevitably would constrain the RAAF's development. For example, it would be difficult to justify the allocation of modern attack and heavy bomber aircraft to a coastal command. Curtin also realised that the formal division of the two air forces could lead to the RAAF being excluded from operational experience in combat areas allocated to the

USAAF. Following representations by the Australians, the order creating the Coastal Command was rescinded and, after further discussions, the new organisation was renamed RAAF Command, Allied Air Forces.

Other instances of Australia exerting its independence are not difficult to find: examples discussed later in this chapter include decisions relating to the RAAF's force structure in 1943 and its disposition in 1944. The point here is that if on the one hand MacArthur and Kenney were prepared to exercise their legitimate authority unilaterally, the Australian government could still have the final word on important policy decisions if it chose to press the issue. Curtin and MacArthur continued to correspond on organisational matters affecting the RAAF for the next two years. Again, the tone of that correspondence was one of advice and consent between equals. In other words, at the highest political level the arrangements for the control of the RAAF were not necessarily inimical either to its development or employment.

Once the decision to give operational control of Australian combat forces in the SWPA to the Supreme Commander had been made, working arrangements for the respective Services had to be determined. In May 1942 the RAAF CAS, Air Chief Marshal Burnett (an RAF officer), sent a memorandum to the Chiefs of the Australian Naval and General Staffs and the American Naval and Air Forces, recommending the 'setting up immediately of a Combined Air Staff and Planning Staff to coordinate air operations... [which was] required for immediate and necessary coordination of air operations and cooperation with the other Services'.³⁵ Burnett's proposal was then considered by the Advisory War Council. The council recommended that Prime Minister Curtin should send a personal message to President Roosevelt advising him that it was of the utmost importance to set up in Australia 'machinery' for the unified control of air operations. The Advisory Council's recommendation was endorsed by the War Cabinet.³⁶

The resulting cablegram from Curtin to Roosevelt, sent via Australia's Minister to the United States, Mr R.G. Casey, was couched in the most urgent, even desperate, terms. Roosevelt was told that the northern parts of Australia and New Guinea were being subjected to almost daily bombing attacks. Australia's chiefs of staff assessed that the Japanese would be in a position to 'make attacks in strength' on New Guinea in the middle of that month (March), on Darwin and New Caledonia in April and on the east coast of Australia by May. The Prime Minister told the President that he could not emphasise 'too strongly the urgency of taking measures to enable us to marshal the available air resources in Australia to meet the immediate threat'.³⁷

Curtin's recommendation was both strategically sensible and consistent with air power doctrine. As Lieutenant General Brett and Air Chief Marshal Burnett stated in a subsequent memorandum implementing the agreement between the two countries, a fundamental principle of air operations was the centralised control of the whole air effort, under one commander, to produce a 'unified concentrated effort'.³⁸ The same point was made later by General Kenney after he replaced Brett. In Kenney's opinion, when the AAF was first formed, the air war was being waged on 'so narrow a margin of human and material resources' that everything available had to be pooled for a concerted effort. Success in the air depended upon cooperation and combined forces.³⁹

It had been the intention of Burnett and Brett for the AAF to function as an integrated force, with operations being directed by a combined staff. Brett was to be the commander of the AAF and Air Vice-Marshal Bostock his chief of staff. Brett and Burnett also expected Bostock to succeed Burnett as CAS (as did Bostock).⁴⁰ Had those arrangements been implemented, the senior USAAF officer in the SWPA would have had authority over all RAAF functions, rather than just operational control. In the event MacArthur replaced Brett with General Kenney and the Australian government appointed Air Vice-Marshal George Jones as CAS. When Kenney arrived to take over the AAF in August 1942 he quickly rejected the idea

Chapter Three

of a fully integrated air force. He took that decision unilaterally, notifying Air Vice-Marshal Jones rather than first consulting with him.⁴¹ Kenney decided to establish separate control systems for the USAAF and the RAAF. The reason he gave Jones was that the Americans felt their units were operating under 'considerable disability' because of the 'combination of staffs', which caused 'confusion' and was 'undermining confidence'; further, the 'effort involved in obtaining cooperation was too great, bearing in mind that the US and RAAF systems [were] entirely different'. Kenney accordingly created the 5th US Air Force and RAAF Command, each with its separate control system. The principles of unified command and coordinated effort were observed through the authority of the Headquarters AAF.

Almost certainly, Kenney would have been acting under orders from Washington, where Brett's integrated organisation had been viewed with disfavour. The Commander of the USAAF, General H.H. Arnold, in particular was unhappy that the Americans had made 'no attempt...to gain control' of air operations.⁴² Air Vice-Marshal Jones believed Kenney's decision stemmed from 'the failure of senior RAAF and American officers of Allied Air Headquarters to cooperate successfully'.⁴³ John Robertson placed more weight on Arnold's attitude: he described Kenney's action as one designed to 'remove any control the RAAF might have had over the operations of American squadrons'.⁴⁴

Putting aside those opinions for the moment, it could be argued that the establishment of RAAF Command should have been beneficial to the RAAF's independence. Although the RAAF continued to come under the operational control of the Commander, Allied Air Forces, it now had autonomy in planning and conducting operations. The arrangement also removed the possibility that all RAAF functions might come completely under American leadership, as proposed by Burnett and Brett. On the other hand, a divided organisation established a framework within which it would be easier for either of the partners to be excluded from particular operations. As MacArthur was Supreme Commander and Kenney Air Commander, and because of the sheer size of the USAAF, the Americans inevitably were going to become the dominant air force in the theatre. If the Australian government and the RAAF wanted to pursue political objectives and ensure the maximum degree of involvement in operations, it would be necessary for them to retain the respect and support of the senior partner. Personal relationships between senior air force commanders were going to be critical.

As has been noted, at the highest political level the relationship between Curtin and MacArthur essentially was one of equals. That was not the case in the AAF, which General Kenney dominated.⁴⁵ Once he had earned General MacArthur's trust, Kenney was allowed to 'run his own show'.⁴⁶ MacArthur subsequently wrote of Kenney: 'Of all the air commanders in the war, none surpassed him'.⁴⁷ Notwithstanding his dominance in the AAF, Kenney was approachable and always prepared to listen to good advice.⁴⁸ He respected the RAAF generally,⁴⁹ and on a personal level had good working relations with a number of senior Australian commanders, including Bostock, Hewitt, Scherger and Garing.⁵⁰ According to Garing, Bostock 'spoke the Americans' language'; McLachlan made the same observation about Hewitt.⁵¹ Bostock in particular was highly regarded by the two senior Americans.⁵² There is no reason to believe that Kenney, and through him MacArthur, would not have been responsive to well-argued, unified expressions of the RAAF's wartime ambitions.

THE RAAF COMMAND SCANDAL

One factor which unquestionably limited the RAAF's influence was the behaviour of its senior leadership.

Reference has been made to the damaging rivalry between Williams and Goble from 1921 to 1938. That disgraceful tradition was continued during the war. From May 1942 onwards, a



General George C. Kenney: Master of the operational art. OAH.

fight over the management of the RAAF between the CAS, Air Vice-Marshal Jones, and the AOC RAAF Command, Air Vice-Marshal Bostock, created the most corrosive atmosphere in the Air Force. There is no doubt that their unedifying public brawling diminished the RAAF's war effort.⁵³ An understanding of the notorious Jones-Bostock dispute is central to any assessment of the RAAF's performance in the SWPA. Further, the circumstances surrounding Jones' appointment provide a critical insight into the quality of RAAF thinking from 1921 to 1952, that is, during the years from the Air Force's beginning to Jones' retirement as CAS.

Early in 1942 a CAS was needed to replace Air Chief Marshal Burnett, the RAF officer who had filled the post without particular distinction for the past two years. The RAAF's most experienced leader, Air Marshal Williams, had been sent overseas following a critical report on the RAAF submitted by Marshal of the RAF Sir Edward Ellington in 1938.⁵⁴ Air Vice-Marshal Bostock had been informed by Burnett that he (Bostock) 'had been selected to succeed him [as CAS]...early in 1942', but for a variety of reasons Bostock became unacceptable to Curtin and the Minister for Air, Arthur Drakeford.⁵⁵ After a deal of procrastination, Jones, who was a temporary group captain and acting air commodore, was eventually appointed and promoted three ranks to air vice-marshal. There are good reasons to believe he was selected by mistake.

The keys here are Jones' seniority at the time of his appointment and the list of officers used by Cabinet to make its selection. Some uncertainty has emerged in previous discussions of the subject. David Horner has noted that in January 1940 Jones was twelfth on the RAAF's seniority list,⁵⁶ while Jones himself has stated that he was third on 'the list' used by Cabinet to select Burnett's replacement, coming immediately after Bostock. However Jones then mentions that there were 'eight other officers senior to both of us'.⁵⁷ In fact, the *Confidential Air Force List* dated February 1942, only 12 weeks before Jones' promotion, shows that there were eight Australian officers senior to him, with Bostock third in seniority and Jones ninth.⁵⁸

It would be extraordinary for an officer deliberately to be elevated three ranks and over eight senior colleagues to the RAAF's highest post. Air Marshal Williams, who was in Melbourne at the time of the decision, has stated that in selecting Jones the Cabinet referred to the wrong list of officers: instead of consulting *The Air Force List*, they used one prepared by General Brett detailing RAAF officers for the proposed integrated AAF Headquarters. On that list Jones' name appeared second, behind Bostock. Brett's intention was for Bostock to be both CAS and Chief of Staff of the AAF, with Jones as the Assistant Chief of Staff, AAF.⁵⁹ Williams' statement that Cabinet referred to the wrong list has been supported by David Horner.⁶⁰

If the circumstances as described by Williams and Horner are correct, then the government was guilty of the most disgraceful negligence. Regardless of whether Jones' subsequent performance was brilliant, average or poor, Cabinet apparently took a decision, in wartime, on the highest position in its air force, with little knowledge of who the contenders were, let alone their capabilities. If, on the other hand, the selection of Jones was deliberate, what does that say about the standard of the RAAF's leadership for the previous 21 years? What kind of military organisation was it in which the eight most senior officers were not considered suitable to hold the top job in wartime? Serious concern would have to be held for the quality of that organisation's management and thinking. On that basis, the Williams line that the appointment was a mistake is perhaps the more palatable of the two possibilities.

The government apparently harboured some reservations about Jones, for his new rank of air vice-marshal did not give him unambiguous command of his Service. Instead, the RAAF ended up with two officers of equal rank at its head, with Jones as CAS in charge of all administrative functions and Bostock as AOC RAAF Command controlling RAAF operations in the SWPA for General Kenney.⁶¹ That was not an ideal arrangement, but with two men of

goodwill prepared to put their Service's interests first, it could have worked.⁶² Regrettably, Bostock and Jones were not of that mind. They worked against rather than with each other and in the process damaged the Air Force. Each was far too occupied seeking support for his cause from, *inter alia*, the Prime Minister, the Minister for Air, MacArthur and Kenney, while the RAAF tended to split into 'Bostock' and 'Jones' camps. They were abetted by the government's culpable failure to act decisively. Once the dispute had reached a certain intensity, either one or both of the protagonists should have been sacked, or someone promoted to a senior rank. Indeed, when trying to assess the extent to which Australia had or had not 'surrendered' control of the Air Force, it is instructive to note that Curtin was still discussing the higher organisation of the RAAF with MacArthur in September 1944, two years after their correspondence on the subject had started.⁶³ By that time, the discussion focused as much on personalities as it did on the organisational propriety of separating the RAAF's operational and administrative functions and placing them under two equal ranking officers.

One can only wonder what the imperious and decisive MacArthur thought. When faced with a command problem in the USAAF early in 1942, he had acted quickly to replace General Brett with General Kenney. The RAAF problem had become evident at about the same time, but was allowed to persist. By March-April 1943 MacArthur was urging Curtin to resolve the matter 'at the earliest possible date', as an 'acute and dangerous situation [was] developing'.⁶⁴ Several weeks later he described the 'RAAF situation [as] still in somewhat of a turmoil'. Prime Minister Curtin acknowledged the problem. However, after an extraordinary amount of procrastination by the Australians (which included an unsuccessful attempt to get another RAF officer as CAS), nothing was ever done.

The crisis of command in the RAAF had far-reaching consequences. As Shedden advised the Prime Minister on 28 April 1943, the danger existed that 'unless the situation is firmly grasped by a capable officer, the Australian Air effort may become prejudiced in the eyes of the Americans'.⁶⁵ It was imperative, Shedden continued, that the command and control of the Air Force should 'evoke the fullest support of General MacArthur in supporting our case for the provision of aircraft for the expansion and maintenance of the RAAF and in ensuring its use to the fullest operational extent'. Shedden's assessment was shared by Air Commodore J.E. Hewitt, who accused Bostock and Jones of failing to develop 'a tactical concept acceptable to Kenney', which in turn militated against the allocation to the RAAF 'of the requisite first line aircraft'.⁶⁶ Hewitt felt that the RAAF would have received the 'wholehearted support' of MacArthur and Kenney for aircraft allocation if the two air vice-marshals had worked together to further their Service's interests. John Robertson took the matter one step further, reaching the damning conclusion that Bostock and Jones 'were so preoccupied with their struggle that they had no time to seek to develop a strategic doctrine for the RAAF'.⁶⁷

The RAAF's status in the theatre was further damaged by a series of inept and seemingly capricious postings of senior operational commanders during 1943. In February Air Commodore Hewitt was posted to command No. 9 Operational Group (OG), having been Kenney's Director of Air Intelligence in the AAF Headquarters. Shortly afterwards Hewitt was reposted to replace Air Vice-Marshal Bostock as AOC RAAF Command, an action Jones took without consulting MacArthur, Kenney or the two Australians. Bostock was posted to a job subordinate to Hewitt, his junior in rank. Jones' action understandably caused a furore, not least because Bostock was considered by the Americans to be a highly capable officer. Kenney immediately signalled his concern to the Air Board, expressing surprise that such a 'drastic and important step' had been made unilaterally.⁶⁸ He also contacted Jones in Melbourne and told him Bostock 'would continue to head the RAAF Command', and that if Jones did not agree, 'a wire would go to Canberra on the subject'.⁶⁹

After some damaging infighting the postings were cancelled, a humiliating outcome for Jones for which he only had himself to blame.



*Air Vice-Marshal Sir George Jones and Air Vice-Marshal W.I. Bostock
(with Air Chief Marshal Sir Charles Burnett):
The RAAF command scandal. AWM 12249.*

While most discussion of the quality of the RAAF's leadership in the SWPA has been directed at Jones and Bostock, Air Commodore Hewitt's experience as Commander of No. 9 OG during 1943 is equally informative. Before discussing Hewitt's performance, some comment on his personality is necessary. He was not an especially popular officer with either his contemporaries or his subordinates. Adjectives used to describe him often include 'abrasive', 'cocky' and 'outspoken'. Wing Commander Roy Bettiens' analysis of Hewitt's performance in the SWPA is scathingly critical,⁷⁰ while Hewitt's own record of his experiences during World War II appears to contain some selfjustification. The title of that book, *Adversity in Success*, summarises Hewitt's assessment of his war, for he was sacked from No. 9 OG late in 1943 in circumstances which were not only controversial but also damaging to the RAAF's standing.

In the first place, and most importantly, the balance of informed, professional opinion indicates that Hewitt was an excellent operational commander. Kenney's right-hand man, Lieutenant General Ennis P. Whitehead, advised his chief in August 1943 that Hewitt was doing an 'excellent job'.⁷¹ Two of No. 9 OG's most experienced wing commanders, Group Captain G.H. Steege and Wing Commander B. Pelly, considered Hewitt to be probably the best senior RAAF commander with whom they were associated.⁷² Steege in fact compared Hewitt favourably with notable RAF commanders he had served with in North Africa. Hewitt's Senior Air Staff Officer, Group Captain I.D. McLachlan, and No. 9 OG's Armament Officer, Wing Commander A.D.J. Garrison, also commented very favourably on Hewitt's operational leadership.⁷³ It is noteworthy that Steege, Pelly, and McLachlan were all veterans of the North Africa campaign; that is, they were far more experienced than the great majority of their colleagues in the SWPA. Hewitt also was able to influence high-level air policy. McLachlan has stated that on numerous occasions during 1943 Hewitt participated in discussions at AAF HQ on the future deployment and operations of the entire AAF.⁷⁴ Finally, Hewitt was extremely successful in establishing good relations with his American counterparts, a quality which this book has already noted was going to be essential if the RAAF was to prosper in the theatre.⁷⁵ Yet Hewitt was sacked in late 1943 for reasons which appear questionable.⁷⁶ Kenney reportedly considered Hewitt's removal as 'bad news', and subsequently lost a lot of interest in the RAAF.⁷⁷ Hewitt's replacement, Air Commodore F.W. Lukis, was not well regarded by the Americans,⁷⁸ and it seems no coincidence that shortly after he assumed command, Lukis started to express disappointment with the roles being allocated to his group.⁷⁹

The suggestion here is not that Hewitt was the 'key' to the RAAF achieving its political objectives in the SWPA; that would be facile. Rather, it was the manner of his dismissal, in conjunction with the other Air Force higher command problems, which was inimical to the pursuit of those objectives. The Americans could be forgiven if they wondered what was going on. In April Hewitt had been considered suitable to replace Bostock in the RAAF's senior operational post as AOC RAAF Command, and now he had been sacked as commander of a lesser (albeit important) formation after performing well. Simultaneously, after a year and a half of bitterness, the impasse over the Air Force's higher command organisation had not been resolved: Curtin was still writing to MacArthur about the Jones-Bostock mess.

It has been suggested that the Americans liked the troubled RAAF arrangement because it made it easier for them to pursue their own political objectives in the SWPA.⁸⁰ Even if that were so, it was within Curtin's power to resolve the problem any time he chose. It is little wonder that by September 1944, when Curtin once more discussed the RAAF's higher command arrangements with General MacArthur, the American replied that it was now 'too late' to make changes.⁸¹ The situation in the SWPA had passed the RAAF by.

Whether or not MacArthur and Kenney ever intended allowing the Australians to share in the glory of the final victory in Japan has not been established confidently. The fact that initially they were unfavourably impressed by Australian soldiers and airmen has been well

recorded.⁸² During discussions on the development of air power in the SWPA in July 1942, MacArthur acknowledged the importance of building up the RAAF, but concluded that 'it is evident that the force that will drive through to culmination will be preponderantly American, and it is essential that the American Air Force be developed with this end in view'.⁸³ There is also considerable evidence that the Americans did not want the British in the area, an attitude which, through the association of Commonwealth ties, had to extend to Australia. On the other hand, it is noteworthy that after working with the RAAF for four months, and before the full extent of the RAAF's failure of leadership had become manifest, Kenney had written to Bostock telling him of his wish to have the Australian on his side 'all the way back to Tokio'.⁸⁴ Group Captains McLachlan and Garing both believed that, up until about the end of 1943, it was Kenney's intention to take the RAAF with him 'all the way' to the final victory over Japan.⁸⁵

What can be stated confidently is that if it were the Americans' preference to exclude the RAAF, then inept Australian leadership made their decision easy. In May 1945 the War Cabinet anxiously recorded its hope that, 'from the aspect of prestige', the Australian forces might still be associated with the 'drive to defeat Japan [in its homeland]'.⁸⁶ By then, and particularly as far as the RAAF was concerned, that was self-delusion. Australia's opportunity to achieve political objectives in the SWPA had in large part been squandered. There should be no doubt that, to a considerable extent, that circumstance came about not because Australia had ceded too much control over the Air Force to the Americans, but because the government and the RAAF had been indecisive to the point of gross incompetence.

*PART TWO:
AN INSTRUMENT OF WAR
OF NATIONAL SIGNIFICANCE*

The problems with the EATS and the command of the RAAF in the SWPA were indicative of intellectual immaturity, perhaps even poverty, at the highest levels of the RAAF. There can be no doubt that opportunities were lost to shape and promote the Air Force and Australian air power doctrine. Nevertheless, the subordinate role the RAAF allowed itself to be pushed into did not necessarily mean that Australian air power failed to become 'an instrument of war of national significance'. In fact, by the end of the war the RAAF had grown into a large and potentially powerful force. The processes through which that force structure was achieved provide a practical indication of air power doctrine, even if the decisions which shaped the RAAF sometimes seemed to be taken as much in response to the prevailing circumstances as to intellectual conviction.

AIR OPERATIONS

If the RAAF struggled at the political and intellectual levels of the war, it performed well at the operational and tactical (fighting) levels. The following section examining RAAF operations is based on the experiences of RAAF Command and the 1st Tactical Air Force⁸⁷ in the SWPA in 1944-45, as that time frame and those units best represent the RAAF's performance as a large, balanced, independent force during World War II.

On 15 June 1944 General Kenney announced the formation of the Far East Air Force (FEAF), comprising the USAAF 5th and 13th Air Forces. The AAF then consisted only of RAAF, RNZAF and NEI units, although USAAF forces could be assigned to the AAF as directed by Kenney, who commanded both the FEAF and the AAF. The decision to form the

FEAF seems to mark the point at which MacArthur formally placed the AAF in a secondary role. As the FEAF moved forward with the land and sea forces towards the planned invasions of the Philippines and Japan, the AAF was consigned to clearing the Japanese out of the 'by-passed' areas of the Dutch East Indies and Borneo.⁸⁸

There has been considerable debate over the value of the 'mopping up' role, one argument being that it was unnecessary, and that the Japanese simply should have been left to 'rot' until their inevitable surrender.⁸⁹ That opinion was not held by General Kenney, who doubted whether 'Jap Army commanders in the field...would obey an order to surrender issued by a civilian-controlled Cabinet'.⁹⁰ Kenney's viewpoint was shared by the commander of the RAAF's 1st Tactical Air Force (TAF), Air Commodore A.H. Cobby, who believed that his force's work in the Halmaheras, Celebes and Dutch New Guinea helped to keep about 40 000 enemy troops immobilised, as a consequence of which MacArthur was able to press on with the Philippines campaign confident that by-passed forces were unable to threaten his flank.⁹¹ Cobby's argument that the RAAF had a necessary and legitimate role to play in the so-called 'by-passed' areas has been supported by senior RAAF officers associated with the campaign.⁹² In particular, Australia's involvement in the recapture of British colonies was seen as politically desirable.

Regardless of that debate, and even if operations in the 'by-passed' areas did not attract the hoped-for political prestige, the RAAF clearly was exposed to the full range of air power concepts and operations. Ample opportunities existed for capable men to play a constructive role in defeating the Japanese, while at the same time gaining experience relevant to the future development of air power. As even a cursory examination of the official histories and statistics shows (see Figure 3.1), a large number of officers accumulated an immense amount of experience in planning and conducting air operations.

FIGURE 3.1

*RAAF OPERATIONAL STATISTICS
SWPA, TO MAY 1945*

Operational Hours Flown	461,570
Number of Operational Sorties	101,332
Enemy Ships:	
Sunk (including submarines)	66
Probably sunk and damaged	155
Enemy Barges:	
Sunk	504
Probably sunk and damaged	660
Enemy Aircraft:	
Destroyed (by RAAF and USAAF)	13,420
Probably destroyed (RAAF and USAAF)	1808
Damaged (RAAF and USAAF)	2803

Source: RM, *Australian Air War Effort* (10th edn), 31-8-45.

A more specific example of that experience can be found in a series of important memoranda issued by Air Vice-Marshal Bostock in August 1942, which detailed policy for the employment of Australian air power in the SWPA.⁹³ Primary and secondary roles were listed for seven distinct operations: air superiority, heavy and medium bombardment, reconnaissance, torpedo strike, dive and light bombardment, fleet cooperation, and army cooperation. The memoranda raised numerous issues, two of which were especially noteworthy. First, the critical importance of establishing air superiority was emphasised. Control of the air was essential, it was stated, for the success of any campaign. Air commanders were reminded that as long as enemy air operations constituted a threat to any activity, fighters should be employed in the air superiority role and not diverted to their secondary role of ground attack. The only exception was to be in 'critical situations' or when enemy air operations were 'relatively ineffective'. Second, Bostock frequently reminded commanders of the need to exploit the flexibility and innate offensive capabilities of their machines. 'All aircrew' and 'squadrons of all types' were instructed to study the use of machine gun and cannon fire against air and ground targets. By remaining proficient in those skills, 'all types of squadrons [could] take the initiative in air combat' whenever an opportunity arose.

It is also noteworthy that RAAF commanders largely were left to themselves to conduct operations. For example, in October 1944 Kenney assigned the 1st TAF its tasks in the following broad terms: continuing responsibility for the operation of Kamiri Airfield (at Noemfoor); the destruction of enemy watercraft in the Kai Islands, the north and south coasts of Ceram, the Banda Islands and the Macclaur Gulf area; the destruction of enemy installations in the Ceram/Kai Islands areas in coordination with the 13th Bomber Command and 13th Fighter Command; obtaining maximum photo coverage of vital areas; and assisting in the air defence of Noemfoor by maintaining a daily fighter alert as directed.⁹⁴ RAAF Command received similarly broad directions. Allied Air Forces Operations Instruction No. 71 of 24 September 1944 tasked RAAF Command as follows: destroy hostile installations and war materials in the eastern Netherlands East Indies in conjunction with the 13th Air Force; maintain an air blockade over the Banda Sea between Timor and Ceram to prevent the movement of shipping into that area from the west; destroy enemy forces and installations in by-passed areas within [the 13th Air Force's] area of responsibility; and carry out anti-submarine and reconnaissance patrols.⁹⁵ Wing and even squadron commanders in turn were often given broad directives and left to do their job, which might involve target selection and liaison with other air, land and sea force commanders to develop a coordinated plan.⁹⁶

Higher command and planning opportunities for RAAF officers were extended early in 1945, when Kenney assigned complete responsibility for all air operations south of the Philippines to RAAF Command.⁹⁷ Air Vice-Marshal Bostock was given operational control over all AAF units in that area, while General P.B. Wurtsmith of the 13th USAAF was instructed to provide support as necessary. With his increased level of authority, Bostock became air commander for a series of operations, code-named 'Oboe', to clear the Japanese out of Borneo. Oboe itself was part of a larger operation named 'Montclair', which involved concurrent actions in the Philippines, the Netherlands East Indies and Borneo. Clearing and retaking Borneo was to be an Australian task, with the RAAF Command air forces working with Australian land forces.

It is easy to criticise that new degree of independence as little more than an act of tokenism on the part of the Americans. In a letter to the Minister for Air, Air Marshal Williams from his exile in Washington wrote patronisingly of learning with pleasure 'of the success of the Australian forces in Borneo and to know that our land and air forces are at last working together in what might be termed "their own little show"'.⁹⁸ Perhaps Williams was right. Nevertheless, Oboe was predicated on the belief that the Japanese would continue to resist strongly, regardless of events in other areas.⁹⁹

The RAAF's contribution to Oboe 1, the landing at Tarakan on 1 May 1945, was not without its problems. In addition to some planning shortcomings, the airstrip at Tarakan — which was one of the main objectives of the operation — proved to be unsuitable.¹⁰⁰ Subsequent planning was much better, as an examination of the Operation Order for Oboe 2 demonstrates.¹⁰¹ That document set out the actions required from all components of a 'balanced' air force to prosecute a major joint operation. Flying roles included air superiority, tactical reconnaissance and photography, maritime surveillance, long-range heavy bombing attacks, close air support, army cooperation and courier (transport) services. Command Post Headquarters had to be established, and, all operational units briefed on intelligence, telecommunication and radar procedures and services, meteorological services, ground defence procedures, the coordination of air with land forces, target designation and convoy schedules. The operation was a success.¹⁰²

One aspect of Oboe 2 warrants special mention. General Kenney was concerned that heavy casualties might be caused by the estimated 7000 Japanese troops dug in at Balikpapan. He accordingly instructed Bostock and the Commander of the 13th USAAF, General Wurmsmith, to subject the landing area to massive aerial bombardment.¹⁰³ The bombing of Balikpapan amounted to a variation of the doctrine of 'substitution', with, in effect, bombs (and money) being substituted for the lives of soldiers and sailors. Subsequent criticism of the intensity of the bombardment at Balikpapan¹⁰⁴ is difficult to justify in that context, as indeed is any criticism of similar aerial bombing actions.¹⁰⁵

Given the connection between theory and practice in military doctrine, it must be accepted that the process of planning and conducting Oboe 2 demonstrated a sound understanding of the principles, determinants and nature of air power, at least at the operational and tactical levels. General Blarney, the Commander-in-Chief of the AMF, recommended a special award of the DSO to Bostock for his part in the Borneo air operations. Blarney commended the RAAF's 'admirable' planning, 'thorough and complete' preparations, high order of control and ready and full cooperation.¹⁰⁶

Unfortunately the 1st TAF was not immune from the malaise which persistently diminished the RAAF's efforts in the SWPA. In March 1944 Group Captain McLachlan (who was about to relinquish his post as SASO of No. 9 OG to become commander of Southern Area) had told Air Commodore Hewitt (who was by then back in Australia) in an informal conversation that the Americans were 'leaping ahead' of the RAAF, leaving the Australians to 'clean up the remnants' of the 'now beleaguered' Japanese forces.¹⁰⁷ McLachlan was concerned even at that early stage that the RAAF fighter pilots in particular would become 'increasingly restless if the Americans took all the fighting plums', especially as action in the SWPA decreased. His assessment regrettably proved correct. On 19 April 1945, eight prominent fighter pilots presented the commander of the 1st TAF, Air Commodore Cobby, with identically worded resignations. The 'Morotai Mutiny' as it became known seems to have been another consequence of poor leadership.¹⁰⁸

The official inquiry into the 'mutiny' was conducted by Mr Justice Barry and was largely occupied with alleged alcohol smuggling involving a number of senior RAAF officers. The real issue, though, was the failure of Cobby and his senior staff to deal with the operational situation identified by McLachlan a year previously. In Justice Barry's words:

From about the beginning of January 1945 there was a widespread condition of discontent and dissatisfaction within the 1st TAF at Morotai, and the two main factors which brought about that condition were the opinions generally held about the nature of the operational activities upon which the wings were engaged and the attitude of the senior staff officers, Group Captain Gibson and Group Captain Simms...As that widespread condition developed and existed without his being aware of it, the AOC, 1st TAF, failed to maintain proper control over his command.¹⁰⁹

The fact that a number of fighter pilots had become disgruntled should scarcely have come as a surprise to Cobby. As an examination of the Weekly Progress Reports submitted to the War Cabinet by the CAS shows, by the end of 1944 the Japanese air offensive had all but finished. From 30 November 1944 to 1 June 1945 there was a total of only nine recorded Japanese attacks against allied targets in the SWPA, involving a mere 17 aircraft.¹¹⁰ While strike and transport crews remained active, fighter units were underemployed.¹¹¹ Discontent arising from boredom was exacerbated by the behaviour of some senior officers, who preferred socialising to their duties.¹¹² It is little wonder that personnel problems arose.

General Kenney's description of the affair makes depressing reading.¹¹³ Exercising his prerogative as Commander of the Allied Air Force, Kenney notified Air Vice-Marshal Jones (who was in Morotai investigating the problem) that he wished to see the pilots who had resigned. According to Kenney, Jones was 'sullen' and uncooperative, to the extent that the American threatened to approach Curtin, through MacArthur, to have Jones replaced as CAS. After speaking with the 'mutineers', Kenney concluded that they had acted in good faith and their dissatisfaction was justified. When Jones subsequently considered taking disciplinary action against them, Kenney said he would appear as a witness for the defence and withhold nothing from the press 'about the causes of the trouble', namely, inept RAAF leadership.

Perhaps Kenney's account was biased,¹¹⁴ although that would seem unlikely given that the event was of no consequence to the Americans. The real issue, though, was that once again the RAAF had dragged the USAAF into its distasteful internal bickering. The Morotai incident led to the sacking of Cobby, Gibson and Simms. Because the overwhelming majority of RAAF personnel who served in the theatre did so with honour, it is unpleasant to have to suggest that in relation to the general tenor of the Air Force's most senior leadership, those sackings represented an apt conclusion to the campaign in the SWPA.

FORCE DEVELOPMENT

The operations conducted by the RAAF were dependent on its force structure. At the start of World War II that structure was pitiful, although it bears repeating that the fact the Air Force even existed as an independent Service bore testimony to Air Marshal Williams' shrewdness and tenacity. In September 1939 there were 12 RAAF squadrons, of which two existed in nucleus only and four were citizen force (that is, non-professional). The aircraft inventory consisted entirely of obsolescent machines, with 82 Ansons, 54 Demons, seven Wirraways, 21 Seagulls and 82 trainers. There were 310 officers and 3179 airmen, stationed mainly at six bases in Australia. By 31 August 1945 the RAAF had grown to 54 operational squadrons supported by a vast infrastructure. Those squadrons operated 3187 aircraft, including over 1100 front-line fighters, 439 attack planes and 256 heavy bombers.¹¹⁵ There were 171 095 personnel (including WAAF and the RAAF Nursing Service). By any standards the RAAF was potentially an immensely powerful force. The processes which determined that force development provide a practical illustration of Australian air power doctrine.

The point was made in the preceding chapter that in the pre-war years the RAAF persistently sought to acquire general purpose aircraft, as platforms which not only met the prime air power requirement of naval and army cooperation, but also gave the RAAF some capability in its preferred role of independent strike. By April 1940 the other Services had accepted the RAAF's thinking. During a discussion on force development, the Defence Committee (comprised of the three Service chiefs of staff) reached an important doctrinal judgment. The chiefs agreed that aircraft of the general reconnaissance units were 'vital' to the defence of Australia.¹¹⁶ In the committee's opinion, the destruction of bases (including aircraft carriers) from which hostile aircraft could launch attacks against Australia would be a far

more effective method of defence than attempting to intercept and destroy aircraft in the air. For that reason, the committee believed it would be questionable to arm even a small portion of the RAAF with aircraft which were 'incapable of carrying out the vital functions of sea reconnaissance or bombing'. The principle of 'ubiquity of purpose' which had been so prominent during pre-war debates on air power was raised to support that conclusion. The decision was taken to try to acquire more Lockheed Hudson aircraft, and to raise an extra general reconnaissance squadron at the expense of a fighter squadron.

The Defence Committee's belief that the prime campaign of an air force is the control of the air was consistent with doctrine from World War I. However, the method they had chosen was different. Instead of establishing air superiority primarily through the use of fighter aircraft, the RAAF was planning to deal with any threat before it appeared over the Australian mainland. Consequently, when the Japanese initiated the Pacific war in December 1941, the RAAF did not have a fighter remotely capable of combating the Zero. Unfortunately, neither did it have sufficient general purpose bomber/reconnaissance aircraft to implement the Defence Committee's offensive strategy for air control. That discontinuity between doctrine and force structure meant that when the Japanese attacked Darwin with a mixture of carrier-based and long-range land-based aircraft in February 1942, they were able to do so with impunity. Given Australia's geography and strategic position, the means the chiefs had chosen to achieve control of the air was reasonable. The failure was more one of preparation and intelligence than doctrine.

In June 1940, two months after the meeting which set the priorities for Australian air power, the RAAF submitted an expansion plan to the War Cabinet. An increase from 19 (nominal) squadrons to a Home Defence Air Force of 32 squadrons was proposed. In keeping with the chiefs' assessment, 'flexibility' was the keyword for the 13 new squadrons. There were to be seven general reconnaissance bomber squadrons, three general purpose squadrons, one flying boat squadron and two fighter squadrons.¹¹⁷ War Cabinet accepted the RAAF's rationale, and approved an acquisition program in which general purpose/bomber aircraft were to be brought on strength first and fighter aircraft last (see Figure 3.2).

FIGURE 3.2

*RAAF REARMING PRIORITY, JUNE 1940
THE 32-SQUADRON HOME DEFENCE AIR FORCE*

- 71 Hudsons (or equivalent) to bring existing General Reconnaissance squadrons in Australia up to establishment
- 162 General Purpose two-seat dive bombers to re-arm existing General Purpose squadrons (which would also release Wirraways for the EATS)
- 27 Amphibians to re-arm the Fleet Cooperation squadrons (replacing obsolete Seagull and Walrus aircraft)
- 75 Hudsons (or equivalent) for new General Reconnaissance squadrons
- 81 General Purpose two-seat dive bombers for new units
- 54 long range two-seat fighters for new squadrons

Source: RHS, War Cabinet Agenda 151/1940, 28-6-40 and 23-12-40.

The 32-squadron Home Defence Air Force represented only an initial reaction to the war. On 12 December 1941, in a rapid response to the Japanese attacks against Pearl Harbor, the Philippines and Malaya, War Cabinet approved the expansion of the RAAF to 60 squadrons.¹¹⁸ Shortly afterwards in-principle agreement was given to raise another 13 squadrons.¹¹⁹ The increase to 73 squadrons was based on the assessment that Japan's success in gaining footholds in territories adjoining north Australia and in Australian Mandated Territories made it probable that the advance southwards would continue, culminating in an attempt to invade Australia. That judgment still prevailed at the end of 1942.¹²⁰ It was also assumed that no other allied air forces would be deployed to the region. Consequently, it was agreed that the RAAF's commitment could be reduced should allied aircraft arrive in the theatre.¹²¹

There were three main considerations underpinning the 73-squadron plan. First, it was considered essential to have a force which could resist invasion. A 'reconnaissance screen' was to be established across the islands north of Australia, from New Caledonia to New Guinea. Second, that screen would be supported by striking forces, a proportion of which would be deployed forward in the islands, with the major element held in reserve on the mainland. Air forces on the mainland were to be located within the geographical areas which 'corresponded to the vulnerable areas of this country'. Finally, each of those areas was to contain a well-balanced force capable of delaying an invading force 'for a period during which the air striking power can be concentrated by air reinforcements from the other areas'.¹²²

The success of the plan was dependent on the RAAF's ability to reinforce the forward line of defence in the islands and any area on the mainland chosen as an invasion point. Mobility thus was a key factor, which necessitated the establishment of air transport squadrons on a scale which would permit operational units to be 'rapidly transferred over great distances and maintained in sustained operations'. The force structure envisaged by the 73-squadron plan was listed under three basic roles: striking forces, specialist units and transport units. Within those categories there was a further breakdown into sub-roles, as shown at Figure 3.3.

Four useful observations can be made about the plan. First, the inclusion of 24 fighter squadrons was an acknowledgment of the concept of control of the air as a prerequisite for the employment of other forms of combat power. The emphasis on fighters rather than strike aircraft as the prime means of achieving air superiority represented a significant change from the strategy of June 1940 — the RAAF's experiences in Malaya and Darwin, and the Battle of Britain, had led to the modification of theory by practice. Second, and perhaps even more noteworthy, there were to be 34 'striking force' squadrons capable of conducting offensive operations. (That figure includes heavy bomber, dive bomber, general reconnaissance and flying boat units.) In other words, almost 50 per cent of the endorsed structure would consist of an independent, offensive strike/deterrent force. Third, an extra four transport squadrons were to be formed, making a total of 11. That demonstrated a dramatic change of outlook, as at the start of the war the RAAF did not have a single specialist transport squadron. 'Air mobility' was no longer a catchword; it had become an essential element of modern warfare. Such was the priority attached to transport aircraft that in January 1943 the government seriously considered writing off the costs already incurred in the development of an Australian bomber aircraft in order to divert resources into constructing the Douglas C-47.¹²³ Finally, the air force which had been identified as best meeting the greatest threat ever faced by Australia was one which would essentially operate independently, with 58 of its 73 squadrons involved in the air superiority and strike roles.

The in-principle decision to expand the RAAF to 73 squadrons was qualified by the plan's obvious dependence on the availability of manpower, aircraft and ancillary equipment.¹²⁴ In fact, by September 1943 manpower constraints saw the RAAF objective reduced to 60 squadrons, plus ancillary units, to be in place by the end of 1944.¹²⁵ The War Cabinet

subsequently further reduced the approved strength to 53 squadrons in Australia and two overseas, with the situation to be reviewed in December 1944.¹²⁶ Those reductions did not affect the percentage of independent striking forces, which continued to comprise about half of the proposed force structure.

*FIGURE 3.3
THE 73-SQUADRON PLAN
FEBRUARY 1942*

<i>Striking Forces</i>	<i>Squadrons</i>
• Fighters	24
• Heavy Bombers	4
• Dive Bombers	12
• General Reconnaissance (Torpedo Bombers)	7
• General Reconnaissance (Bombers)	4
• Flying Boats	7
TOTAL	58
<hr/> <i>Specialist Units</i>	
• Fleet Cooperation	1
• Army Cooperation	5
TOTAL	6
<hr/> <i>Transport Units</i>	
• Transport	9
TOTAL	9
GRAND TOTAL	73

Source: RHS, War Cabinet Agendum 113/1942, 22-2-42.

AIRCRAFT ALLOCATION AND PRODUCTION

Proposing a force structure was one thing; putting it in place was another. Until the local aircraft industry started producing sufficient numbers of the kinds of aircraft the RAAF wanted, Australian air power doctrine was circumscribed by the allocation of machines from its allies. Further, in deciding allocations, the United States and the United Kingdom were going to be influenced more by their global strategic perceptions than by the interests of a junior partner. In particular, the 'beat Hitler first' strategy was going to affect air forces operating outside Europe. There was no place for parochialism.

Once the United States entered the war, the policy for 'Dominion air requirements' was set by the Arnold-Towers-Portal agreement of June 1942.¹²⁷ There were two key clauses for the

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RAAF. The first stated that it was the duty of United States chiefs of staff 'to define the strategic requirement of those Dominions falling within United States spheres of responsibility'. When that requirement had been determined, 'the United States [would] make the necessary allocations of aircraft, through the machinery of the Combined Munitions Assignment Board'. In some respects that was not a happy arrangement for Australia: as Air Marshal Williams in Washington noted at one stage, in practice it placed Australia under the US chiefs of staff, who thus effectively were 'charged with considering Australia's strategic requirements and for submitting them for approval to US Joint Chiefs of Staff'.¹²⁸

It was inevitable that those arrangements would have a pronounced effect on RAAF policies and capabilities. For example, Australian efforts to acquire heavy bombers were consistently blocked for the first few years of the war in the interests of the 'greater good'. At one stage, Prime Minister Curtin even sent his Minister for External Affairs, Dr H.V. Evatt, to Washington to plead the case, but he fared no better than previous supplicants. The Commanding General of the USAAF, General H.H. Arnold, rejected Evatt's request with the blunt reminder that 'our [allied] doctrine calls for the greatest possible concentration and mobility of our striking air power', as a consequence of which priority in aircraft allocation would continue to be given to Europe.¹²⁹

Air Marshal Williams and Air Vice-Marshal Jones were given similar treatment six months later when they attended a meeting in Washington to discuss aircraft allocations for Australia for 1944. According to Williams, Major General Giles (the Chief of Air Staff, USAAF) 'approached the whole matter of aircraft allotment to Australia on the basis that his instructions were that nothing was to be done which would in any way detract from a maximum effort in Europe in the first half of 1944'.¹³⁰ Giles told Williams that General Arnold had recently asked the RAF CAS, Air Chief Marshal Sir Charles Portal, whether he was interested in the supply of heavy bombers to the RAAF. Portal's response had been that 'nothing must be done to detract from the effort in Europe nor to reduce Australia's personnel commitment to the Royal Air Force'.¹³¹ Giles added that General Arnold 'wanted to make absolutely sure that the Royal Air Force were satisfied that any commitment of aircraft [to the RAAF] would not take crews away from the first priority of the war against Germany'. As Williams noted, not only was Australia competing with the RAF for the supply of equipment from the United States, but also for Australian personnel, 'a most extraordinary position'.³²

That political reality may have been difficult for parochial Australians to accept, but the allocation of aircraft through a system which maintained the allies' war aims and sought to bring the maximum concentration of force against the enemy's centre of gravity was strategically sensible and doctrinally sound. At the same time, the policy underlined two important lessons for a junior partner. First, it was essential to maintain good relations with the senior allies to facilitate the promotion of local interests (an initiative which, as this book has already argued, the RAAF's leaders failed to do in the SWPA); and, second, the nation's capacity to apply air power independently would benefit immeasurably from a vigorous, efficient local production capability.

The comment has been made that during World War II the Australian aircraft industry was 'incapable of equipping a Service of any strategic significance'.¹³³ That conclusion apparently was based on Australia's failure to build heavy bombers and long-range transport aircraft in numbers. It seems a little harsh. In the early, desperate years of the war it would have been wasteful for Australia to have competed with the United Kingdom in the production of heavy bombers. The RAAF's priority was for general purpose bomber/reconnaissance aircraft, which was precisely the type Australian factories concentrated on, first with the Beaufort and then the Beaufighter. Once the war started to turn in the allies' favour that priority could be changed, which again was precisely what happened. By 1945

the production of two of the most successful strategic weapons of the war — the Mustang long-range fighter and the Lancaster/Lincoln heavy bomber — was well in hand.

In terms of doctrine, the policies underpinning the local construction program were just as significant as the end product. Those policies were distinguished by their inventiveness and emphasis on quality. Aircraft construction in Australia started properly only in 1937, and initially was limited to trainers.¹³⁴ Once war broke out the program was rapidly extended. Within a year factories were building Tiger Moths, Wackett Trainers, Wirraways and Beauforts, while the production of Gipsy Major, Single Row Wasp and Twin Row Wasp engines was proceeding. So satisfactory was the progress that in October 1940 Minister for Air Arthur Fadden was able to advise the War Cabinet that, by early 1942, the aircraft factories would have a production capacity 'greatly in excess' of present demand.¹³⁵ That led to a couple of imaginative suggestions.

Fadden noted that 'first line' aircraft quickly became obsolete (a matter of continuing concern to force structure planners and, therefore, those responsible for doctrine). Any rearming of squadrons with modern types had to be planned well in advance. The Minister pointed to the obvious advantages which would accrue from a coordinated Empire approach to production, in which the participating countries would undertake to construct 'divergent' types to achieve economies of scale and effort. Fadden also proposed the development of a single type which could be used by those countries east of Suez whose requirements were fairly similar, namely Australia, New Zealand, Malaya and India. He accordingly recommended that agreement be sought for the design and development in Australia, 'to meet Empire requirements', of a two-seater fighter or fighter/bomber. The aircraft was to be capable of level and dive bombing, have 'long air endurance' and good defensive armament. Such a machine, Fadden argued, would be 'of considerable utility for the defence problem in this country' by meeting both the general purpose and general reconnaissance roles.¹³⁶ The concurrent production of a 1500 hp engine to power the aircraft was also sought. Eventually the concept of the 'Empire' light bomber took form as the prototype Commonwealth Aircraft Corporation CA-4, also known as the CAC Bomber and the CAC-11. Although the project eventually foundered, the aircraft had enormous potential. According to Andrew Ross it 'would have been a world leader'.¹³⁷ Another still-born Australian project, the CA-15 long-range strategic fighter, also demonstrated exceptional performance.¹³⁸

Fadden's forecast on the progress of local aircraft production was largely correct. By the end of 1942 substantial numbers of engines and training aircraft had been built,¹³⁹ the Beaufort line was running well and the production of the new Boomerang fighter was in hand. The time was opportune for a restatement of production policy. A revised plan based on a joint submission from Air Vice-Marshal Jones and Mr Essington Lewis, the Director-General of Aircraft Production, was endorsed by the War Cabinet in December 1942. The new policy approved the construction in Australia of 'the best of proven types' which would meet the RAAF's needs in 1944 and beyond.¹⁴⁰ Priority was to be given to the 'most suitable types' of fighter and bomber aircraft, which by then were the Air Force's most pressing needs. Notwithstanding the decision to manufacture proven types — that is, aircraft already in service overseas — it was agreed that the local design and construction of 'the best possible Australian fighter should be proceeded with'. That particular decision led shortly afterwards to the development of the CA-15 prototype fighter aircraft. The local production of transport aircraft was also endorsed.

Following the decision to give priority to building high-quality proven fighters and bombers, a mission was despatched overseas in January 1943 to examine and select suitable types. It was led by the Secretary of the Department of Aircraft Production, Mr D. McVey, and included Mr L.J. Wackett from the Commonwealth Aircraft Corporation, Mr D.E. Callinan from McVey's department, and Group Captain W.S. Armstrong and Wing Commander J.R. Ryland representing the RAAF. Air Vice-Marshal A.T. Cole joined the team in England.

The mission's report was presented to the War Cabinet in July 1943 and justified the confident approach of the revised policy.¹⁴¹ In particular, the document dealing with the fighter selection was positively framed. It quickly narrowed the choice to one between the Spitfire Mk 8 and the Mustang, eventually recommending the Mustang for a number of reasons, including overall performance and the expected comparative ease of local construction. Comment was also offered on the Republican P-47 Thunderbolt, which was strongly favoured by General Kenney. A joint submission by Minister for Air Arthur Drakeford and Minister for Aircraft Production Donald Cameron rebutted point by point the nine issues raised by Kenney in support of the Thunderbolt against the Mustang.¹⁴² Based largely on McVey's information, that rebuttal clearly established the superiority of the Mustang. The two ministers' conclusion that 'there can be no doubt that the Mustang is a better fighting aircraft than the P-47, and therefore in the long run is a better aircraft to have'¹⁴³ was evidence of growing maturity, not only in the process of equipment procurement but also in the independent exercise of Australian air power decision making.

The RAAF's appreciation of the need to remain at the leading edge of technology was further demonstrated in its involvement from the earliest stages with the development of the 'jet propulsion' (gas turbine) engine. In 1944 the Australian government and the Air Force responded positively to High Commissioner Stanley Bruce's message, relayed from England, that 'the jet propulsion engine may profoundly affect the future of aero-engine production'.¹⁴⁴ Close liaison was maintained with British specialists, who were flown to Australia to brief officials on progress,¹⁴⁵ while groups of RAAF officers and civilian engineers and technicians were sent to the United Kingdom to study developments.

In sum, the Australian aircraft industry's achievements during World War II were notable. During a period of only six years the industry developed the capability to manufacture advanced types such as the Mustang, Mosquito, Beaufighter and Lancaster/Lincoln. It designed, built and flew prototypes of the high-performance CA-4 bomber and CA-15 fighter. For a country which effectively had established an aircraft industry only in 1937, that was a considerable achievement and a substantial contribution to the allied war effort. While the production program was not without its problems, Australian factories constructed 3500 aircraft of nine different types and nearly 3000 engines of three different types. The policy of constructing only high-quality proven aircraft, while at the same time promoting the local design and production of the best possible Australian fighter, was indicative of a sophisticated approach to the development of air power.

THE SPECTRE OF DOUHET

Special reference must be made to the heavy bomber element of the RAAF. Throughout World War II the RAAF, supported by the government, fought vigorously to acquire a strategic bombardment force. In part, that pressure came from the doctrinal notion that an air force should be 'balanced' to meet the prevailing strategic circumstances. The balance proposed for the 73-squadron plan, for example, was based on 'the tactical situation' at the time the plan was submitted, and included only four heavy bomber squadrons.¹⁴⁶ Twelve months later, changes in that situation necessitated amendments to the balance. With the allies now on the offensive, more long-range reconnaissance and strike aircraft were needed. The RAAF consequently sought to increase its establishment of heavy bombers — which had the capability to perform both of those high priority roles — at the expense of dive bombers.

There was, however, more to the bomber lobby than that. The attraction of the strategic bomber was not limited to the 'balance' of the RAAF. Its place in air power doctrine was paramount. Blitzkrieg, air mobility and air superiority were all very well, but without a significant component of heavy bombers an air force simply did not measure up to the concepts of the classical theorists and the expectations of its warriors.¹⁴⁷ The ideas which

shaped the RAAF in the 1940s were direct descendants of those which occupied Wrigley in the 1920s, when the notion of victory through air power alone justified the existence of an independent air force.

Australia's efforts to acquire a strategic bombing force dated from the early days of the war, more than a year before the Japanese attacks of 7 December 1941. In late 1940 Cabinet tentatively raised the question of obtaining Boeing B-17 Flying Fortresses from the United States. However, after taking advice from the RAAF's (British) CAS, Sir Charles Burnett, Prime Minister Menzies declared that the B-17 was 'unsuitable for RAAF operational requirements'.¹⁴⁸ The aircraft's long range, speed and large bomb load were acknowledged, as was its ability to carry out operations at night against land targets. However, in addition to being a very expensive proposition, the aircraft's 'defensive powers under daylight conditions [were considered] poor', and it was assessed as a 'vulnerable target to anti-aircraft fire of the concentrated type which may be expected from enemy ships'. Burnett dismissed the B-17 as unsuitable for Australian requirements, which called for a 'medium high speed reconnaissance aircraft capable of carrying an effective but comparatively small bomb load, with long endurance and facilities for sea reconnaissance'. Those alleged requirements also happened to limit the RAAF's independent ability to project power, as well as protect England's position as the main supplier of aircraft for Australia. The fact that the United Kingdom was scarcely capable of providing assistance of any kind apparently was not allowed to intrude on considerations.

Efforts to acquire heavy bombers continued on a number of fronts. With the Arnold-Towers-Portal agreement in place after mid 1942, the RAAF's requirements in the SWPA were processed through the United States. Despite repeated requests, no heavy bombers had been included in the RAAF's equipment program by 1943. Consequently, in the middle of that year, Minister for External Affairs Evatt made a trip to Washington to try to deal with the matter 'on the political level'.¹⁴⁹ As a result of Evatt's representations, a rather vague undertaking was received from President Roosevelt to provide Australia with 475 aircraft 'prior to the end of 1944'.¹⁵⁰ The types of aircraft were not specified, but in an effusive letter to Curtin a week later Dr Evatt claimed that he had 'fully discharged the sole mission entrusted to [him]' by the Prime Minister.¹⁵¹

In view of President Roosevelt's apparent support, the RAAF made a bid for seven squadrons of heavy bombers, each of 18 aircraft. Air Marshal Williams considered a force of that size was necessary 'to remedy the unbalanced nature of [the RAAF and]...to enable it to develop the maximum effort against Japan'.¹⁵² Ultimately, however, Dr Evatt's intervention came to little. General Arnold could play the political game just as well as Evatt, and while he technically satisfied Roosevelt's commitment, he did so with aircraft like the Vultee Vengeance dive bomber which, as Air Vice-Marshal Jones later drily noted, 'no one else wanted'.¹⁵³ Jones himself of course was scarcely immune from criticism if one accepts the argument that, in part, the RAAF's efforts to rearm were hampered by the failure of its leaders to develop a strategic doctrine. Air Commodore Hewitt's assessment that Generals MacArthur and Kenney would have given the RAAF their 'wholehearted support' in negotiations for aircraft had the RAAF's leadership worked towards that end is also pertinent.¹⁵⁴

Allocation was not the only potential source of bombers. In November 1943 the Air Staff raised a submission for the local production of the highly successful Avro Lancaster. It was the RAAF's objective to be able to 'exert all possible effort against the Japanese', especially in 'energetic offensive operations rather than in [a] purely defensive role'. The Air Staff argued that without aircraft capable of undertaking long-range strike and reconnaissance, the RAAF was comparatively ineffective.¹⁵⁵ The 'present types of aircraft available [permitted] of only a negligible contribution to the offensive power of the Allied Air Forces in the SWPA'. In sum, the lack of heavy bombers was 'a serious deficiency' which meant that the RAAF was 'out of balance'.

There was also the political dimension to consider. On leave in Australia from No. 9 OG in March 1944, Group Captain McLachlan stressed to Air Commodore Hewitt the need for the RAAF to form long-range bomber and fighter forces, not only to match, proportionately, the capabilities of the USAAF, but also to satisfy the ambitions and fighting spirit of Australian airmen.¹⁵⁶ McLachlan had become sceptical of the future operational effectiveness of the RAAF in New Guinea because of the inability of its short-range aircraft to 'hit the Japanese where they were in greatest strength'.

As it happened, steps had finally been taken on two different fronts to equip the RAAF with a strategic bombing force. In November 1943 the War Cabinet had approved the expenditure of nine million pounds for the local production initially of 50 Lancasters. That order represented only a start, as the total production run was to be extended to 346 aircraft plus spares. September 1946 was set as the target date for completion of the first 50, with the entire complement to be in service by December 1947.¹⁵⁷ The Lancasters were to be used for the 're-arming of existing General Reconnaissance Bomber units now equipped with Beaufort aircraft', a change which would have represented a massive increase in the RAAF's capabilities. Because of the lead time involved in setting up the Lancaster program, the RAAF had continued to press for an allocation of bombers from the United States. Eventually, at the end of 1943, and coincident with the decision to build the Lancaster, the USAAF decided to equip Australia with the B-24 Liberator. By the end of the war the RAAF had received 254 of those most capable bombers.¹⁵⁸

The concept of operations for the heavy bomber force tells as much about RAAF thinking as does the determination to acquire the capability. That concept had two main threads, which corresponded to the types of targets available. The first thread was straightforward. Targets in the SWPA were generally small, dispersed and remote from allied bases. Outside Japan there were few large cities worth attacking. In those conditions, strike aircraft with a long range and a large bomb load were, by definition, going to be the most useful, notwithstanding Sir Charles Burnett's preference for small British aircraft. Rearming Beaufort squadrons with Liberators was a logical step.

Those relatively small targets did not require the 'mass' or 'area' bombing tactic involving hundreds of aircraft which came to characterise raids in the European theatre. That tactic assumed major significance in the Pacific only in relation to Japan. Thus, most RAAF heavy bomber operations in the SWPA involved formations in the order of three, six or 12 aircraft.¹⁵⁹ That was a legitimate use of heavy bombers; that is, their capabilities were suited to the role. The RAAF and the government were, however, going well past the demands of that kind of operation. With their objective of assembling a force of 350 aircraft they were acquiring a massive area bombing capability. The question arises: what was the thinking behind the development of that capability?

Massive bombardment must be seen as a valid expression of air power doctrine during World War II, notwithstanding the fact that in later years official surveys raised some serious doubts about its effectiveness.¹⁶⁰ John Kenneth Galbraith, for example, as a Director of the United States Strategic Bombing Survey, reached the extraordinary conclusion that the horrific, sustained raids by the allies against Hamburg from 24 July to 3 August 1943, when 2752 aircraft dropped 8876 tons of high explosive (HE) and incendiary bombs, possibly 'increased Germany's output of war material and thus her military effectiveness'.¹⁶¹ Yet according to the official RAF Bomber Command operational analysis from 1943, those raids caused 'the almost complete annihilation of [Germany's] second city...it was little more than a burnt-out shell in which survivors of the disaster existed without gas, electricity and drinking water'.¹⁶² The devastation could only be compared, the official report concluded, to a 'similar catastrophe [which] overtook Sodom and Gomorrah, the Cities of the Plain'. Similarly, in September 1945 the United States Strategic Bombing Survey concluded that allied air power had been 'decisive in the war in Western Europe...It brought the [German] economy...to virtual collapse'.¹⁶³

The RAAF was informed of those analyses. Its most accomplished pre-war student of air power, Air Vice-Marshal Wrigley — now AOC Overseas Headquarters in London — received copies of Bomber Command's reports.¹⁶⁴ RAAF officers also were posted to RAF Commands 'for the purpose of studying operational, tactical and technical development'.¹⁶⁵ Significantly, the officer attached to Bomber Command, Wing Commander R.N. Dalkin, was required to report on techniques employed in the massive raids specifically in relation to their relevance to operations in the SWPA.¹⁶⁶

In distant Australia, the kinds of apocalyptic description used by the RAF to describe the raids against Hamburg must have read like the vindication of Douhet. The spectre of Douhet can be taken further. From early 1943 the RAAF was preparing to use chemical weapons against the Japanese, a practice advocated by the Italian theorist.¹⁶⁷ Chemical weapons would have greatly increased the RAAF's area bombardment capability. With the exception of the two atomic attacks, strategic bombing in World War II was based on the use of high-explosive and incendiary bombs. The radius of effect of those weapons was, however, limited (unless in the case of the incendiaries there was a strong wind) and, as has been noted, bombing accuracy was often poor.¹⁶⁸ It was for those reasons that Bomber Command adopted area bombing, employing large formations of aircraft to concentrate force. A more economical tactic would have been the use of fewer aircraft with a more effective area weapon, such as chemicals. However, in Europe the danger of reprisals constrained the choice of weapons. That constraint did not apply to the same extent in the SWPA, where from about 1944 Japan's capacity for strategic air operations was minimal. Japanese land forces could have responded in kind to any use of gas by the AAF, but clearly there would have been a huge imbalance in relative capabilities.

Consequently, in February 1943, the RAAF spent over 500 000 pounds buying 'British type Chemical Warfare weapons'.¹⁶⁹ The 65 lb bombs it acquired proved unsatisfactory for tropical conditions, so in May 1945 40 000 type M47 100 lb bombs and 4000 type M78 500 lb bombs were ordered from the United States.¹⁷⁰ At the time the latter order was placed, Australia held sufficient bulk stocks of mustard gas to fill 22 000 of the type M47 bombs.

The RAAF planned to use the mustard gas bombs 'in accordance with US Air Force policy for the theatre',¹⁷¹ which was one of 'no first use'.¹⁷² Australia had ratified the 1925 Geneva Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or other Gases, and of Bacteriological Methods of Warfare, in 1930.¹⁷³ The ratification contained two caveats: first, that Australia was bound by the protocol only towards states which were themselves signatories; and, second, that the protocols would not be binding during wartime should an enemy break the agreement.

Like most declaratory policies, Australia's endorsement of the 1925 Protocol was also related directly to the document's utility. Thus the policy of 'no first use' came under review, at least unofficially, in about November 1943, following heavy American losses at Tarawa during a frustrating battle to remove 3500 well-entrenched Japanese soldiers. Shortly afterwards, Wing Commander J.B. Hampshire (the leader of the first five RAAF crews to start training on the Liberator bomber in December 1943) was told informally that gas might be used in similar situations in the future, to save lives.¹⁷⁴ Hampshire's recollection is supported by evidence from trials conducted with mustard gas in Australia from 1943 to 1945. Those trials tested, *inter alia*, the effectiveness of aerial bombing with mustard gas on 'typical Japanese jungle fortifications'.¹⁷⁵ Notwithstanding an inference that the allies would use gas only as a 'last resort' weapon, it seems that the 'first strike' option was considered. One of the specialists associated with the Australian trials, Jack Legge, noted that while the emphasis initially was on defence against chemical weapons should the Japanese use them, 'the British, the Americans and the Australians were...prepared to retaliate'; further, 'some attention was certainly paid to the possible uses of mustard gas as an offensive weapon'.¹⁷⁶ Legge also recorded that one series of trials in which Liberator bombers participated showed that 'mustard gas was far more dangerous than HE'.

Wing Commander Hampshire in fact was involved in chemical weapons trials — almost certainly mustard gas — during his training on the B-24 with the USAAF.¹⁷⁷ At about the end of 1943, Hampshire dropped chemically charged bombs on an island in close formation with three USAAF and two other RAAF crews. None of the Australian airmen was briefed on the exercise, but before the flight all were issued with gas masks; and after the bombs had exploded the island was completely covered with gas. As far as Hampshire was aware there was no other incidence of RAAF Liberator crews dropping chemical weapons either in training or operations during the war in the SWPA.¹⁷⁸ There was, however, little difference between chemical and conventional bombing missions. By May 1945 the RAAF had plans detailing standard bomb loads and Rates of Effort (ROE) for dropping the types M47 and M78 mustard gas bombs from its B-24s and B-25s.¹⁷⁹

The war in the Pacific ended before the American bombs arrived so the RAAF's order was cancelled. That should not be allowed to obscure the fact that the RAAF had achieved the classical doctrinal objective of air power: a large heavy bomber force with access to weapons of mass destruction.

That leads to the second thread in the concept of operations. Even without chemical weapons, the RAAF had acquired a potentially powerful area bombardment capability. A capability was, however, only part of the equation. As Air Chief Marshal Sir Neville McNamara has shrewdly observed, size alone does not denote power. Capabilities must be matched by ideas.¹⁸⁰ The question therefore arises: did the RAAF's thinking complement its new capability? Here, the circumstances under which the Liberators were provided is illuminating.

In April 1943, while on a visit to the United States, General Kenney had told Air Marshal Williams he opposed the formation of RAAF heavy bomber squadrons because of Australian manpower limitations.¹⁸¹ Kenney also claimed it would be wasteful to have to establish bomber training units in Australia. Six months later, however, his position suddenly shifted. Kenney became aware in late 1943 that the United States had a 'surplus of B-24s pouring out' of its factories. He immediately asked General Arnold to start allocating bombers to the RAAF,¹⁸² with the intention of forming RAAF squadrons to replace USAAF heavy bombardment squadrons already operating from Darwin. The American units would then be released to participate in the push north against the Philippines and Japan, while the new RAAF squadrons would remain behind to attend to the mopping up operations. With that prospect, USAAF attitudes towards an RAAF heavy bomber force underwent a rapid shift. In order to hasten the Australian training program, Kenney lent the RAAF six USAAF B-24s and convinced Arnold immediately to provide 12 more, with regular supplies of six a month to follow.

From the RAAF perspective, with the allies on the offensive, those long-awaited aircraft would have been the ideal element of Australian air power to have gone forward against Japan. In fact, the Liberators were being provided by Kenney to *limit* the RAAF's participation. The release of the USAAF bomber squadrons from Darwin decreased the "likelihood that the RAAF would be included in the attack against the Japanese homeland. The irony of that seemed lost on the RAAF and the Australian government, as indeed was the reality of their situation. By March 1945, with the end of the war in sight, they were still trying to supplement their Liberator force with 100 Lincolns, with which they hoped to be able to prosecute 'considerably more...effective contacts with the enemy, and to offer a substantial force in the final bombing of Japan'.¹⁸³ As was noted previously, that was self-delusion. Because of the inability of the RAAF's leaders to see past short-term issues or their own ambitions, the Air Force had acquired a massive strategic bombardment capability for which it had failed to develop a genuine strategic role.

EDUCATION

If the RAAF wished to analyse, develop and promote the ideas about air power which emerged during the war, some sort of staff training in Australia was essential. An important initiative for the professional education of officers was taken in August 1943, when the RAAF Staff School was established. War Staff Courses lasted 12 weeks, and had from 15 to 25 students, generally at the squadron leader/wing commander level. Pilots were favoured as students, comprising about 65 per cent of each intake.

Training was not ideal as far as a deep understanding of air power doctrine was concerned; nevertheless, it was a start. Because staff skills were in short supply (something which was understandable given the rapid and huge expansion of the armed services), attention for the first two weeks was placed on such basic subjects as English expression, message writing, official correspondence and office management.¹⁸⁴ The following weeks concentrated on teaching students to work effectively in a relatively complex, usually joint Service, planning environment.

Most time was spent planning hypothetical operations. The college was also sent copies of current Operations Orders to analyse, an exercise which would have been instructive in the management of a large, complex, balanced air force.¹⁸⁵ With a war to be fought, that was undoubtedly the right emphasis. Concepts of air power doctrine which came out of those practical exercises were supplemented by a small number of theoretical discussions. There were three presentations on bomber operations, and individual lectures on Fighter operations, air support, defence of sea communications, air transport, and the organisation of the Australian, American and Japanese air forces. There was only one formal presentation on air strategy.

Air Commodore J.E. Hewitt was posted to the school as Assistant Commandant in March 1945. Hewitt was struck by two things in particular. The first concerned the quality of the students. Hewitt noted a serious lack of background reading. There was not one member of the current course who had studied the history of warfare in depth. Standards of English expression and grammar were also assessed as poor. Hewitt's concern about the low standard of education of some of the more senior students was shared by the college's Commandant, Air Commodore W.H. Anderson. The second point was the widely held belief of the student body that the RAAF had essentially been consigned to a supporting role during the war. Discussions regularly focused on the RAAF's dependence on the RAF and the USAAF, and always having to take 'second best'.¹⁸⁶

AN INSTRUMENT OF WAR OF NATIONAL SIGNIFICANCE?

There are some lingering disappointments over the RAAF's employment in World War II, notably in relation to the command and control arrangements in the European theatre and the SWPA; and through its assignment to the 'mopping up' role in the latter. Those feelings are justified. In the SWPA in particular — Australia's primary area of operations — constructive action could have been taken to try to resolve the problems any time up until about the middle of 1944, by which stage things had gone too far. Regrettably, reprehensible leadership gradually closed off political opportunities for the RAAF.

Those missed opportunities, however, represented only one facet of the nation's objectives for air power. The fact remained that by the end of the war the RAAF had become a huge force. It was staffed by combat-experienced commanders and crews, equipped with large numbers of modern aircraft and supported by a vast infrastructure. It was capable across the full range of air war operations.

With the end of the war came an overwhelming world-wide wish for peace, accompanied by renewed efforts to disarm. By the same token, the uncertainties which inevitably accompanied the new world order meant there were going to be enormous opportunities for military leaders to develop doctrine and promote their Service in support of national interests. In the case of the RAAF, the experience and operational capabilities were in place. If any doubts about the Air Force's ability to meet its national obligations persisted, then they should have been directed only at the strategic thinking of the highest levels of its leadership.

NOTES TO CHAPTER THREE

- 1 Montgomery, *High Command in War*, pp 3-4.
- 2 CPD, 1-5-42, p 802.
- 3 RHS, War Cabinet Agendum 267/1941, 5-8-41.
- 4 It is difficult to reach a confident conclusion regarding the effects of strategic bombardment during World War II, so complex are the data. During the war, however, official operational analysis tended to be very positive. See, for example, RM, Ace No. 7105, *Bomber Command Quarterly Review*, No. 1 to No. 11, April-May-June 1942 to October-December 1944; and *Bomber Command Review*, 1945. qv Webster & Frankland, *The Strategic Air Offensive Against Germany 1939-1945*, Vols 1 and 2; and Maclsaac, *Strategic Bombing in World War II*. For the best account of the man who directed the RAF's bombing campaign for most of the war, see Saward, 'Bomber' Harris.
- 5 AA, CRS A5954, Box 238.
- 6 Robertson, *Australia at War*, p 122.
- 7 McCarthy, *A Last Call of Empire*, pp 8-9.
- 8 *ibid.*, p 14.
- 9 Quoted in McCarthy, *A Last Call...*, p 16. qv the Hon J.V. Fairbairn, MP, 'Ultimate Victory Depends on the Successful Carrying Through of the Air Training Scheme', *Aircraft*, 1 April 1940.
- 10 RM, War Report of the Chief of the Air Staff, Royal Australian Air Force, 3 September 1939 to 31 December 1945, to the Minister for Air, pp 43-6.
- 11 Those squadrons were formed under Article XV of the EATS agreement. While the aircrew may have been Australian, they were supported by RAF ground crew. Further, by May 1945, there were only 1488 Australian aircrew serving with Article XV Squadrons, while 10 352 were attached to the RAF. McCarthy, *A Last Call...*, p 26.
- 12 For example, Air Vice-Marshal Williams served as AOC Administration in RAF Coastal Command; Air Vice-Marshal F.H. McNamara was AOC RAF Aden; Air Commodore AT. Cole commanded No. 235 Wing; Group Captain B.A. Eaton commanded No 239 Wing; and Air Commodore J. McCauley was Air Commodore Operations with the 2nd TAF.
- 13 Air Marshal Sir James Rowland, Interview, Sydney, 14-3-90; Air Vice-Marshal I.D. McLachlan, Interview, Sydney, 13-3-90; qv Williams, *op. cit.* pp 263-8, 278, 300-1, 335-6.
- 14 Robertson, *op. cit.*, p 56.
- 15 See Frankland, *The Bombing Offensive Against Germany*, pp 42-3, 47-9; Maclsaac, *The United States Strategic Bombing Survey*, Vol 1, pp x-xii, xxvi; and Sherry, *The Rise of American Air Power*, pp 99-100, 120.
- 16 National Library of Australia (NLA), Transcript of Interview, Air Marshal Sir John McCauley," 3-12-74.
- 17 RM, RAAF, *Australian Air War Effort* (10th edn), 31-8-45, Appendix G.
- 18 CAS from 5-5-42 to 13-1-52. qv Jones' autobiography, *From Private to Air Marshal*
- 19 *Sunday Press*, 20-1-85.
- 20 That opinion has been expressed by: Air Marshal Sir Valston Hancock, Interview, Perth, 3-4-90; McLachlan, Interview; and Air Vice-Marshal L.S. Compton, Interview, Sydney, 13-3-90. Hancock (CAS from 29-5-61 to 31-5-65) was RAAF Director of Operations and Plans in 1942 and commanded No. 71 Wing in 1945; McLachlan was SASO No. 9 OG and had served in North Africa; Compton was a Spitfire pilot in the UK and the SWPA. Air Chief Marshal Sir Frederick Scherger (CAS from 19-3-57 to 28-5-61), who commanded No. 10 OG and the 1st TAF as a group captain during the war, has noted the need for the RAAF continually to prove itself to the senior American commanders: see Rayner, *Scherger*, pp 70, 78.
- 21 *Herald*, 27-12-41.

- 22 RHS, Supplement No. 1 to War Cabinet Agendum 404/1942, 23-11-42. Those battles took place in May and June 1942.
- 23 Curtin, 'Australia and the War', 4-5-44, quoted in Powell, *The Shadow's Edge*, p 95.
- 24 In late December 1941 McCauley attended a conference in Singapore at which he was 'amazed' to 'hear the small force the Commander-in-Chief considered sufficient to stabilise the position in Malaya'. McCauley advised the C-in-C and the AOC Far East that the island's 'air inferiority would increase so that eventually Singapore would be left defenceless against air attack. This was obvious to any air officer and was exactly what happened'. RAAF Base Richmond, Diary, Air Commodore J.P.J. McCauley, November 1941-February 1942. The C-in-C was Air Chief Marshal Sir Robert Brooke-Popham, and the AOC Air Vice-Marshal C.W.H. Pulford. Both were RAF.
- 25 RHS, War Cabinet Agendum 192/1942, 27-3-42.
- 26 RHS, War Cabinet Agendum 116/1942, 64-42.
- 27 Powell, op. cit., p 87.
- 28 RHS, War Cabinet Minute 2109, 17-4-42.
- 29 RHS, War Cabinet Agendum 30/1944, 12-1-44.
- 30 RHS, War Cabinet Minute 2109, 17-4-42.
- 31 MacArthur described his first meeting with Curtin in his autobiography: 'We promptly came to a sense of mutual trust, cooperation and regard that was never once breached by word, thought or deed'. MacArthur, *Reminiscences*, p 151. For other comment on the Curtin/MacArthur relationship, see Homer, *High Command, passim*, but esp. pp 186-96; and Grey, *A Military History of Australia*, pp 174, 177, 179, 186.
- 32 For examples of correspondence between the two, see MacArthur Memorial (MM), RG-4, USAFPAC, Selected Records from USAFPAC, Correspondence, Australia, 26-642 to 26-3-45.
- 33 The first commander of the AAF, General G.H. Brett, was dismissed by MacArthur; Kenney assumed command in August 1942.
- 34 AA, CRS A5954, Box 238.
- 35 loc. cit. Australia's CNS was Admiral Sir Guy Rolfe, RN; the CGS Lieutenant General V.A.H. Sturdee. Admiral Leary was the American Naval Chief and General Brett the Air Commander.
- 36 *ibid*, Minute of 11-3-42; War Cabinet Minute 1988 refers.
- 37 *ibid*, Cablegram of 12-3-42.
- 38 *ibid*, Memorandum on Measures for the Coordination of Air Effort of American and Australian Air Forces in Australia, 30-4-42.
- 39 *ibid*, Kenney, Interview in the *Age*, 28-2-44.
- 40 See RHS, Air Board Agendum 7081, Appendix B, Letter Bostock to Drakeford, 25-2-46; and the Brisbane *Courier Mail*, 10-10-41, which reported: 'The appointment of Sir Charles Burnett as CAS will expire in six months...his successor will probably be either Air Marshal R. Williams or the present DCAS Wing Commander [acting Air Vice-Marshal] W. Bostock. Bostock is in the Middle East gaining first-hand experience of active service conditions in this war'.
- 41 Office of Air Force History (OAH), *General George C. Kenney Papers*, Dec 8, 1941 to Sep 3, 1945, 11 Vols, (hereafter Kenney Papers).
- 42 Horner, *High Command*, p 207.
- 43 AA, CRS A5954, Box 238.
- 44 Robertson, op. cit., p 136.
- 45 Jones, Interview; McLachlan, Interview; Group Captain (later Air Commodore) W.H. Garing (Commander and SASO No. 9 OG 1942-3), Interview, Sydney, 12-3-90.
- 46 OAH, 730.161-3, Correspondence, 5th Air Force, 1944-1945. Letter, Lieutenant General Ennis P. Whitehead (Commander 5th Air Force) to Major General C.L. Chennault, 21-8-45.
- 47 Quoted in James, *The Years of MacArthur*, Vol II, 1941-1945, pp 197-202.
- 48 McLachlan, Interview; Garing, Interview; Hewitt, *Adversity in Success, passim*.
- 49 OAH, 1028948, Oral Reminiscences of General George C. Kenney, 16-7-71 (Interviewer: D. Clayton James), pp 2-3.
- 50 Kenney considered Bostock 'the best qualified officer in the RAAF to handle operations'. See AA, CRS A5954, Box 238. qv Kenney, op. cit., pp 41-2; Hewitt, *Adversity in Success*, p 219; and Rayner, op. cit., pp 72-3.
- 51 Garing, Interview; McLachlan, Interview.

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- 52 See AA, CRS A5954, Box 238. qvRHS, Air Board Agendum 7081, Annex B, 25-2-46. MacArthur described Bostock's performance as 'superior in every respect. His efficiency, zeal and loyalty have been outstanding'. See National Archives (NATAR), RG-200, Papers of General Richard FL Sutherland (hereafter Sutherland Papers), Correspondence with the Australian Government, Message, MacArthur to Shedden, 5-2-44. Sutherland was MacArthur's Chief of Staff.
- 53 That was the opinion of, for example, Group Captain (later Air Marshal Sir) Charles Read (Commander of No. 31 Squadron and No. 77 Wing in the SWPA, and CAS from 21-3-72 to 22-3-75), Interview, Sydney, 19-6-90; McLachlan, Interview; Garing, Interview; Hancock, Interview; Wing Commander (later Air Commodore) A.D.J. Garrisson (armament officer North Eastern Area and 9 OG), Interviews, Canberra, 7-3-90 and 3-5-90; and Group Captain (later Air Commodore) G. Steege (Commander 73 & 81 Wings), Interview, 6-4-90.
- 54 AA, CRS A5954, Box 1083.
- 55 One argument is that Burnett, to whom Bostock was closely linked, was disliked by the Labor government. See Williams, op. cit., pp 294-7; Jones, op. cit., pp 81-3; and Hewitt, *Adversity in Success*, p 203. Bostock was also linked to Brett who, according to Kenney, 'spurned the Labor government crowd and [took] up with the Conservative crowd'. OAH, 1028948, Oral Reminiscences of General George C. Kenney, 16-7-71. For Bostock's nomination as CAS by Burnett, see AA.CRS A816, 31/301/300A; and RHS, Air Board Agendum 7081, Appendix B, Letter, Bostock to Drakeford, 25-2-46.
- 56 Horner, *High Command*, pp 352-3.
- 57 Jones, op. cit., pp 82-3.
- 58 RHS, *Confidential Air Force List*, February 1942. The RAAF seniority list was: Williams, Goble, Bostock, Anderson, Cole, Wrigley, McNamara, De La Rue and Jones. There were also five others who, like Jones, were listed as group captains but were acting air commodores.
- 59 Williams, op. cit., pp 295-6. Brett's list is contained in AA, CRS A5954, Box 238, Air Force Higher Service Direction, Organisation of Allied Air Forces in Australia, Administration and Control of RAAF, 9-3-42 to 27-11-42. Brett to Prime Minister, 14-4-42.
- 60 Horner, *High Command*, pp 352-3. Horner refers to cabinet consulting 'the organisation chart provided by Brett'.
- 61 Williams, senior to both, did not accept exile passively. As the RAAF's representative in Washington he regularly wrote direct to Minister for Air Drakeford, presenting his views on the full range of policy issues. If the opportunity arose he was quick to attack Jones, even to the extent of criticising his appearance. See RM, Williams Papers, Reports on Work at Washington and London and Letters to Mr Drakeford.
- 62 Numerous senior RAAF officers held that view: see Hancock, Interview; Garing, Interview; McLachlan, Interview; and Garrisson, Interview.
- 63 See Notes on the Higher Organisation of the RAAF, in AA, CRS A5954, Box 238.
- 64 *ibid.* Letters, MacArthur to Curtin, 21 and 22-3-43.
- 65 *loc. cit.*
- 66 Hewitt, *Adversity in Success*, p 234.
- 67 Robertson, op. cit., p 122.
- 68 AA, CRS A5954, Box 238.
- 69 OAH, Kenney Papers, Vol V, 6-4-43.
- 70 Wing Commander R.G. Bettiens, Squadron Leader Owen Price, No. 8 Squadron's Forgotten Hero (Unpublished Research Report, available at ADFA Library and National Library of Australia), Dickson, 1989.
- 71 Historical Research Centre (HRC), 730.161-3, Letters of Generals Kenney and Whitehead, and Assorted Policy Letters, 14 April 1943-1 October 1945; Letter, Whitehead to Kenney, 2-8-43. Whitehead was deputy commander and then commander of the 5th Air Force from 1942 to 1945.
- 72 Steege, Interview; Group Captain B. Pelly, Interview, 18-4-90. qv Steege, quoted in Hewitt, *Adversity in Success*, p 220.
- 73 McLachlan, Interview; Garrisson, Interview.
- 74 McLachlan, Interview. By contrast, according to McLachlan, Air Commodores Cobby and Scherger, who later held equivalent positions to Hewitt, had no access to the highest level AAF planning.
- 75 McLachlan's observation was that Hewitt worked extremely hard on building good relations with his American counterparts, and succeeded to the extent that he could get Kenney's ear when other Australians could not. McLachlan, Interview. That opinion was supported by Steege, Interview.

- 76 For the official version, see Odgers, *Air War Against Japan 1943-1945*, pp 102-3. Hewitt was dismissed in part because of alleged 'morale and discipline' problems in No. 9 OG. However, according to Hewitt, he was the victim of a 'smear' campaign orchestrated behind his back by a dissatisfied staff officer he had sacked. See Hewitt, *Adversity in Success*, pp 165, 180-1, 200-03.
- 77 McLachlan, Interview. According to Hewitt, Kenney subsequently offered him a job in the US air force. See Hewitt, *Adversity in Success*, p 219.
- 78 OAH, Kenney Papers, Vol 1, August 1942. Kenney noted that Lukis did not appear to 'have much on the ball' and described him as 'not so hot'. In Vol 8, February 1944, Whitehead expressed serious reservations about Lukis as AOC No. 9 OG, and he and Kenney considered requesting a replacement, qv McLachlan, Interview.
- 79 Odgers, *Air War Against Japan 1943-1945*, pp 130, 170-1.
- 80 That was Shedden's opinion. See AA, CRS A5954, Box 238. McLachlan held the same view, Interview, qv Kenney, op. cit., p 80: in referring to the 'feud', Kenney stated that while it was sometimes a 'nuisance', he 'liked the situation as it was'.
- 81 AA, CRS A5954, Box 238.
- 82 James, op. cit., pp 114-15, 208-11; MacArthur, op. cit., p 151; Kenney, op. cit., pp 35-41, 94; and Long, *MacArthur*, pp 105, 108-9.
- 83 NATAR, RG-200, Sutherland Papers, Correspondence with the War Department, 4-4-42 to 11-5-43. Message, MacArthur to Chief of Staff (Marshall), 19-7-42. qv Horner, *High Command*, pp 345-9; and James, op. cit., p 200.
- 84 AA, CRS A5954, Box 238.
- 85 McLachlan, Interview; Garing, Interview.
- 86 Quoted in Odgers, op. cit., p 434; qv PRO, Air 8/1175.
- 87 The 1st TAF was formed out of No 10 OG in October 1944. It was the main mobile striking element of the RAAF.
- 88 Air Marshal Sir Charles Read recalled with wry humour that he realised the RAAF had been by-passed when, almost overnight, rations changed from the relatively high-quality American supplies, like chile con carne, to Australian bully beef. Interview, 19-6-90.
- 89 See Robertson, op. cit., pp 177-81; and Odgers, *Air War Against Japan 1943-1945*, pp 463-4.
- 90 HRC, 142.041-34, Letter, Kenney to Arnold, 17-9-44.
- 91 RHS, Borneo Campaign, 1st TAF Personnel, Interview with Air Commodore H. Cobby, 31-11-45.
- 92 Read, Interview; Garrison, Interview.
- 93 See AA, CRS A1 196, 60/501/108.
- 94 RHS, Notes on the History of the 1st Tactical Air Force, 25-11-44 to 15-8-45, p 5. »
- 95 *ibid*, pp 5-6. qv HRC, 706.3062, HQRAAF SWPA, Operations Report No 53, 19-25 May 1945.
- 96 Hancock, Interview; Steege, Interview; Pelly, Interview. In the same vein, Air Vice-Marshal A.T. Cole, AOC North-Western Area during 1943-44, commented that when support for operations in New Guinea was needed, his instructions consisted simply of a note from General Kenney 'to hit out at the Japs within the scope of [his duties]'. RHS, Borneo Campaign, 1st TAF Personnel, Interview with AVM Cole, 15-3-50.
- 97 OAH, Kenney Papers, Vol 10, 10-2-45.
- 98 RM, Williams Papers, Williams to Drakeford, 30-5-45.
- 99 RHS, Operation Oboe 2, 'Operation Montclair', 'Balikpapan'.
- 100 For details on the problems at Tarakan see Odgers, *Air War Against Japan 1943-1945*, pp 451-61; and Rayner, op. cit., pp 88-9.
- 101 RHS, Operation Oboe 2, 'Operation Montclair', 'Balikpapan', 1st TAF Operation Order No 2/45, 8-6-45.
- 102 HRC, 706.3069, Report of Oboe Two Operation.
- 103 Kenney, op. cit., pp 556-7.
- 104 Dutch settlers complained that the damage caused by the AAF bombing was far greater than necessary. Odgers, *Air War Against Japan 1943-1945*, p 484.
- 105 Kenney's ploy was not new: it was used often in World War II, and later became almost a standard *modus operandi* for American forces in Vietnam.
- 106 AA, CRS A5954, Box 238.
- 107 Hewitt, *Adversity in Success*, pp 231-2.

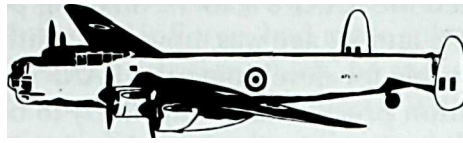
- 108 That was the opinion of, for example, Flight Lieutenant (later Air Vice-Marshal) L.S. Compton, an operational pilot at Morotai, Interview; McLachlan, Interview; Garing, Interview; Hancock, Interview; and Wing Commander (later Air Commodore) C.R. Taylor, Interview, Melbourne, 21-2-90. For the official version see Odgers, *Air War Against Japan 1943-1945*, pp 443-50. Odgers also wrote a 'fictionalised' account of the affair: see Odgers, *Aces Wild*.
- 109 RHS, Mr Justice Barry's Report into RAAF Matters - 1945, p 198.
- 110 RHS, War Cabinet Minutes from November 1944 to June 1945, Weekly Progress Reports by CNS, the C-in-C of the AMF and the CAS.
- 111 Air Chief Marshal Sir Neville McNamara, a P-40 pilot at Morotai, recalled his time on the island as 'demoralising' as there was nothing to do. He observed that there were more P-40s (Kittyhawks) on the island than the AAF could ever possibly use. Interview, Canberra, 13-8-90.
- 112 That observation was made by a number of RAAF officers: see Read, Interview; Taylor, Interview; Hancock, Interview; Compton, Interview; and McLachlan, Interview.
- 113 OAH, Kenney Papers, Vol 10, 26-4-45.
- 114 A different account of the incident appears in Jones, op. cit., pp 94-5.
- 115 RM, RAAF, *Australian Air War Effort* (10th edn), 31 August 1945.
- 116 RHS, Supplement No. 1 to War Cabinet Agendum 85/1940, Substitution of a General Reconnaissance Squadron for No. 7 (Fighter) Squadron, 17-4-40. The chiefs were Admiral Colvin, General Brudenell White and Air Chief Marshal Burnett.
- 117 RHS, War Cabinet Agendum No 151/1940, 28-6-40.
- 118 RHS, War Cabinet Minute 1579, 12-12-41.
- 119 RHS, War Cabinet Minute 1900, 18-2-42.
- 120 RHS, Supplement No. 1 to War Cabinet Agendum 404/1942, 23-11-42.
- 121 RHS, War Cabinet Agendum 113/1942, 22-2-42.
- 122 loc. cit.
- 123 RHS, War Cabinet Agendum 42/1943, 22-1-43. The bomber aircraft was the CA-4, also known as the CA-11.
- 124 RHS, War Cabinet Agendum 420/1942, 28-9-42.
- 125 RHS, War Cabinet Agendum 389/1943, 15-9-43.
- 126 RHS, War Cabinet Minute 3228, 21-12-43; and Agendum 457/1943, 18-12-43.
- 127 PRO, Air 8/1360. General H.H. Arnold was Commanding General of the USAAF, Admiral Jack Towers the Head of the (US) Bureau of Naval Aeronautics, and Air Chief Marshal Sir Charles Portal was the RAF CAS. qv Slessor, op. cit., pp 415-6. The arrangement was sometimes referred to as the Arnold-Slessor-Towers agreement as it was signed by Slessor for Portal.
- 128 RM, Williams Papers, Reports on Work at Washington and London and Letters to Mr Drakeford, Williams to Secretary of Department of Air, 19-9-42.
- 129 RM, Williams Papers. Letter, Arnold to Evatt, 22-7-43.
- 130 RM, Williams Papers, Memorandum in Connection with Aircraft Allotments to Australia in 1944. Others at the meeting included General Kenney and Air Marshal Welsh, the RAF Representative in Washington.
- 131 RM, Williams Papers, Memorandum in Connection with Aircraft Allotments to Australia in 1944.
- 132 loc. cit.
- 133 Robertson, op. cit., p 187.
- 134 The Commonwealth Aircraft Corporation described its Wirraway as a general purpose aircraft. While the machine was used with modest success as a dive bomber in the early days of the war, it was essentially a trainer, being a development of the North American NA-16/NA-33 trainer.
- 135 RHS, War Cabinet Agendum 229/40, 14-10-40.
- 136 RHS, War Cabinet Agendum 121/1940, 3-6-40.
- 137 A.T. Ross, *The Design and Production of Military Aircraft 1939-1945* (Unpublished Manuscript), Canberra, University College, UNSW, 1990. qv RHS, War Cabinet Minute 2503, 7-12-42.
- 138 The prototype CA-15 was one of the fastest piston engine aircraft ever built. It had a top speed of 448 mph at 26 000 feet and a range of 2540 miles: *RAAF News*, April 1966. It was, however, overtaken by the jet age.
- 139 By October 1942 Australia had built 620 Wirraway, 1035 Tiger Moth and 200 Wackett Trainer aircraft; and 122 Twin Row Wasp, 643 Single Row Wasp and 827 Gipsy Major engines. RHS, War Cabinet Agendum 458/1942, 5-11-42.
- 140 RHS, War Cabinet Minute 2503, 7-12-42.

- 141 RHS, War Cabinet Minute 3018, 6-9-43; and Agendum 328/1943, 30-7-43. qv Wackett, op. cit., pp 159-68.
- 142 RHS, Supplement No 1 to War Cabinet Agendum 177/1943, 1-6-43. qv Kenney Papers, Vol 3, 13-1-43: Kenney had advised Drakeford and Jones to cancel the McVey mission and simply order the P-47.
- 143 RHS, Supplement No 1 to War Cabinet Agendum 177/1943, 1-6-43.
- 144 RHS, War Cabinet Agendum 173/1944, 14-3-44.
- 145 For example, early in 1944 Group Captain G.E. Watt, Deputy Director Special Projects, Ministry of Aircraft Production, London, visited Australia and briefed representatives of the Department of Aircraft Production, the Department of Air and the Council for Scientific and Industrial Research. RHS, War Cabinet Agendum 173/1944, 14-3-44.
- 146 RHS, CAS Minute 1/501/347, 12-9-43.
- 147 See, for example, Jones, Interview; Rowland, Interview; McLachlan, Interview; Hancock, Interview; and Read, Interview, all of whom vigorously argue the pre-eminent place of the bomber in a 'balanced' air force, qv Williams, op. cit., p 305, who recorded his concern in 1943 over the RAAF's lack of 'real hitting power'.
- 148 RHS, War Cabinet Agendum No 151/1940, 29-10-40.
- 149 RM, Williams Papers, Reports on Work at Washington and London and Letters to Mr Drakeford, Williams to Drakeford, 3rd 8-43. There is a strong element of self-aggrandisement in Evatt's correspondence on this affair. The tone of his letters suggests he was concerned as much with his place in history as with getting suitable aircraft for the RAAF: see RM, Williams Papers, File on 71 Squadron Plan, June/July 1943. qv Jones, op. cit., pp 104-5.
- 150 *ibid*, 71 Squadron Plan, Letter, Roosevelt to Evatt, 11-6-43.
- 151 *ibid*, Letter, Evatt to Curtin, undated, but between folios dated 12 and 14-6-43.
- 152 *ibid*, Letter, Williams to Drakeford, 15-1-44.
- 153 *Sunday Press*, 20-1-85. qv Jones, op. cit. pp 104-5.
- 154 Robertson, op. cit., p 122; Hewitt, *Adversity in Success*, p 234.
- 155 RHS, War Cabinet Agendum 284/1943, 13-11-43.
- 156 Hewitt, *Adversity in Success*, p 232; McLachlan, Interview.
- 157 RHS, War Cabinet Minute 3156, 11-11-43. The exact amount was 9 023 450 pounds.
- 158 The Liberator B-24D had a maximum bomb load of 12 800 lbs, and a combat range of 2850 miles. A normal bomb load was about 8000 lbs, with a commensurate increase in range. Taylor, op. cit. pp 462-5.
- 159 For typical RAAF B-24 missions, see RHS, Unit Histories for Nos 21, 23, 24 and 25 Sqns from World War II.
- 160 Few issues from World War II generate more emotion than the strategic bombing campaign. A key point in the debate is the use of 'area' bombing, with its unavoidable indiscriminate consequences, as opposed to 'precision' bombing. The RAF openly pursued an area bombing strategy directed against German morale, while the USAAF claimed its crews generally attacked war industry targets using precision bombing. 'Precision', however, is a relative term, as shown by an examination of Frankland, op. cit., p 65; Sherry, op. cit., pp 148, 162-5; and MacIsaac, *The United States Strategic Bombing Survey*, pp xii-xvi. David MacIsaac has argued that the term 'strategic bombing' implies precision, and an intention only to attack military targets; and that the term should not be carelessly used as a synonym for 'terror' or 'morale' bombing; see MacIsaac, *The United States Strategic Bombing Survey*, p vii. In the case of World War II - which was the subject of MacIsaac's comment - that distinction seems highly questionable. Any USAAF claims to have pursued a strategy of precision bombing ring hollow against the background of the horrendous fire bombing attacks against Japan (see Sherry, op. cit., pp 257-92), not to mention the atomic attacks. In practice, any attempt to distinguish between strategic and terror bombing during World War II is likely to turn on either semantics or emotion.
- 161 Galbraith, *The Affluent Society*, pp 126-8. Galbraith's post-war analysis showed that while the centre of Hamburg had been devastated, war industries on the city's perimeter were not greatly damaged. Before the attacks, there had been a shortage of skilled labour in Hamburg. Now, with the loss of thousands of jobs in banks, garages, stores and so on, labour sought employment in the war industries. The raids thus 'forced a wholesale conversion of Germany's scarcest resource, that of manpower, to war production'.
- 162 RM, Ace No 7105, *Bomber Command Quarterly Review*, No. 6, July-August-September 1943.
- 163 MacIsaac, *The United States Strategic Bombing Survey*, Vol 1, pp 15-16.

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- 164 See RM, Ace No 7105, *Bomber Command Quarterly Review*, No 1 to No 11, April-May-June 1942 to October-December 1944; and *Bomber Command Review*, 1945. qv RM, Ace No 7086, *Bomber Command Operations* (with particular reference to RAAF), June 1943 to March 1944.
- 165 RHS, Air Board Agenda 5903, 12-6-44. Three wing commander General Duties posts were established, one at each of Bomber Command, Coastal Command and the 2nd TAF. qv Wing Commander (later Air Commodore) R.N. Dalkin, Interview, Canberra, 10-8-90.
- 166 Dalkin reported on target marking, radio counter measures, special aircraft fitments (e.g. radar), briefings and aircrew morale. Dalkin, Interview.
- 167 Douhet, *Command of the Air*, pp 6-7, 20.
- 168 An independent survey commissioned for the British War Cabinet in mid 1941 (the Butts Report) concluded that, of all the Bomber Command aircraft which reported successful attacks, only one-third had in fact got within five miles of their target. If all the aircraft despatched were included, that proportion was reduced by another third. Webster & Frankland, op. cit., Vol 1, pp 178-9.
- 169 RHS, War Cabinet Minute 2637, 15-2-43.
- 170 AA, CRS A2670, War Cabinet Agendum 32/1945; RHS, War Cabinet Agendum 453/1945, 4-10-45.
- 171 AA, CRS A2670, War Cabinet Agendum 32/1945.
- 172 M.Bar, 'Strategic Lessons of Chemical War', in *IDF Journal*, Summer 1990, p 54. The policy was declared in June 1942. qv Archives and Historical Studies Branch (AHSB), CRS A7942, Z52, The Defensive Use of Gas, November 1940 (Defence Committee Agendum 69/1940).
- 173 Directorate of Air Force Plans (DAFP), DGAWPP File No 1494, Nuclear, Biological, Chemical Warfare, September 1977.
- 174 Wing Commander (later Group Captain) J.B. Hampshire, Interview, 30-5-90.
- 175 Gillis (ed.), *Australian Field Trials with Mustard Gas, 1942-1945*, pp 72, 78, 84.
- 176 J. Legge, in Gillis, op. cit., p 18.
- 177 Hampshire, Interview.
- 178 Other trials were, however, carried out using Beaufort and Vultee Vengeance aircraft. See Thomson, *The WAAAF in Wartime Australia*, pp 221-5, 265-8.
- 179 Provision had been made for five months' consumption holding of the weapons. A 'sustained' ROE was to be maintained for five months. That rate was based on 330 B-24 sorties a month and 99 B-25 sorties. Bomb loads were to be 12x500 lb or 52x100 lb, and 5x500 lb or 24x100 lb respectively. AA, CRS A2670, War Cabinet Agendum 32/1945.
- 180 McNamara, Interview.
- 181 RM, Williams Papers, A Short Memorandum on the Development of the Royal Australian Air Force in Australia and the Provision of Air Forces in the South-West Pacific Area, 10-4-43.
- 182 Kenney, op. cit., p 341.
- 183 RHS, War Cabinet Agendum 90/1945, 14-3-45. The Lincoln was the latest mark of the Lancaster. At the time, the RAAF was associated with a desultory proposal by the British to form a Commonwealth 'Very Long Range Force', also known as 'Tiger Force', to deploy to the Ryuku Islands and attack Japan: see PRO Air 8/1175-6. David Day has suggested that neither government was particularly serious about the venture: see David A.Day, 'Promise and Performance: Britain's Pacific Pledge, 1943-5', in *War and Society*, Vol 4, No 2, September 1986, esp. pp 86-9.
- 184 AA,-CRSAA1969/100, 7/92/Air.
- 185 The 'RAAF Staff School' was included on the Distribution List for the 1st TAF Operation Order No 2/45 for Operation Oboe Two. RHS, Operation Oboe Two, 'Operation Montclair', 'Balikpapan'.
- 186 Hewitt, *Adversity in Success*, p 278.

CHAPTER
- FOUR -



AN INTERIM AIR FORCE
1946-1949

It should not be surprising that international aspirations in 1946 mirrored those of 1919. Once again there was an overwhelming wish for peace, disarmament and international order. A degree of success was achieved with the establishment of the United Nations Organisation (UNO) in October 1945, although it was many years before that body achieved any greater enduring authority than its short-lived predecessor from the 1920s, the League of Nations. Apart from aspirations and the creation of the UNO, however, the international situation in the late 1940s was fundamentally different from that following World War I. Any hopes for an era of peace and stability quickly foundered on the shoals of the Cold War. The advent of the nuclear age exacerbated the tensions of the East-West confrontation, and made even more important the development of positive, effective military doctrines.

Given the fundamental changes to the international strategic balance, post-war military planning was always going to be a complex business. As the Australian Defence Committee had noted in 1943, the structure of armed forces would depend upon matters to be decided by the post-war settlement, including the system of collective security adopted and the degree of responsibility undertaken by various regional powers.¹ The RAAF was not immune from those pressures and understandably experienced a degree of uncertainty over the direction it should take.² Nevertheless, the Air Force's prospects seemed far more encouraging than had been the case after World War I. If the 1920s had been a time when survival was the main intellectual issue, the immediate post-World War II period was, in purely military terms, one of enormous opportunity. It represented a major challenge to the quality of Air Force thinking.

A key planning document on post-war defence policy was considered by the War Cabinet in February 1945.³ Cabinet decided that Australia's immediate priority would be the provision of operational and logistic support units for occupation forces in the Pacific theatre. Once that task was in hand, attention would shift to demobilising the tens of thousands of servicemen and servicewomen whose main ambition was to resume their normal lives as soon as possible. Occupation forces and demobilisation teams were to be known as 'Interim Forces'. The RAAF's reorganisation for peace was to be completed in two phases. During the interim or 'transition' period, which was to last two years, 'tasks created by the cessation of hostilities' (that is, occupation and demobilisation) were to be completed.⁴ Concurrently, the period was to be used to lay the foundations for the second phase — the establishment of a peacetime RAAF — by 'preserving developed techniques, continual technical investigation and the maintenance of a basic training organisation'. Air Force planners envisaged the post-war RAAF as one which would both defend Australia against low-level threats and contribute to 'Empire' security.⁵

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A FAREWELL TO ARMS

The priorities set for the Interim Air Force were sensible. They were also self-evident and should not have especially taxed the RAAF's leaders. Shaping post-war doctrine at the beginning of the atomic, missile and jet age was, however, a different matter. The selection of the men who would be responsible for developing the RAAF's ideas was of the utmost importance. In turn, the selection process was always likely to be a controversial task, as the wartime establishment of 20 000 officers had to be reduced to less than one-tenth of that number.⁶

Shortly after the war ended, Minister for Air A.S. Drakeford instructed Air Vice-Marshal Jones to prepare plans for a force structure based on, *inter alia*, about 20 000 personnel.⁷ Anticipating events, the Air Board had already reviewed the performance of all officers holding a permanent commission to determine whether they should be retired, 'having regard to rank and age, and whether others should be regarded as having reached the limit in promotion in substantive ranks having regard to their records and war-time achievements'.⁸ The review was carried out for the Air Board under the direction of Air Commodore J.E. Hewitt who, following his sacking from the command of No. 9 Operational Group in December 1943, had been resurrected by Drakeford and Jones and was now the Air Member for Personnel (AMP).⁹ Hewitt noted at the time that Jones seemed keen to distance himself from the selection process, unlike Drakeford who took a keen and direct interest.¹⁰

Despite Jones' apparent indifference to the proceedings, the recommendations concerning the eight officers who were senior to him when he was appointed CAS in April 1942, and all of whom were still serving, are of some interest." Three decisions were relatively straightforward. Air Vice-Marshal Wrigley and De La Rue, both of whom were substantive group captains, were 53 and 54 respectively and had reached the retiring age for their rank, while Air Commodore Anderson, who was 53 against the retiring age of 57, was assessed as having little further to offer the Air Force, particularly as positions had to be opened up for young officers with potential. It would be difficult to dispute the board's reasoning concerning those three officers, although Wrigley's abilities as an analytical thinker might have warranted special consideration in an organisation that was about to re-examine its intellectual basis.

Having decided on Wrigley, De La Rue and Anderson, the board turned to the three substantive air vice-marshals, Williams, Goble and Bostock, who at 55, 54 and 53 were all well under the retiring age of 60; and Group Captains Cole and McNamara, who were 50 and 51. The reasons given for the dismissals of those five officers were riven by inconsistencies. It seems possible that even before recording its findings, the board had decided that, regardless of such factors as experience, ability and the RAAF's needs, some officers — and especially Williams, Goble and Bostock, the three men who had dominated the RAAF from 1921 to 1945 — had to go. "

The case used to justify Williams' dismissal was flimsy and implausible. Board members noted that Williams, although holding the senior rank in the RAAF, had during the war 'been employed in posts other than the most senior which has been occupied by an officer of less seniority'. In those circumstances, the board argued, it was 'impossible' to imagine that Williams could subsequently be employed in posts 'senior to those under whom he has been employed in war-time'. Given the confident tenor of Williams' letters to Jones and Drakeford during the war,¹² it seems most improbable that he would have been worried by any such arrangement. He clearly had not considered himself junior to Jones — at least in intellect, ability and reputation — during the war, and still saw himself as the man best qualified to set the RAAF's course. In any case, it is not uncommon in military organisations for an individual to supersede his seniors; Jones himself, after all, had done precisely that when appointed CAS. Williams made it patently obvious in his autobiography that he did not wish to be forced into an early retirement from the RAAF.¹³

In characteristic style, Williams vigorously disputed the decision, at the same time — perhaps unwittingly — exposing the Air Board's hypocrisy. He pointed out, first, that he was five years under the official retiring age and, second, that only five years previously the government had imported the RAF officer, Sir Charles Burnett, to be CAS at the age of 58. He also drew attention to the fact that the Interim Air Force 'had more substantive air vice-marshals and above' than had the wartime RAAF, a situation which, he suggested, should have permitted a sensible mix of both new and experienced senior officers. Williams was justified in dismissing the board's reasoning as 'specious'. Years later he still viewed the whole affair as 'one of the meanest pieces of Service administration in my experience'.¹⁴

The rationale for dispensing with Goble was also ostensibly based on seniority and age, and was just as unconvincing. After presenting the case against Goble, board members simply recorded that his retirement was 'considered to be necessary'. A different approach was taken with Group Captains Cole and McNamara, who were bracketed in the board's comments and were damned for not having taken 'a lead in the RAAF during the war commensurate with their seniority in the Permanent Air Force'.¹⁵ That statement was simply untrue in the case of Cole at least, whose posts during the war included Commander of No. 235 Wing (RAF) in the Middle East, AOC RAF Northern Ireland and AOC North-Western Area in Australia. Cole also served as air adviser during the Dieppe raid in 1942, for which he was awarded the DSO. When he died in February 1966, the *RAAF News* described him as a 'distinguished' wartime leader.¹⁶

The most significant case was of course that of Air Vice-Marshal Bostock. Unlike many of the others whose services were being dispensed with ostensibly because they had not gained sufficient operational command experience during World War II, Bostock was far and away the RAAF's most knowledgeable senior operational leader. His wartime record in charge of RAAF Command in the SWPA from 1942 to 1945 had attracted generous praise from Generals MacArthur and Kenney,¹⁷ while he was widely regarded within the RAAF as a most capable senior officer.¹⁸ At the age of 53, seven years below the nominal retirement age for his rank, Bostock would seem to have had a good deal to offer the post-war Air Force. However, just as there was no longer any room for Williams and Goble, nor was there for Bostock. He was criticised by the Air Board for his 'inability to work in harmony with others' (read Jones) who 'may, at one time, have been junior to him and yet subsequently occupied more senior posts'. In what was an extraordinary accusation against an officer who had been left in command of RAAF operations for three years, Bostock was said to have demonstrated a 'lack of balance and appreciation of responsibility', which made his continued employment 'undesirable'.¹⁹

Bostock formally appealed against the decision to retire him, pointing to his unique record of operational command during the war.²⁰ He made the valid point that in many respects the post-war task of providing expert advice to a government and directing a defence force can be more complex than during wartime. As he noted, 'it is essential to secure for this task the service of officers who have had all round experience in all phases of higher command'. According to Bostock, the British War Office and Air Ministry, and American Army authorities, had all concluded that 'the senior wartime operational commander of each Service is the most suitable officer to undertake the tasks of [peacetime] reconstruction of their armed forces'.²¹ He reminded the government that it had already selected the senior operational commander of the Australian Army as its first post-war CGS.

Air Vice-Marshal Bostock's appeal was supported by a personal letter from General MacArthur who, in what amounted to a job reference, described the Australian's performance in the SWPA as 'superior in every respect', and one which marked him as 'one of the world's most successful airmen'.²² In order to 'bring this matter officially to the full attention of the Australian Government', General MacArthur stated that he intended recommending the Australian 'for one of the United States' highest honours'. Similar

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supporting comments from General Kenney were attached. Drakeford stood firm and Bostock's appeal was rejected.

In fairness to Air Vice-Marshal Jones, it should be noted that the Air Board's questionable decision-making practices were not confined to officers who had been senior to Jones in 1942. Acting Air Commodore F.W. Lukis, for example, was assessed as not having taken a role commensurate with his seniority, yet during the war Lukis served as the Air Member for Personnel (AMP) and commanded No. 9 Operational Group; indeed, Lukis had been chosen to replace Air Commodore Hewitt in that most important post when Jones sacked Hewitt in December 1943. Less than two years later, Hewitt was back in favour as AMP and it was Lukis who was being sacked.²³ The board's comments on Lukis seem even more curious given that his performance in command of No. 9 OG had been poorly regarded by Generals Kenney and Whitehead, a fact well known to the RAAF's senior officers.²⁴ A case for his early retirement on that basis might have been more plausible than the one actually used.

The release of a revised *Air Force List* by the Air Board in June 1947 — the first since May 1945 — effectively marked the end of the period of mass demobilisation; as the board noted, 'mobilisation is now down to a minimum'.²⁵ The list also marked the end of an era. For the first time since the RAAF was established, great names from Air Force history like Williams, Goble, Wrigley and McNamara were missing. Some had probably outlived their usefulness. Others, though, seemed to have a great deal to offer a Service which was facing a time of challenge and opportunity, in which the most important commodity would be far-sighted and creative thinking. It is difficult to escape the conclusion that the decisions on who would remain in the RAAF to provide that intellectual guidance were based as much on a wish to settle old scores as they were with that challenge in mind.

Air Vice-Marshal Jones was to remain as CAS until 1952. His appointment of almost 10 years still stands as the longest continuous tenure in the RAAF's history, and gave him a unique opportunity to influence the development of Australian air power. Given that he was neither an inspiring leader nor a notable conceptual thinker — indeed, he was considered mediocre on both accounts²⁶ — some comment is warranted. Jones' strengths lay in his dogged personality and determined administration; additionally, he did not rock the political boat.²⁷ The post-war Air Force had to confront a vast administrative workload: demobilisation, the review of thousands of appointments, reorganisation, and the disposal of a huge amount of facilities and equipment ranging from bases and aircraft to human centrifuges, cudery, crockery and blankets.²⁸ Perhaps it was precisely Jones' unexceptional qualities as a leader and his willingness to accept the necessary but tedious administrative burden which secured his exceptionally long tenure.

DOCTRINE IN THE ATOMIC AGE

Air Vice-Marshal Williams may no longer have been wanted by the government or the new RAAF hierarchy, but his astuteness was still valued by some individuals. The impact of atomic weapons on concepts of national security obviously was going to be profound, and it was for that reason that Australia's Minister for External Affairs, Dr H.V. Evatt, wrote to Williams in Washington late in 1945 requesting his views on 'The Atomic Bomb in Relation to the Air Defence of Australia'. As Williams was Australia's man on the scene, Evatt's request was perfectly proper. In his reply, Williams stressed that his comments were personal and could not be taken to be those of the Air Board.²⁹

Williams told Evatt that the production of atomic weapons currently was beyond the capabilities and means of most countries, but ultimately they would become widely available. He saw no reason why delivery systems would not eventually extend past manned bombers to include 'guided missiles of the nature of those used by Germany in the recent war'. However,

because the accuracy of missiles degraded with distance, manned bombers were likely to remain the optimum platform:

Aeronautical development will result in the production of man-controlled aircraft of great speed, flying at enormous heights...over very long distances, and their use, with the assistance of Radar, will make identification of the target and the accurate application of the bomb to it, possible.³⁰

Brief comment was made regarding defensive techniques which might be employed against such aircraft, before Williams paraphrased Stanley Baldwin by stating that some bombers were always likely to get through.

Williams advised Evatt that if Australia wished to have an air force which would offer some protection against atomic attack, the RAAF would have to be equipped with aircraft of the 'highest performance' which would be able to intercept enemy aircraft in the air at 'great heights'. The Air Force would also need the capability to destroy hostile surface craft and ground installations associated with atomic weapons 'at considerable distances' in the island areas to the north. 'More than ever', Williams stated, 'Australia's defence is in the air'.

Consistent with the airman's traditional preference for offensive operations, Williams then turned to 'the obvious advantages' a small nation would derive from possessing a nuclear strike capability. He suggested that the atomic bomb in 'our hands but not in [those] of the enemy would be of tremendous value' as it would confer a 'hitting power out of all proportion to that otherwise possible'. Australia's senior airman was restating the classic air power doctrine, familiar to Douhet, Mitchell and Trenchard, of terror bombing and deterrence. To his credit, Williams concluded his letter by suggesting that the spread of atomic weapons should be prevented. He proposed placing all future development under the control of an international body, such as the Security Council of the United Nations Organisation.

Williams' forecast of the effect of nuclear weapons on Australia's air defence was correct as far as it went. However, because no mention was made of the psychology of the weapon, his report was incomplete. He should have known better. The 'moral' effect of terror bombing had been one of the central considerations of the classical theorists and Williams of all people should have appreciated that doctrine — which effectively was the subject of his letter to Evatt — does not develop in isolation. The fact was that, in one of those ironies that seem to have been the constant travelling companions of air power doctrine, the emergence of the ultimate air-delivered weapon raised serious doubts in some quarters about the continuing relevance of traditional air forces and air strategies. Instead of confirming the manned aircraft as the weapon of the future, atomic bombs were believed by a number of influential commentators to have made traditional air forces obsolete.

An article in *Aircraft* magazine in January 1946, titled 'What Will be the Future of the RAAF?' encapsulated those doubts.³¹ According to *Aircraft*, the emergence of atomic weapons had overturned not only the existing technology of warfare, but also 'the very basis of military planning and thinking'. So-called 'immutable' principles had been 'rendered obsolete' as the atomic bomb had shattered the 'continuity of the military art'. Once again, the relevance of air forces was questioned, as *Aircraft* asserted that the future could well see the demise of the model of 'mass air forces' on which the RAAF was based. The article's conclusion dismissed existing doctrine with the statement that 'no scheme of air defence propounded today is worth the paper upon which it is written'.

There were factions within the government which shared *Aircraft's* unease. At a Cabinet meeting held in March 1947 to discuss technology and defence, some ministers had been 'so amazed' by the 'latest secret information in the hands of the Government' that senior ministers found it necessary to allow their colleagues time to assimilate their new knowledge 'before expecting them to adopt a definite attitude'.³² The ministers' amazement followed a

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three-hour meeting during which Cabinet was apprised of the findings of a preliminary survey on recent scientific developments. A major recommendation of the survey was to defer all decisions 'as to the comparative value of the Army, Navy and Air Force...until all available scientific data [had been] thoroughly explored'.

Particular interest was shown in guided projectiles, 'better known as rockets'. Cabinet reportedly was very impressed by the fact that at the end of the war, Nazi Germany had been within 18 or so months of developing long-range, accurate rockets.³³ Thus, while there were to be no hasty decisions regarding the overall force structure, fears of possible missile attacks prompted some discussion on whether priority should be given to restructuring an air force equipped 'with rockets and similar appliances, as the major defence against external aggression'.³⁴ On 17 March 1947, in an article on Imperial defence, the *Argus* reported 'authoritative statements made recently in Canberra' that the development of Australia's plans for 'scientific defences' would lead to drastic reductions in the size of the Army, and possibly the Navy, while the Air Force would expand.³⁵ The *Argus* saw the recently announced intention of the Australian and British governments to establish a rocket testing range at Woomera as an important indicator of that policy.

Several weeks later Prime Minister Chifley stated that a 'push button' war would be the most likely defence emergency Australia would now have to face.³⁶ Chifley's opinion was shared by 'most Cabinet members', who considered that future warfare would consist of a long-range attack by guided missiles or aircraft, 'followed by large scale aerial attack from piloted planes'. Australia's defence needs were most likely to be met by the 'combination of an efficient air force, scientific methods, and a nucleus of trained Army men...the future defence of Australia [would] be based on pilotless supersonic aircraft with atomic warheads, swift moving armoured fighting vehicles, radar detection by sea and air, and swift moving surface and submarine craft'. One notable critic of that viewpoint was the CAS. Air Vice-Marshal Jones remained sceptical of push-button warfare in the short term at least. He questioned the accuracy, range and cost of guided missiles, and suggested that a reusable weapon system responsive to 'a human brain' would be more effective for the next decade.³⁷

Two major points arise from the 'push-button warfare' debate. First, the obvious confusion and contradictory viewpoints increased the difficulties faced by strategists. Politicians were likely to be reluctant to commit funds, for example, to manned bomber forces which some experts believed would soon be redundant. Second, the theory was wrong. Despite the spread of missiles, manned aircraft remained the primary weapon of air forces. At the time, however, the issue clouded the defence planning process.

INTELLECTUAL BEACHCOMBERS: THE ARNOLD DOCTRINE

Largely because of the atomic issue, the RAAF once again found itself on uncertain intellectual ground. That was understandable: the government, too, was uncertain, and did not want to commit itself to a defence strategy which might soon be obsolete.³⁸ However, as has been pointed out, that strategic uncertainty also represented a tremendous doctrinal opportunity. While the immediate shape of military forces may have been unclear, the perceived threat of the Soviet Union and international communism was manifest. Governments and strategists were looking for direction. The years immediately following World War II were the Air Force's best chance since 1921 to promote air power in the defence of Australia, in an innovative and constructive fashion.

The RAAF was not up to the challenge. It lacked either the will or the capability to prepare its own fundamental guidance, instead formally endorsing the concepts presented in a journal article titled 'Air Power and the Future', written by the Commander of the USAAF, General H.H. ('Hap') Arnold.³⁹ Once again, RAAF doctrine was being expressed in *de facto* form. In most respects Arnold's paper was a masterful examination of air power doctrine, in

both its existing and likely future forms. Because the paper received the RAAF's official endorsement, its major features are reviewed in detail below. However, the fact remains that it was written by an American to meet American strategic goals. Thus Arnold focused on, among other things, global influence and nuclear arms, neither of which was relevant to the exercise of Australian air power. Those issues alone would seem to make the RAAF's wholesale endorsement of Arnold's paper questionable. Perhaps more disappointing, though, was the missed opportunity to establish an independent, indigenous, intellectual foundation for the RAAF, based on Australian ideas and developed to meet Australian conditions.

The circumstances surrounding the RAAF's endorsement of General Arnold's work seem curious. Air Vice-Marshal Jones sent two copies of the article, removed from the journal in which it appeared, to the Secretary of the Defence Department, Sir Frederick Shedden. The CAS asked the Secretary to pass the article to the Prime Minister and Minister for Defence. Jones told Shedden in his covering letter that, although written for the United States, Arnold's paper contained 'conclusions and proposals [which] are in most instances equally applicable to Australia, and I may say they are in close agreement with the policies which we are endeavouring to follow in the RAAF'.⁴⁰ That was the extent of the CAS's professional comment on the paper. It seems extraordinary that the RAAF could cut an article out of a magazine and send it to the Prime Minister, without comment, as its fundamental doctrine. In what may have been an attempt to excuse the Air Force's intellectual laziness, Air Vice-Marshal Jones did mention to Shedden he had no doubt that, in writing the report, Arnold had made full use of the 'enormous resources of experience and technical information available' to him. Yet the RAAF itself was scarcely deficient in either of those resources, having just fought a six-year war employing over 170 000 personnel and using some of the most advanced equipment available. Many of those personnel should have been competent to write Australian doctrine. In May 1945 Jones had at his disposal over 700 officers of the rank of squadron leader and above in the General Duties Branch; and even after post-war demobilisation there were still about 170.⁴¹

General Arnold's paper consisted of an analysis of lessons from World War II, the characteristics of air power, and a proposed structure for the post-war American air force. Arnold started with an observation which remains central to understanding the nature of air power. Wars, he stated, were no longer the sole province of fighting forces, but instead touched entire nations. Air power had made it possible to by-pass all lines of defence to deliver devastating blows at economic, industrial, governmental and population centres. Such attacks could be made within hours rather than the days, weeks or months required by surface forces. Because of air power, surface forces now had to be sufficiently mobile and/or dispersed to avoid detection and destruction from the air. Accordingly, control of the air had become the first essential for offence as well as defence. Arnold acknowledged that a modern, autonomous and thoroughly trained air force would not alone be sufficient to protect a nation; but without that now-dominant element of combat power, there could be no national security.

General Arnold identified three major air power lessons from World War II, each of which emerged from a German mistake. The Nazis had underestimated the power, technological resources and determination of the RAF during the Battle of Britain; failed to appreciate the threat of the United States' heavy bombers; and neither understood nor adopted the strategic uses of air power. (Surprisingly, Arnold ignored the contribution to the strategic bombing campaign made by the RAF's Bomber Command.) If the United States (and, by inference, its allies) were to avoid similar mistakes, the problems which 'may have to be faced in 1975 or 1985' would require 'imagination, boldness, and the utilization of available skills, man power, resources'. Nowhere would those attributes be needed more than in the development of air forces.



General H.H.(Hap) Arnold: Air power and the future. OAH.

A practical definition of air power then followed. That definition is notable for the relationship it establishes between an air force and its doctrine. Military air power — or 'air force' — was described by General Arnold simply as the capacity to 'deliver cargo, people, destructive missiles and war making potential through the air to a desired destination to accomplish a desired purpose'. It was a capacity derived not just from the war-making components of aviation, but from the total aviation activity, 'potential as well as existing'. In a seminal passage, Arnold expanded on the subject of 'potential' by arguing that an air force is always verging on obsolescence and that, in times of peace, its size and replacement rate would always be inadequate to meet the demands of war. That observation led to two crucial conclusions. First, air power should to a large extent be measured by the ability of an existing air force 'to absorb in time of emergency the increase required by war together with new ideas and equipment'. Second, national safety would be endangered by an air force whose doctrine was tied 'solely to the equipment and processes of the moment'.⁴² Any air force which did not keep its doctrine ahead of its equipment and its vision far into the future could only 'delude the nation into a false sense of security'.

General Arnold suggested that air force doctrine would largely look after itself if a number of practical, organisational principles were observed. An air force should, he argued: maintain a striking arm in being; ensure that the military and civil aviation industries are capable of expanding 'harmoniously' and rapidly; maintain well-equipped overseas bases; support an alert and aggressive system of commercial air transportation; remember that it is the team of the Army, Navy and Air Forces working in close cooperation that gives armed services their strength in peace or war; and promote scientific research and development, and maintain a close contact with industry. Those broad objectives would be best served by an organisation which was flexible in its basic structure and amenable to change. At least two of Arnold's principles — those on industry expansion and overseas bases — were of questionable relevance to Australian doctrine, a point which passed without comment in the RAAF's endorsement of the article.

The section on doctrine and organisation was followed by a discussion on strategic bombing, in which numerous important points were made. Arnold stated that the critical elements of conducting a campaign were the maintenance of an excellent intelligence system, continual analysis of possible targets, and the development and regular updating of a wide range of contingency plans. Most important, however, was the principle of maintenance of the aim. Once priorities had been identified and a campaign launched, it was essential to carry it through 'inexorably and without interruption'. Any diversion of effort to 'purposes of momentary importance [would] endanger the success of a whole air campaign'. General Arnold also suggested that the real effects of strategic air bombardment during World War II were seldom immediately apparent. He compared strategic bombing to a cancer which produces internal decay, ultimately resulting in death.

Military aviation had been characterised by extraordinary technological change. Because he appreciated the importance of planning well into the future, General Arnold concluded his paper by commenting on 'New Concepts' such as the 'Influence of Atomic Energy on Air Power' and 'Jet Propulsion and Rockets'. Although speculative, the discussion was reasoned and informed, and a number of its predictions have since proven accurate. At the same time, Arnold overstated the likely impact on future conflicts of atomic weapons and long-range missiles. It was only a short step from Arnold's assessment to the assumption that atomic weapons and missiles would make all other forms of warfare redundant. Neither General Arnold nor Air Vice-Marshal Jones had said that, but those who wished to could have drawn the inference and, as was pointed out above, it was precisely that possibility which caused Cabinet to vacillate during the following 18 months when it had to decide on the nature of Australia's post-war defence.

Chapter Four

COLLECTIVE SECURITY AND FORWARD DEFENCE

As Chapter Two pointed out, Australia's Defence Forces had two main roles between the wars. First, they were supposed to provide local protection against relatively small-scale raids, a role which implied a minimum level of self-sufficiency. The parlous state of the armed forces in September 1939 suggests that level was not achieved. Second, Australia had to contribute to Empire collective security by providing expeditionary forces for overseas service, a capability which was the nation's insurance policy against larger scale threats. Once the dangerous early years of the war had been negotiated and mobilisation was in full swing, Australia met its collective security obligations splendidly. It continued to do so in the immediate post-war years through its contribution to the British Commonwealth Occupation Force (BCOF) in Japan and the RAAF's participation in the Berlin airlift.

The 'dual' strategy of forward defence and local defence was again endorsed after the war: In view of Australia's size, geography and relative economic weakness, and the prevailing strategic uncertainty, the confirmation of that strategy was sensible. The question really was one of how it could best be implemented, taking into account the lessons of World War II. Here, fundamental changes were proposed, largely as a consequence of the rise of air power during World War II. Post-war defence planning took as its starting point the assumption that 'the worst may happen'.⁴⁴ According to the Department of Defence, complacency and excessive dependence on outside help had in the past almost been fatal to Australia. The obvious example was the fall of Singapore: the loss of the command of the sea which followed that shattering event had placed Australia at risk. If that mistake were not to be repeated, the department argued, the nation would have to maintain the essential nucleus of the armed forces *and* the reserve capacity for expansion in an emergency. A force structure which increased the capacity for local defence, while maintaining the capability to contribute to collective security, was needed.

A major planning document prepared by the Defence Committee in December 1946 identified the major roles for each of the Services (see Figure 4.1).⁴⁵ The Army and Navy retained their pre-war expeditionary force responsibilities, as well as home defence garrison duties. However, given that in two world wars the Australian Imperial Force (AIF) had been by far the nation's major contribution to collective security, the failure explicitly to nominate an overseas role for the Army was notable. The reason for that shift of emphasis can be found in the RAAF's tasks. On paper at least, the Air Force had been earmarked to take the leading role in forward defence, with the centrepiece being a 'Mobile Task Force' (MTF) which would be ready to move 'wherever required for strategic purposes'.⁴⁶ With its dramatically improved speed, flexibility, range, reliability and hitting power, it was the Air Force, rather than the Navy or Army, which theoretically best enabled the Australian government to structure a force which could both defend the nation against raids and pay the premium for collective security. Especially in the case of a country like Australia, it was logical to substitute technology for manpower. The gap between air power doctrine and technology seemed to have been narrowed; the predictions of the air power theorists seemed largely achievable.

Notwithstanding Australia's new links with the United States, the ties that bind remained strong. Collective security in the first instance was still sought through the Imperial connection. Indeed, as early as mid 1944, concern over growing American influence in the East had prompted Curtin to write to Churchill regarding the need to restore British prestige in 'our Far Eastern Empire'.⁴⁷ That rather curious attitude for a socialist prime minister was reiterated by Curtin's successor, J.B. Chifley, who stated that all British nations had a 'vital interest in the maintenance of Empire communications and their responsibilities must accordingly extend beyond the defence of their own territories'.⁴⁸ Chifley identified the Imperial interests of immediate concern as the security of Australia, New Zealand and western Canada, including their sea and air communications; the defence of possessions and

dependencies in the Pacific and Indian Oceans, many of which were considered to have a special strategic value as bases (for example, Ceylon, Malaya, Borneo and Manus Island); and the sources of supply of raw materials in the Netherlands East Indies, India, Persia, Malaya, Borneo, New Guinea and various Pacific islands.⁴⁹ The sheer scope of that outlook meant that, again, any Australian contribution to collective security was likely to turn primarily on air power.

FIGURE 4.1

ROLES FOR THE POST-WAR FORCES, 1946

NAVY

- A Mobile Task Unit consisting of aircraft carriers with their escorts, capable of forming part of an Empire Task Force and of cooperating with the United States Navy
- A Fleet Train for the maintenance of the Mobile Task Unit
- A Sea Frontier Force consisting of escorts for our shipping and for the seaward defence of our bases
- Amphibious craft for combined operations

ARMY

- Standard formations designed for operations on normal terrain, and for amphibious operations, but capable of conversion to meet the conditions of jungle warfare
- Garrison forces for the protection of our bases against raids, and for internal security
- Support and maintenance units

AIR FORCE

- Mobile Task Force, including units for long range missions and transportation, ready to move wherever required for strategic purposes or in support of the other Services
- Forces for the protection of our bases and focal areas against sporadic raids

Source: AA, CRS A5954, Box 1634, Post-War Defence Policy: Empire Cooperation; Nature of Post-War Forces, Australian Post-War Defence Policy, Program of Action, 23-12-46.

The United Kingdom endorsed Australia's renewed commitment to forward defence, but suggested that the emphasis on the India-Pacific region was short sighted. British strategists believed that Commonwealth countries had to look beyond their own backyards. For Australia, that meant focusing on the Middle East, which Whitehall saw as 'an indispensable bridge which joins East to West...[it]...is the link which should join [Commonwealth] strategic policy to our own'.⁵⁰ Under British strategy, if war with the Soviet Union eventuated, the first allied units employed would be 'highly efficient bomber forces capable of deep penetration and the ability to strike decisively'. Britain therefore argued that

Australia's priority in a global conflict should be the deployment of the RAAF's Mobile Task Force to the Middle East.

If the ties that bind were strong, so too was strategic pragmatism. Having acknowledged the primacy of the Imperial connection, Australia's defence planners extended the scope of their already considerable outlook by linking their security interests to those of the United States.⁵¹ A regional security arrangement was envisaged, the crux of which would be 'the reciprocal use of bases in the Pacific'.⁵² According to the *Herald*, Australia's post-war defence policy in the Pacific would be based on the implicit understanding that the United States would hold the outer ring of islands (the Mariannas, Carolines and Marshalls) which constituted Australia's first line of defence.⁵³ Australia itself would assume responsibility for any threats which might arise inside the island defensive chain. Because forward bases were central to that strategy, a 'big elaboration' of defence establishments 'at or near Darwin' was foreshadowed, while Sydney was considered likely to become the main base on the east coast, supporting a northerly base at Manus.

A MOBILE TASK FORCE

The challenge now facing the RAAF was to structure a force which would accommodate not only the government's apparent intention to take a more prominent regional defence posture, but also the inevitable resource constraints. Initially the RAAF submitted a plan for 34 squadrons and 34 592 personnel.⁵⁴ Plan 'A' as it was titled was probably little more than an ambit claim, for it was inconsistent with a government stricture that the personnel establishment of the RAAF should not exceed 20 000. As such, the plan was unwise.⁵⁵ Its extravagant claims bought a rebuke from Minister Drakeford and, more interestingly, a reminder from Prime Minister Chifley that air power doctrine is not immutable. The Prime Minister advised the Air Board that there was no need to provide an air defence capability during the two years of the 'Interim' period. Absolute command of the air ('air supremacy') had been established during the war, and in the Australian region at least that situation could be expected to prevail without any further expenditure of resources for the next few years.⁵⁶ Chifley was not disputing the RAAF's belief that control of the air was the first requisite in combat; rather, he was astute enough to appreciate that for the time being it existed in *de facto* form. It would have been better if the RAAF had been addressing that kind of concept in its planning, rather than making unrealistic bids and forcing the Prime Minister to define doctrine.

Having missed its chance to set the agenda, the RAAF rapidly progressed through Plans 'B' and 'C' to Plan 'D'. It was Plan 'D', presented by Air Marshal Jones in April 1947, which finally gained acceptance as the broad blueprint for the post-war RAAF.⁵⁷ Personnel numbers had been pared to 12 625 and flying squadrons to 16, including four CAF squadrons and miscellaneous flying units such as target towing and survey squadrons. There were to be four main elements in the reorganised Air Force: the Mobile Task Force, a 'static' Home Defence Organisation based on the four CAF squadrons, a Training Organisation and a Maintenance Organisation. As Figure 4.2 shows, the Mobile Task Force, with its emphasis on mobility, speed, range and flexibility — that is, the capability to bring the maximum force to bear at a given point in the minimum time — was the centrepiece of the new Air Force.

Air Marshal Jones' foreword to Plan 'D' restated the decisive role played by air power from 1939 to 1945, and confirmed control of the air as a prerequisite for any military campaign. In a passage which drew on the classical theorists, he also suggested that under some circumstances air power which was used to 'weaken the morale and industrial structure of an enemy may be decisive' by itself. Theory was supported by the examples of the atomic attacks against Japan and the bombing of Germany before the Normandy landings. The CAS's comments also revealed some of the uncertainty evident in post-war doctrine generally. 'It is

FIGURE 4.2

*STRUCTURE OF THE MOBILE TASK FORCE,
APRIL 1947*

FIGHTER WING

- Two Long Range Fighter Squadrons
- Mobile Fighter Control Unit
- Headquarters
- Maintenance Squadron
- Base (Support) Squadron

HEAVY BOMBER WING

- Three Heavy Bomber Squadrons
- Maintenance Squadron
- Headquarters

TRANSPORT WING

- Two Transport/Lift Squadrons
- Maintenance Squadron
- Headquarters

TACTICAL RECONNAISSANCE

- One Tactical Reconnaissance Squadron

Source: AA, CRS A5954, Box 1842, Defence Policy, Post-War RAAF— Nature, Organisation and Strength, April 1947.

clear', Jones wrote, 'that further development of air weapons and rockets will have a most profound effect on war', as a consequence of which existing weapons were likely to become obsolescent in a comparatively short time. Thus, while (allegedly) providing 'sufficient' first-line aircraft for operations and training, Plan 'D' also proposed 'extensive research and development along the latest scientific lines of thought'. Finally, just as it had done in the pre-war years, the Air Force gave its full support to the concept of a modern, self-sufficient, local aircraft industry.

By the time Plan 'D' was presented, considerable concern over the state of Australia's interim force, and the apparent lack of policy development, was being expressed.⁵⁸ Leading the criticism of the Air Force was Jones' old protagonist, Air Vice-Marshal Bostock. From his new-found position as 'Special Aviation Correspondent' for the *Herald*, Bostock condemned the RAAF's plan, which he dismissed as the product of a 'confusion of ideas and superficial

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thought'. Given Bostock's animosity towards Jones, his opinion of the RAAF's concept of operations should be viewed with circumspection.⁵⁹ Nevertheless, his comments on the factors which planning staffs should take into account were logical and, in the atmosphere of uncertainty then prevalent, practical.

In Bostock's opinion, Plan 'D' was the end result of an irrational assessment of Australia's strategic situation and needs. He was unimpressed by the proposed disposition of the reorganised RAAF, in which operational squadrons would be based only in New South Wales and Queensland. He noted that South Australia and Tasmania would have neither combat nor reconnaissance squadrons; while the one-and-a-half million square miles of the Northern Territory and Western Australia would have only half a dozen airfields for strategic and general reconnaissance purposes. As Australia's senior operational wartime air commander pointed out, that meant that 75 per cent of Australia's coastline would not be 'readily accessible to the few combat squadrons which the permanent air force will provide'.⁶⁰ He described as 'reprehensible' the absence from the proposed force disposition of 'a well thought out system of operational bases in the north and north west', from which a well-balanced, highly mobile force could be operated at short notice. That planning failure was considered even 'more serious' than the 'apparent disregard for the need for adequate operational bases for the protection of our seaboard cities and sea routes'.⁶¹

The real issue, though, in Bostock's opinion, was the RAAF's intellectual timidity in the face of change and the missile/atomic problem, which he suggested Plan 'D' did not address. He agreed it would be rash to make definite forecasts of the methods which might be developed for the use of atomic weapons, and supported the RAAF's research and development program. At the same time, those factors were not an excuse for indecision. Bostock advocated a practical response to the problem, returning as had Williams and Salmond in years past to the geography that dominates Australian security planning. It was most probable, Bostock argued, that for some time to come the distances from foreign countries to Australia's most vital areas meant that 'flying projectiles' would have to be launched from ships or, more likely, aeroplanes. The key to the defence of Australia therefore lay in 'devising a means by which an enemy can be foiled in his attempts to place the missiles on our national centres'. In other words, the basic issue was one of preventing an aggressor from getting close enough to Australia to launch an attack with a reasonable chance of success.

Bostock suggested that the only logical approach for the RAAF was to apply 'the same principles and basic methods which were used by air forces in the last war', and which were likely to remain relevant to any war that may occur in the next 10 years. He identified five elements which were essential to the RAAF's structure: intelligence; early warning radar; a system of air bases with facilities to support rapid mobilisation; reconnaissance and fighter squadrons stationed at the nation's most vulnerable points (those units could be manned by citizen forces); and a highly mobile, well-balanced air striking force, ready for immediate action.⁶² Those elements would have to be supported by numerous ancillary services, including training, maintenance and supply establishments.

It is noteworthy that Bostock's concern over the perceived vacillation in national defence planning was shared by the former Commander-in-Chief of the Australian Army, General Sir Thomas Blarney. Like Bostock, Blarney acknowledged the importance of technological progress, but also warned that its full impact had yet to be seen. In the meantime, defence planners could not simply sit back and watch. Security planning and rearmament were essential and urgent.⁶³ The warnings sounded by Australia's senior wartime air and land commanders were not without foundation. Less than two years after the end of World War II, the operational strength of the RAAF had fallen from 61 squadrons to 13, including those on duty with the BCOF in Japan.⁶⁴ Air power on the Australian mainland consisted of just two fighter and three heavy bomber squadrons, with the fighters all based in New South Wales

and the bombers in Queensland. The dichotomy between doctrine and hardware which had characterised the pre-war Air Force was again in place.

THE LEADING EDGE

If the advance of technology had been perceived almost as an irresistible force by many air strategists before and during World War II, it became an article of faith after 1945. The RAAF embraced the notion fully as it sought to achieve the leading edge across a range of air power activities, including radar air defence systems, long-range weapons, aircraft, technical training, and research and development generally. Developments in each of those areas were rapid during the time of the Interim Air Force.

Prime Minister Chifley may have been correct when he told the RAAF that air superiority was not an essential capability during the interim period. Within a few years, however, that outlook had been reversed as the perceived threats to Australia changed. By 1949, Air Marshal Jones felt compelled to submit a comprehensive plan to Minister for Air Drakeford for the air defence of Australia, based on a new system of radar early warning and control.⁶⁵ Jones noted that at the end of World War II it was generally assumed that the world could look forward to at least 10 years of peace. However, only four years later the world was considered an 'uncertain' place, in which it was impossible to forecast how long it would be before a 'shooting war [replaced] the present cold war being waged so aggressively by Russia'. The advance of communism in Asia, dramatised by the success of Mao Zedong's forces in China, was considered to have brought the possibility of air attack against Australia 'very much closer'.

The Air Board believed that in the early stages of any war, the only avenues of attack against Australia would be from the islands to the north-west and north, or by seaborne forces. Because no likely enemy possessed aircraft carriers, extensive attack by seaborne aircraft was discounted. Consequently, the main danger to Australia would come from land-based aircraft operating from the islands. The most attractive targets for any such attacks would be the 'vitaly important areas of Australia' which were located in the south-east of the continent. Having defined the probable threat and target area, the Air Board turned to the question of defence. As its members noted, the advent of missiles and jet propelled aircraft had radically altered the balance of air defence, such that wartime radar warning systems were no longer suitable. An entirely new system was needed, incorporating a comprehensive network of the most modern radar sets in an 'interlocked' system.

The plan which the RAAF submitted for the 'complete radar coverage of Australia' was nothing if not ambitious. In order to provide protection along the coast from Albany through Darwin and Thursday Island to the eastern tip of New Guinea, a chain of 17 radar stations was required.⁶⁶ The south-eastern portion of the continent — which was defined as the area below a line joining Ceduna, Oodnadatta, Longreach and Mackay — needed an additional 32 stations, comprising a mixture of early warning and ground-controlled interception units. Information from the stations was to be transmitted via radio teletype to one central control headquarters in the Sydney area. The estimated cost of the total system was 11.5 million pounds, at a time when the RAAF's annual budget was 12.5 million pounds.⁶⁷

Like Plan 'A' before it, the proposal was a rather pointless ambit claim. In a supplement which tacitly recognised that fact, the Air Board suggested that, initially, a 'Phase 1' for the air defence of Australia should be implemented, under which radar stations providing discrete coverage were to be established at Perth, Darwin, Momote and Melbourne, while an area coverage was to be provided by an overlapping chain of stations in the Sydney-Dubbo-Brisbane triangle.

The threat assessment used to establish the areas for Phase 1 was also used to explain the RAAF's commitment to high technology. It was assumed that enemy bombers would operate at transonic speeds, either singly or in small formations of no more than six to 10 aircraft. Thus, if the RAAF were to defend Australia against the 'terror bombing' of the nuclear age, it needed fighter aircraft which not only could operate in the transonic/supersonic envelope, but also would be fitted with air intercept radar to supplement ground-controlled radars.⁶⁸ The drive to achieve a technological edge was not limited to fighter aircraft and radars. Research and development became a priority which the RAAF pursued through a number of diverse avenues. As well as securing representation on the Australian Council for Aeronautics, the Air Force supported the following initiatives: the establishment of an aeronautical laboratory at Fisherman's Bend in Melbourne, under the administration of the Council for Scientific and Industrial Research; the introduction of a Chair of Aeronautics at Sydney University;⁶⁹ and the construction at Woomera of a range and facilities for testing guided projectiles and supersonic aircraft.⁷⁰ The RAAF also laid the groundwork for participation in research and development 'in the whole field' of radio, radar and electronic counter-measures.

While those initiatives were important and impressive, aircraft production and acquisition remained the RAAF's major technological concern. The post-war munitions production policy which was outlined by Mr Chifley at the Prime Minister's Conference in London in 1946 contained two proposals.⁷¹ It was the government's intention to make the Commonwealth as self-supporting as possible in armaments and munitions of war, and to become the main source for the needs of the Empire in the Pacific. Addressing aircraft production specifically, the Prime Minister stated it was essential for Australia to maintain in peacetime a nucleus production of training and operational aircraft. The scale of that production in turn would be determined by the peacetime size and wartime expansion needs of the RAAF, and other military aircraft production activities throughout the Commonwealth.

The RAAF's re-equipment objectives were two-fold. It needed suitable aircraft to implement Plan 'D', and wanted to make the transition to the jet age without delay.⁷² The priorities arising from Plan 'D' were for a multi-engine, long-range type for the heavy bomber and reconnaissance roles, and a jet fighter to ensure the security of bases. When the plan was endorsed in 1947, the Lincoln, which was already in production in Australia, was considered satisfactory for the strike/reconnaissance role. A new fighter, however, was needed, as jet propulsion and airborne radar were now essential. In May 1946 after 'exhaustive examination' the Defence Committee had proposed the production in Australia of the de Havilland Vampire, powered by the Nene gas turbine engine.⁷³ Two main reasons were given for the proposal: the first was the necessity to replace obsolescent reciprocating engined fighters with jets, and the second the need to 'establish and maintain potential capacity for the [local] manufacture and development of the latest types of jet propelled aircraft'. A strong warning was sounded that if the RAAF and the Australian aircraft industry did not become involved in the manufacture and operation of jet aircraft, the RAAF would 'rapidly become outmoded'.⁷⁴ Despite subsequent support from Minister Drakeford for CAC to build a modified version of the American Grumman Panther instead of the Vampire,⁷⁵ construction of the British aircraft at de Havilland's Sydney factory proceeded, with the first delivery taking place in 1949.

Other less glamorous but equally important acquisitions were made. Largely because of the acknowledged need for the RAAF to do 'everything to keep abreast of the latest trends in research and development', approval was granted in October 1946 for the purchase of one Sikorsky Type S.51 helicopter.⁷⁶ For a machine which was to become an exceptionally valuable and ubiquitous combat weapon, the roles envisaged by the Air Board for helicopters were modest. Rotary wing aircraft were required primarily for bushfire control, rescue operations, flight performance testing and pest control. Some potential for 'mobile warfare in Australia and adjacent islands' was, however, recognised.

Hardware was not the only component of technical progress; without the right people, machines would be of little use. In March 1946 the Air Board decided to form a specialist Technical Branch for the RAAF's professional engineers.⁷⁷ Board members acknowledged that air operations would 'always depend for their success to a marked extent on the right handling of the related technical problems'. Informed direction of scientific and engineering resources, as well as the men who used them, was seen as 'fundamental'. The formalisation of the professional arm of the RAAF's engineering service was complemented by an equally significant move in 1947 when an apprentice training scheme was introduced to ensure the quality and quantity of technical tradesmen.⁷⁸

DETERRENCE AND TERROR BOMBING

In a now-famous passage, Bernard Brodie redefined global war in 1946 when he wrote:

Thus far the chief purpose of our military establishment has been to win wars. From now on its chief purpose must be to avert them. It can have almost no other useful purpose.⁷⁹

At the same time the British, too, were endorsing the concept of nuclear 'deterrence', notably through a paper prepared by a senior Defence official, Sir Henry Tizard, at the direction of the chiefs of staff. Reporting on future weapons and methods of warfare, the Tizard Committee concluded that the best method of defence against atomic weapons was likely to be 'the deterrent effect that the means of retaliation would have on a potential aggressor'.⁸⁰ Deterrence was a brutally sophisticated notion, the complexities of which have kept a legion of strategic scholars gainfully employed for almost half a century now. Whether or not the RAAF held a deep intellectual commitment to the concept remains problematical. The word was used freely in planning documents, but with no indication that the full range of possible consequences had been thoroughly examined. When considering the issue, at no stage did RAAF planners mention such critical notions as nuclear 'sufficiency', 'limited' or 'controlled' war-fighting, 'flexible response', 'unacceptable damage', or 'mutual assured destruction'. There is no doubt, though, that the RAAF slipped comfortably into the 'deterrent' school of thought. If the intellectual basis for that shift was questionable, the historical linkage was strong. There was a powerful — perhaps even emotional — connection between deterrence and the pre-war doctrine of terror bombing. For airmen, deterrence implicitly carried with it the authority of the ideas of Douhet and Trenchard, reinforced by the strategic bombing campaigns of World War II.

As was so often the case, the RAAF expressed its doctrinal preferences more through equipment acquisition than cogent argument. Only months after it was decided that the Lincoln bomber and Vampire fighter would satisfy the requirements of Plan 'D', the 'rapidly deteriorating' international situation led the Air Board to conclude that more extensive rearmament plans were necessary.⁸¹ Major improvements to the RAAF's strike and air superiority capabilities were now considered essential. In a move intended to increase significantly the RAAF's offensive power, the board recommended the acquisition of 48 British-designed B3/N45 high-speed, high-altitude jet bombers — later known as the Canberra — as either a replacement for, or complement to, the Lincolns. Board members acknowledged that the aircraft's design was not especially advanced (it had straight wings), a factor which imposed speed limitations and might militate against a long life, especially in the strategic role.⁸² Nevertheless, they felt that it would effectively meet the immediate crisis.

In an interim period the Canberra was something of an interim choice. It did not have the precise capabilities for long-range strike sought by the RAAF, but it was the best available, could be acquired quickly, and represented a quantum leap from the Lincoln. Additionally, building the machines locally would help the RAAF and the Australian industry bridge the

gap between piston-engined and jet-propelled bomber types. More than that, however, acquiring a fleet of Canberras offered the RAAF the possibility of regaining the massive bombardment capability it had built up during World War II; and it was that capability alone which satisfied the doctrinal ambitions of airmen. The Canberra may have had some performance limitations, but its specifications included the ability to carry a single 5000 lb or 10 000 lb 'special' bomb, in addition to a more conventional load of six 1000 lb bombs.⁸³ 'Special' was, of course, a euphemism for 'nuclear'. Air Vice-Marshal I.D. McLachlan, who was Air Commodore Operations in Air Force Headquarters when the Canberra was ordered, has stated that the RAAF had nuclear weapons 'in mind' when the aircraft was chosen;⁸⁴ indeed, two retired chiefs of the air staff recalled that the 'nuclear option' was invariably considered during any force structure review.⁸⁵ With the Canberra program underway, even more potent weapons systems were sought. The RAAF continued to examine design studies for aircraft such as the Avro Vulcan, Handley Page Victor and Vickers Valiant, all of which, with ranges of over 3500 miles and payloads of about 20 000 lbs, had a genuine strategic nuclear strike capability.⁸⁶

If the Air Force were to acquire a long-range deterrent force, it had to be able to protect it. Consequently, the RAAF reordered the role priorities for its fighter squadrons. An Air Staff Requirement for new fighter aircraft gave first place to the protection of friendly bombing forces at long range. Other priorities were, in order: strikes against enemy surface targets, the interception of enemy bombers (under all weather conditions), and tactical reconnaissance.⁸⁷ Because of those revised priorities, the new fighter had to be suitable for 'world-wide employment'. Air Force planners were clearly signalling a preference for deterrence as the strategy its Mobile Task Force would use both to defend Australia and meet collective security obligations.

Against that background, the Vampire's relatively modest performance was no longer satisfactory. For a time the RAAF considered building the experimental Hawker P1081, a swept-wing fighter powered by a reheat engine capable of 650 mph at sea level. Minister Drakeford approved in principle a RAAF recommendation to build 72 P1081s. However, the project was dogged by production delays. Former AFC pilot T.W. White succeeded Drakeford as minister⁸⁸ and, following strong representations by the Manager of CAC, Mr L.J. Wackett, on behalf of the North American F-86 Sabre, ordered the termination of all Australian work on the P1081.⁸⁹ It was not until 1954 that the RAAF acquired the CAC-built Sabre to satisfy its aspirations for a 'strategic' fighter.

The RAAF's interest in deterrence was not confined to its rearmament program. Late in 1948, Britain's Prime Minister Clement Attlee had advised Chifley that should war break out with the Soviet Union, the allied strategy would rest upon a massive air offensive against Russia and its satellites.⁹⁰ However, the bomber aircraft being designed for Britain's strike force were going to fly significantly higher, faster and further than those used in World War II, giving rise to problems in navigation and target location which had to be resolved.⁹¹ The RAAF became a willing participant in the necessary trials. During the second half of 1949 and early 1950, the RAAF's No. 82 (Bomber) Wing conducted a series of long-range bombing and navigation trials in Australia for the RAF. Code-named 'Operation Cumulative', those trials explored the limits of strategic navigation and bombing.

Fourteen RAAF Lincoln bombers were modified by the Government Aircraft Factories with special radar, radio, oxygen, photographic and instrument fitments.⁹² Between September and December 1949, RAAF and RAF crews flew almost 1700 hours on routes from Amberley to Darwin and Kalgoorlie and return. Sorties were flown at night, with 10 aircraft flying the same route one minute apart. The bombers normally would take off from Amberley at about dusk and arrive over their simulated target before first light the next morning. Track distances averaged 1750 nautical miles, with most of the route flown at an altitude of 20 000 feet. Whenever possible, bombing runs were made 'blind', using the World War II radar

system known as H2S. Most aspects of the exercise — for example aircraft and equipment serviceability, and aircrew performance — were the subject of intensive operational analysis.

An official RAAF report on Operation Cumulative presented its objectives in prosaic terms: it was described as an investigation of the problems of navigating to, and bombing a target at long-range under blind flying conditions without assistance from ground navigation aids.⁹³ A 'cover plan' for the trials which was prepared for public release claimed that the RAAF was training for Pacific conditions, and that the RAF's involvement was normal Commonwealth cooperation.⁹⁴ In fact, the operation was conducted using RAF procedures and was specifically related to the possible strategic bombardment of the Soviet Union.⁹⁵

Results from 'Cumulative' were interpolated to provide data applicable to European conditions; for example, one attachment to a lengthy report on the operation superimposed a map of Australia, turned upside down for the purpose of the exercise, over a map of Europe (Figure 4.3). The outcome was that the standard route from Amberley to Kalgoorlie could be seen closely to approximate a flight from East Anglia over Berlin, Minsk, Moscow and Kazan; while a second standard Australian route from Amberley to Darwin corresponded to a flight from East Anglia to Berlin, Budapest, Odessa and Ankara.⁹⁶ That map explained the essential purpose of Cumulative far better than did any technical analysis of a long-range navigation exercise.

At the conclusion of Operation Cumulative, the RAAF could be satisfied with the progress of its strike capabilities. It appeared to have the acquisition of modern equipment in hand and was a key participant in the development of the most advanced bombing tactics. One intriguing question on the doctrine of deterrence, however, seemed unanswered, or even ignored. The concept rested on the prospect of massive — indeed, unacceptable — levels of bombardment deterring potential aggressors. Before the advent of nuclear weapons, that threat, such as it existed, came only from weight of numbers, with fleets of hundreds of aircraft needed to drop thousands of tons of conventional explosives. Australia's planned force of only 48 Canberras, if armed with nuclear weapons, would have constituted an infinitely more potent deterrent capability than the RAAF's World War II force of 254 heavy bombers. If, however, the Air Force did not acquire atomic bombs, how credible would deterrence then be? The answer was 'not at all', unless the RAAF operated as part of a large, collective security force. As far as local defence was concerned, the lessons of World War II showed that a handful of bombers dropping relatively inaccurate conventional weapons would not be a significant force.

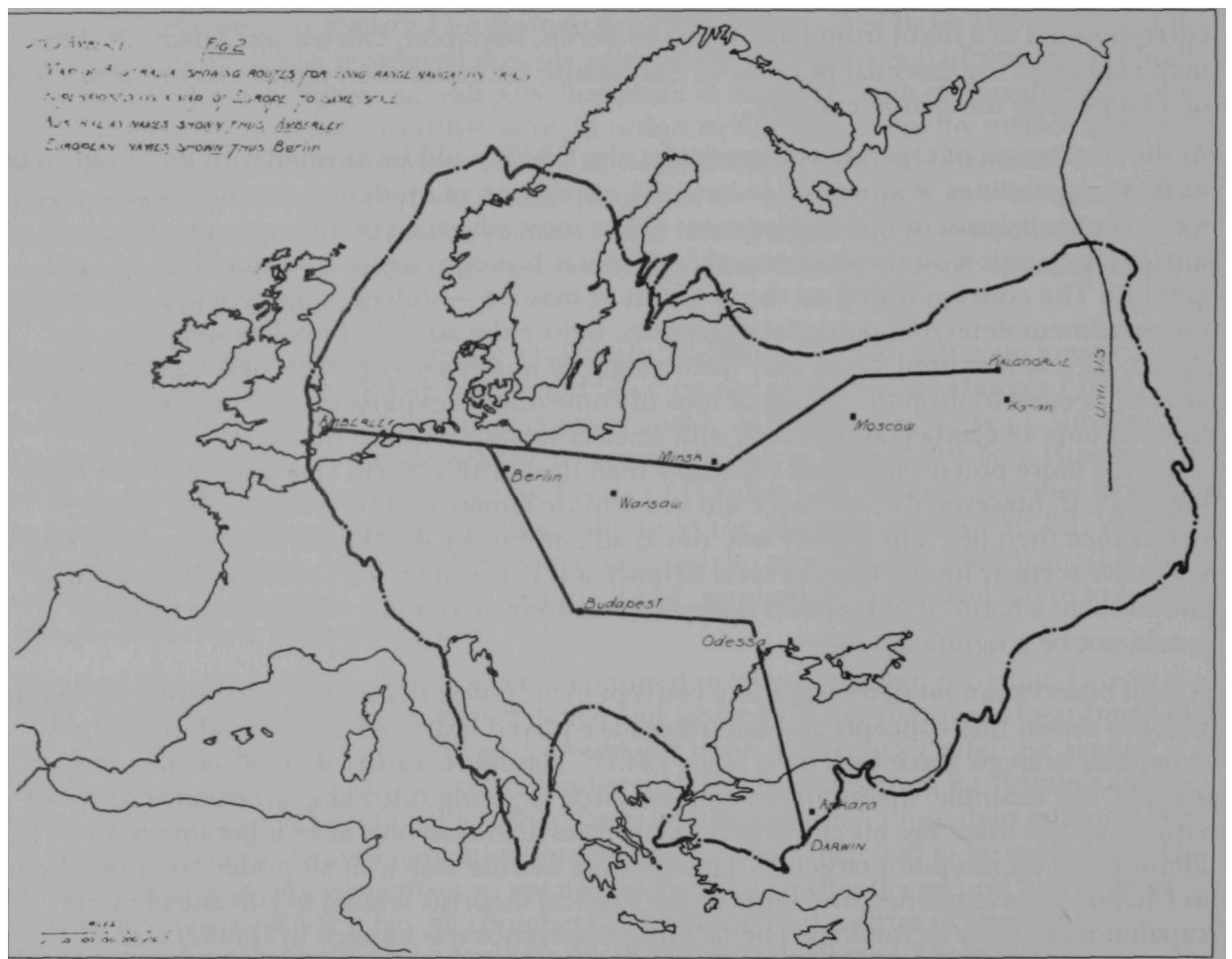
A final observation on deterrence as a concept in air power doctrine is worthwhile. Desmond Ball has shown that concepts and doctrines have played little part in the development of American strategic force structures since 1945.⁹⁷ Hardware, rather than ideas, has set the agenda. For example, the notion of counter-force targeting (attacking an enemy's weapons systems rather than, say, his cities) received serious attention only after it became possible to identify and hit pin-point targets.⁹⁸ The opposite was the case with air power doctrine where, as Chapter One explained, the ideas of the classical theorists tended to run ahead of the capabilities of their technology. The fact that deterrence was implicit in Douhet and Trenchard may explain why it was so easy for the RAAF to accept the concept, without perhaps feeling any need to examine its full implications.

THE PROFESSION OF ARMS

A major step in the professional development of airmen was taken in August 1945 when the Air Member for Personnel, Air Commodore J.E. Hewitt, formally proposed the establishment of an RAAF Cadet College.⁹⁹ Hewitt noted that under previous recruitment schemes for permanent officers there had been few individuals, if any, whose training had been 'intrinsically...air force...from an early age'; on the contrary, the RAAF's practice of taking

FIGURE 4.3

ROUTES FOR LONG RANGE NAVIGATION TRIALS OPERATION 'CUMULATIVE', 1949-1950



Source: AA, CRS AA1969/100, 1-7-50.

graduates from the Army and Navy colleges had only created 'conflicting elements in what may appropriately be termed The Staff Corps of the RAAF'. In Hewitt's opinion it was now 'essential to sow the seeds of service as early as practicable having regard to the special technical and other requirements of the Royal Australian Air Force'.¹⁰⁰ In future, the proposed RAAF Cadet College would be the 'principal source of supply of officers for the Service'. As Hewitt correctly observed, it was 'almost a truism that the future RAAF can be no better than the Air Force College'.¹⁰¹

The Air Board, the Council of Defence and Cabinet all strongly supported the initiative.¹⁰² In giving its endorsement, the council observed that it was 'agreed by those in a good position to judge' that in general the standard of staff work and administration in the RAAF was below that of the other Services, a problem attributable in part to the lack of a specialist cadet college.¹⁰³ Approval was given for the first course to start in 1948, with the institution to be known as the RAAF College, 'cadet' having been removed to give a title more descriptive of the institution's functions. Entrants were to have reached university matriculation standard, and training was to occupy four years. A charter for the college was prepared under Hewitt's direction. The most important quality sought in a cadet was 'leadership'; that is, emphasis was to be placed on the development of 'character, physical and mental fitness, an understanding of men, and...a thorough knowledge of the elements on which air power is based'.¹⁰⁴ From that description, it would seem that the tug of war between intellect and character which sometimes typifies military education was, in the early years at least, to favour the latter.

The college syllabus (Figure 4.4) gives an useful insight into the nature of the RAAF's thinking.¹⁰⁵ Some courses clearly were essential for all students; for example airmanship, navigation, aerodynamics and the 'general service' topics like law and drill. There was also an obvious need for the future leaders of a technical Service to study mathematics and physics, and for some to specialise in those areas. Accepting that, the syllabus remained extremely imbalanced. A thorough knowledge of air power was to be acquired by intensive study of its technical components rather than its history and ideas. During the four-year course, 1955 hours of classroom time were to be spent on physics, pure mathematics, calculus and applied mathematics, chemistry, electricity and radio, and practical applied physics. By contrast, only 230 hours were allocated to history, the history of war, war studies and Imperial defence. It seems extraordinary that there was no formal, discrete course on the history of air power. The Air Force very plainly was identifying itself as a technocracy. As one of the principal authors of the RAAF's first doctrine manual, Group Captain DJ. Schubert, has observed, perhaps more attention could have been paid to the broader processes of thinking and expanding cadets' intellectual horizons.¹⁰⁶ In Schubert's opinion, that might have been achieved by giving some cadets the opportunity to complete a traditional liberal arts education. Still, a start had been made, for which the Air Board deserves credit.

With the undergraduate level of the RAAF's professional education in place, Air Commodore Hewitt applied himself to what might be described as the 'post-graduate' phase, a senior staff course. Prior to World War II the Air Force had sent up to two students annually to the RAF Staff College, a number which wartime demands quickly showed to be insufficient. Supported by Minister Drakeford, Hewitt received approval in May 1947 to establish an RAAF Staff College.¹⁰⁷ Courses were to take six months and have 24 students of squadron leader/wing commander rank. There were six main objectives: to assist officers to think clearly, express themselves concisely and logically, and to read widely; to increase initiative, resourcefulness, mental flexibility and professional capabilities; to teach the capabilities, limitations and operating methods of all arms of the defence forces, and their inter-dependability; to show the inter-relationship between the armed forces and all the other elements of the national war machine; to acquaint officers with world affairs that may influence military events; and to stimulate constructive thought about trends that might

affect future wars.¹⁰⁸ It is evident from those objectives that, at various stages, aspects of air power would have been studied. Nevertheless, the failure to include a thorough knowledge of the topic as a basic objective was surprising. One of the course's early graduates, Air Commodore Rex Taylor, recalled that there were 'some' lectures on air power, but they were 'all based on the RAF World War II experience and UK requirements'.¹⁰⁹ Taylor believed that in the years of the Interim Air Force, the RAAF was more concerned with getting equipment and establishing a career structure for its officers than it was with 'strategy, tactics and so on'.

FIGURE 4.4

RAAF COLLEGE SYLLABUS, 1949
ALLOCATION OF HOURS TO SUBJECTS

Totals are for the whole of the four-year course

<i>Subject</i>	<i>Hours</i>	<i>Subject</i>	<i>Hours</i>
English	446	Physics	468
Pure Maths	481	Chemistry	468
Calculus & Applied Maths	351	Aero Engines & Airframes	86
Geography	63	History	78
History of War	39	War Studies	55
Imperial Defence	58	Teaching	35
The Services	30	Aerodynamics	109
Engineering Drawing	52	Electricity and Radio	109
Meteorology	86	Psychology	91
Law & Admin	178	Workshop	222
Airmanship	90	Armament	139
Navigation	138	Intelligence	50
Practical Applied Physics	78	Medical & Physiology	29
Service Customs	15	Drill and Combat	474
Flying Basic	221	Flying Applied	374
Free Study	359		

Source: RHS, Air Board Agendum 8379, Appendix 'A', 13-7-49.

Other important training initiatives were introduced during the Interim period. The scope of specialist training was expanded. Australian students started to attend the prestigious Empire Test Pilot's Course in the United Kingdom, while other students were sent overseas for education in armaments, signals, navigation, photography, equipment, engineering and staff work.¹¹⁰ An Officers' Training School (OTS) was also established in 1950. Conducted over 12 weeks, its purpose was to train direct entry (that is, those not entering the RAAF College) officers and airmen appointed to a commission. Officers from all branches attended the OTS course, which was structured to give a 'thorough knowledge of Service discipline and



Air Vice-Marshal J.E. Hewitt: Promoting the profession of arms. AWM 12247.

administration'.¹¹¹ As was the case with the RAAF Staff Course and the RAAF College, relatively little attention was paid to doctrine. The study of air power did not appear on the syllabus, although it may have been referred to briefly during the periods allocated to 'airmanship'.

Before concluding the section on the profession of arms, an observation on the intellectual leadership provided by the Air Board is warranted. To the board's credit, and especially that of the Air Member for Personnel, Air Vice-Marshal Hewitt, the period from 1945 to 1949 was notable for the rapid expansion of educational services in the RAAF. That was the kind of issue which properly should have been occupying the minds of the board, the Air Force's governing body. In fact, board members spent an inordinate amount of meeting time considering the most trivial matters. A representative example is provided by Air Board Agenda Nos. 9801 to 9900, covering a six-week period in late 1949.¹¹² Of the 100 agenda items, not one addressed a higher policy subject such as doctrine, strategy, concepts of operations or major equipment acquisition. Accepting that there is a limit to how much those and similar topics need to be examined, it was an extravagant, indeed ludicrous, waste of time for the RAAF's leaders to apply themselves — as they did — to matters like the disposal of boot repair materials, the supply of furniture to an Air Force station, and an application for a pay rise from a junior officer.¹¹³ Perhaps the board could have claimed it was discharging its responsibility under the Defence Act for the financial management of the RAAF. That would not have been good enough. Administrative action should have been taken so that more of the valuable time of one air marshal, three air vice-marshals and a civilian secretary¹¹⁴ was spent either considering air power or attending to their individual responsibilities, rather than collectively discussing boot repairs.

A SECOND AIR FORCE

'The master weapon of World War II', the Royal Australian Navy stated in its Post-War Plan, 'has been the aeroplane'.¹¹⁵ While noting that the advent of rockets in the closing stages of the war had necessitated changes to tactics, the RAN concluded that manned aircraft remained essential for offence and defence, and that consequently the Carrier Task Force had become the primary offensive naval unit. The irony of the Navy's assessment would not have been lost on those RAAF officers who, before the war, had regularly been reminded by their Army and Navy counterparts that air power would always be a subordinate form of combat power. It is unlikely, though, that the Air Force found much comfort in the RAN's about-face, for the Navy's conversion to the cause of air power inevitably triggered yet another bitter inter-Service fight over the control of air assets.

In the brief period from 1928 to 1933 when the seaplane carrier HMAS *Albatross* was on Australia's order of battle, its Seagull aircraft had been operated by the RAAF. Several years after the end of World War II, it became apparent that the government was likely to reactivate maritime-based air power by acquiring one or more aircraft carriers. In an attempt to secure a place for the Air Force in the new venture, Air Marshal Jones offered the Navy full support, giving an assurance that the RAAF not only could provide sufficient flying instructors but also would employ those pilots exclusively on carrier work to ensure that the necessary standards were achieved and maintained.¹¹⁶ However, the RAN's plan for naval aviation clearly had as one of its objectives the exclusion of the RAAF. Rather than accept the CAS's offer, the RAN proposed employing a large number of (British) Royal Navy personnel to fly its aircraft until sufficient Australians had been trained.

Once again the RAAF found itself having to defend its position as Australia's major supplier of air power. It must have been depressing for the Air Staff as they dusted off all the old arguments with which Air Marshal Williams and his colleagues had become so familiar. Questions about the centralisation of assets, maintenance facilities and training were raised,

as was the matter of expertise. Even the findings of the Smuts Committee in favour of unified and fully coordinated air forces were resurrected. The RAAF's position was not one of opposition to naval aviation, but rather that national security would be best served by unity of effort.

Air Force protests fell on barren ground, an outcome which was always likely once decision makers in the United Kingdom and the United States had announced that fleet air arms were an integral part of a navy and should be wholly staffed and controlled by 'navy men'.¹¹⁷ In Australia a 'special correspondent' for the *Argus* presented that very case for the RAN. While acknowledging that the RAAF would 'undoubtedly do a good job' in training crews, the *Argus* suggested that only the Navy could provide the necessary specialist training and apply it to Navy operational requirements. Experiences from World War II were cited to support the statement. Air Vice-Marshal Bostock put the alternative argument for the RAAF and land-based air power through his column in the *Herald*, suggesting it was foolish for the government to contemplate spending 30 million pounds on three aircraft carriers while the RAAF remained 'inadequate as a fighting force'.¹¹⁸ Strong arguments on the vulnerability of aircraft carriers and the superiority of land-based over carrier-based aircraft were also presented.¹¹⁹

On 16 December 1948 the First Lord of the Admiralty, Viscount Hall, handed over HMS *Terrible* to the RAN, which renamed the vessel HMAS *Sydney*. *Sydney* was equipped with Fairey Firefly fighter/reconnaissance aircraft and Hawker Sea Fury fighters; the latter were obsolescent in their role even before their introduction into RAN service.¹²⁰ A second 'Majestic' class carrier, subsequently named HMAS *Melbourne*, was on order.¹²¹ Australia was effectively operating two air forces. Whether it could afford to do so was to remain a contentious issue in debates on air power doctrine for over 30 years.

THE COLD WAR

At 4 a.m. on 25 June 1950, North Korea launched a series of attacks against South Korea. That same day, members of the RAAF's No. 77 Squadron were holding a farewell party at Iwakuni in Japan before returning to Australia at the completion of their tour with the BCOF. Within a week, the squadron was in action over Korea. Coincidentally, also in June 1950, six Lincoln bombers of No. 1 Squadron were deployed to Singapore, where they were to become the mainstay of Commonwealth offensive air operations against communist insurgents in Malaya for most of the next decade. The RAAF's involvement in a series of Asian wars which was to last almost a quarter of a century had begun.

No. 77 Squadron flew into battle in World War II-vintage Mustangs. The RAAF did not have the 'strategic' jet fighters envisaged in its post-war plans; nor did it have a deterrent force of jet bombers, sophisticated weapons or a chain of impenetrable air defence radars. Indeed, it still did not have an indigenous, forcefully articulated and widely endorsed doctrine. In view of the uncertainty which characterised much security planning immediately after World War II, a considerable opportunity had been missed. As had been the case during the war, the RAAF's leaders had shown little ability to articulate and promote publicly a distinctively Australian approach to the theory and employment of air power. Nevertheless, the period of the Interim Air Force had been most significant in terms of the development of ideas in the RAAF. The concept of the Mobile Task Force was well suited to the dual strategy of collective security and local defence, while the attention given to education and advanced technology was highly significant. If the air marshals had failed to develop a convincing, coherent doctrine, they nevertheless had laid the foundation for things to improve.

NOTES TO CHAPTER FOUR

- 1 AA, CRS A7942, CAS File Z22.
- 2 Hancock, *Challenge*, p 132, has commented on the frustration of trying to secure 'any clear-cut goal on which to base the post-war Services...[in] this twilight period'.
- 3 RHS, War Cabinet Minute 4077, 6-3-45; and Agendum 77/1945, 20-2-45.
- 4 See 'Reorganization of the RAAF for Peace', in *RAF Quarterly*, Vol 18, No 2, March 1947.
- 5 AA, CRS A1196, Item 36/501/613.
- 6 On 31-8-45 there were 21 160 officers in the RAAF, excluding the WAAAF and RAAF nursing service. RM, RAAF, *Australian Air War Effort* (10th edn), 31-8-45.
- 7 RHS, Supplement No 1, Air Board Agendum 6795, 27-11-45.
- 8 RHS, Air Board Agendum 6731, 23-8-45.
- 9 A possible explanation for Hewitt's return to favour is given in McCarthy, *Defence in Transition: Australian Defence and the Role of Air Power 1945-1954*, Defence Paper No 2, p 14.
- 10 Hewitt, *Adversity in Success*, pp 290-1. Hewitt discusses aspects of the review on pp 289-93. qv Jones, *From Private to Air Marshal*, pp 120-1. ;
- 11 See RHS, Supplement No 1 to Air Board Agendum 6731, 21-9-45.
- 12 See pp 70, 76, 79 above; and pp 94-5.
- 13 Williams, *These are Facts*, pp 326-9. It seems that Williams was unaware of the official reasons for his early retirement; at p 327 of his autobiography he indicates that he still believed age was the main selection criterion.
- 14 *ibid*, p 329.
- 15 RHS, Supplement No 1 to Air Board Agendum 6731, 21-9-45.
- 16 *RAAF News*, March 1966, p 8.
- 17 RHS, Air Board Agendum 7081, Letter, MacArthur to Bostock, 15-2-46.
- 18 Garrisson, Interview; Hancock, Interview; Read, Interview, qv Hewitt, *Adversity in Success*, *passim*.
- 19 RHS, Supplement No 1 to Air Board Agendum 6731, 21-9-45.
- 20 RHS, Air Board Agendum 7081, 28-3-46.
- 21 RHS, Air Board Agendum 7081, Letter, Bostock to Minister for Air, 25-2-46.
- 22 *ibid*, Letter, MacArthur to Bostock, 15-2-46.
- 23 Jones, *op. cit.*, pp 120-1, listed Hewitt as one of the capable young men who would be 'assured of good careers' once the demobilisation was completed, an opinion seemingly in direct contrast to that which he held when Hewitt was sacked from No. 9 OG.
- 24 See p 67 above, esp. note 78.
- 25 RHS, Air Board Agendum 8171, Air Force List—June 1947, 13-6-47.
- 26 See McLachlan, Interview; Compton, Interview; Taylor, Interview; Hancock, Interview; Rowland, Interview; and Hewitt, *Adversity in Success*, *passim*. j
- 27 Jones, Interview, stated that administration was his forte.
- 28 RHS, Air Board Agenda 6701-8100, 1945-47. For a summary of those tasks, see Jones, *op. cit.*, pp 122-5.
- 29 RM, Williams Papers, The Atomic Bomb, Memorandum on the Atomic Bomb in Relation to the Air Defence of Australia, Letter, Williams to Evatt, 15-11-45.
- 30 *loc. cit.*
- 31 'What Will be the Future of the RAAF?', in *Aircraft*, January 1946.
- 32 See Prime Minister Chifley, *CPD*, 6-3-47, p 425; and 'New Form of War', the *Age* 7-3-47. Ministers were not the only officials who found the subject daunting. When the Minister for General Defence and Post-War Reconstruction, Mr J.J. Dedman, questioned senior defence officials on the topic several weeks later, they reportedly were 'plunged into confusion': 'Mr Chifley Chuckled', the *Age*, 24-3-47; qv the *Argus*, 29-3-47.
- 33 'New Form of War', the *Age*, 7-3-47.
- 34 'New Weapons Basis For Our Defence', the *Herald*, 7-3-47.
- 35 'Imperial Defence', the *Argus*, 17-3-47.
- 36 'New Militia Unlikely: "Push Button Warfare"', *Sydney Morning Herald*, 11-4-47; and 'Defence Plans Ready Soon: Modern Scientific Weapons as Basis', the *Age*, 19-4-47.
- 37 'Chief of Air Staff Returns', in *Aircraft*, November 1947.
- 38 'New Australian Defence Problems', in *Daily Telegraph*, 25-2-47. ^
- 39 AA, CRS A5954, Box 1634, Future of Air Power — Report by General Arnold, Commanding General of the United States Army Air Forces, 'Air Power and the Future', in *US News*, November 30, 1945.

- 40 AA, CRS A5954, Box 1634.
- 41 *The Air Force List*, May 1945; and *The Air Force List*, June 1947.
- 42 AA, CRS A5954, Box 1634.
- 43 AA, CRS A5954, Box 1846.
- 44 AA.CRSA5954, Box 1634.
- 45 loc. cit.
- 46 Hancock, Interview, described the MTF as a logical concept for the RAAF in the era of forward defence and the containment of communism.
- 47 AAVIC, MP 1217, Box 560. qv PRO, Air 8/997-999.
- 48 AA, CRSA5954, Box 1634.
- 49 In May 1944 Curtin stated that Australia's war effort would 'normally have to be concentrated' in South East Asia and the South West Pacific. PRO, Air 8/997.
- 50 PRO, Air 8/999.
- 51 NLA, AJCP, PRO 6792. Mr Chifley stated that 'in a future major war the Commonwealth must rely on the active assistance of the United States'.
- 52 AA.CRSA5954, Box 1634.
- 53 'New Weapons Basis For Our Defence', in the *Herald*, 7-3-47.
- 54 RHS, War Cabinet Agendum 394/1945, 2-9-45; and Supplement No 1, Air Board Agendum 6795, 27-11-45. qvAA, CRSA1196, Item 36/501/616.
- 55 Jones, op. cit., p 122, described the government's rejection of Plan 'A' as 'understandable'.
- 56 RHS, Supplement No 3, Air Board Agendum 6795, 15-2-46 and 12-3-46.
- 57 AA, CRS A5954, Box 1842. The essential features of Plan 'D' were endorsed by Minister for Defence JJ. Dedman in a statement to Parliament: see *CPD*, 4-6-47, pp 3335-46.
- 58 See 'Few Volunteers for Post-War Air Force', in *Aircraft*, March 1946; 'The Post-War RAAF is worrying a Lot of People', in *Aircraft*, June 1946; and 'Serious Omissions Seen in RAAF Defence Plan', in the *Herald*, 29-5-47.
- 59 Bostock's first series of articles when he joined the *Herald* in mid 1946 had reopened his dispute with Jones over the RAAF's wartime command system. See the *Herald*, 22/24/25/26 June 1946. Minister for Air Drakeford refuted Bostock's articles in a parliamentary speech: see *CPD*, 10-7-46, pp 2332-7.
- 60 'No RAAF Combat Unit to Victoria in New Plan: Big Areas Have No Protection', in the *Herald*, 24-5-47.
- 61 'Serious Omissions Seen in RAAF Defence Plan', in the *Herald*, 29-5-47.
- 62 loc. cit. The similarity between Bostock's 'elements' and the Williams plan of 1925 (see pp 25-9 above) and The 1987 White Paper (see p 171 below) are obvious.
- 63 'Defence of the Nation', the *Age*, 1-5-47.
- 64 'Marking Time in the Defence Forces', in the *Sydney Morning Herald*, 26-3-46; and 'Our Defence Slashed by 48 Air Squadrons', the *Herald*, 15-5-47.
- 65 RHS, Air Board Agendum 9275, 1-2-49.
- 66 RHS, Attachment 'A' to Air Board Agendum 9275, 1-2-49.
- 67 AA, CRS A5954, Box 1844.
- 68 RHS, Attachment 'A' to Air Board Agendum 9275, 1-2-49.
- 69 RHS, Air Board Agendum 6764, 14-9-45.
- 70 AA, CRS A5954, Box 1634.
- 71 loc. cit.
- 72 RHS, Air Board Agendum 8709, 4-5-48.
- 73 RHS, Defence Committee Agendum 100/1946, 9-5-46. qv Air Board Agendum 7084, 14-6-46.
- 74 RHS, Cabinet Agendum 1188A, 14-8-46.
- 75 RHS, Air Board Agendum 8709, 4-5-58.
- 76 RHS, Air Board Agendum 7661, 24-10-46.
- 77 RHS, Air Board Agendum 7035, 12-3-46.
- 78 RHS, Air Board Agendum 6768, 21-9-45/28-7-47. qv 'The RAAF Apprentice Training Scheme', in *Royal Air Force Quarterly*, Vol 5, No 3, July 1953.
- 79 Bernard Brodie, 'The Weapon', in Brodie (ed.), *The Absolute Weapon*, p 76.
- 80 See RAF Historical Society, 'The Origins and Development of the British Nuclear Deterrent Forces 1945-1960', in *Proceedings*, Issue No 7, February 1990.
- 81 RHS, Air Board Agendum 8709, Supplement No 2, 6-10-48.

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- 82 *ibid*, Supplement No 4, 15-2-49. The latter fear was misplaced, as the Canberra remained in squadron service in the RAAF for 29 years.
- 83 *loc. cit.* The first production version of the Canberra for the RAF was the B Mk 2, which had a standard weapon load of 6000 lbs of bombs, including nuclear weapons, carried internally. See Taylor, *Combat Aircraft of the World*, p 349.
- 84 McLachlan, Interview.
- 85 Hancock, Interview; Rowland, Interview.
- 86 RHS, Supplement Nos 3 and 4 to Air Board Agendum 8709, 15-2-49.
- 87 RHS, Supplement No 3 to Air Board Agendum 8709, 15-2-49.
- 88 Lt Col the Hon T.W. White, DFC, VD, MP, was a former member of the AFC. He was a graduate, together with Sir Richard Williams, of the first pilots' course conducted at Point Cook in November 1914.
- 89 RHS, Air Board Agendum 8709, Supplement No 7, 20-12-50. *qv* Wackett, *Aircraft Pioneer*, pp 183-8; and PRO, Air 2/10782.
- 90 AA,CRSA5954, Box 1628.
- 91 PRO, Air 2/10278.
- 92 RHS, Air Board Agendum 9348, Section IIA, 25-8-50. *qv* PRO, Air 20/7041 and Air 8/1564.
- 93 AA, CRS AA1969/100, 28/2/Air. *qv* CRS AA1969/100, 17/26/Air.
- 94 PRO, Air 2/10278.
- 95 Dalkin, Interview.
- 96 AA, CRS AA1969/100, 28/2/Air.
- 97 Desmond Ball, 'The Evolution of United States Strategic Policy Since 1945', in Ball & Downes (eds), *Security and Defence*, pp 46-8.
- 98 *loc. cit.*
- 99 RHS, Air Board Agendum 6735, 23-8-45. The College's first Commandant, Air Commodore V.E. Hancock, believed the institution was a 'major initiative' in educating the RAAF, for which he gave credit to Hewitt. Hancock, Interview, *qv* APSC, Frost, *A History of the Royal Australian Air Force College* (Unpublished Manuscript), Canberra, 1986.
- 100 RHS, Air Board Agendum 6735, 23-8-45.
- 101 RHS, Air Board Agendum 8311, 13-8-47.
- 102 RHS, Cabinet Agendum 13478, 25-7-47.
- 103 AA, CRS A5954, Box 1509.
- 104 RHS, Air Board Agendum 6735, 26-9-47. *qv* Hancock, *Challenge*, pp 132-5.
- 105 RHS, Air Board Agendum 8379, Appendix 'A', 13-7-49. For a comparison with the RAF College syllabus, see PRO, Air 2/3833.
- 106 Group Captain DJ. Schubert, Interview, Canberra, 17-1-91.
- 107 RHS, Air Board Agendum 8103, 2-5-47.
- 108 RHS, Air Board Agendum 9084, 23-11-48.
- 109 Taylor, Interview. Taylor completed No 4 RAAF Staff Course in 1951. *qv* the *Precis Index* for No 4 Staff Course, 1951, attached to Letter from Air Commodore Taylor to author, 6-3-90.
- 110 RHS, Air Board Agendum 6999, 18-2-46; and 7232, 15-10-47.
- 111 RHS, Appendix 'A' to Air Board Agendum 10115, 15-3-50.
- 112 RHS, Air Board Agenda 9801-9900, 4-10-49 to 18-11-49.
- 113 RHS, Air Board Agenda 9865, 28-10-49; 9890, 14-11-49; and 9881, 10-11-49. Air Vice-Marshal L.S. Compton, Interview, recalled that his time at Air Board meetings in the late 1970s was concerned primarily with administrative detail and 'bush fires'. He could not recall the board ever discussing 'higher air power policy'. Air Marshal Sir Charles Read, Interview, described board meetings as 'not very good', as issues were not discussed thoroughly.
- 114 The air marshal was Chief of the Air Staff; the three air vice-marshals the air members for personnel, technical services, and supply and equipment; and the civilian the financial member.
- 115 AA, CRS A5954, Box 1841.
- 116 RHS, Air Board Agendum 8058, 27-5-47.
- 117 'RAN Should Control its Own Air Arm', the *Argus*, 13-6-47.
- 118 'Land-Based Planes Our First Defence', in the *Herald*, 5-3-47.
- 119 For comment on air force attitudes to aircraft carriers, especially those of Jones, Sir John Slessor and Sir Donald Hardman, see McCarthy, *Defence in Transition*, pp 3-5.
- 120 Gillett, *Australia's Military Aircraft*, p 197.
- 121 'Australian Naval Aviation Progress', in *Aircraft*, February 1949, pp 26-8.

CHAPTER
— FIVE —



COLD WAR WARRIORS
1950-1972

Historical epochs are commonly identified by wars: for example, the Peloponnesian War, the Wars of the Roses and the American Civil War all define specific periods. From the late 1940s to the late 1980s, the dominant factor in international relations was the Cold War. Even relatively insignificant players on the world stage like Australia had to shape their security posture primarily to meet the pressures of the perceived threat from international communism. Thus, the RAAF and the other Australian Services found themselves committed to a series of Asian wars which in themselves presented no direct threat to Australia, but which in sum contributed to the West's, and specifically the United States', determination forcefully to oppose the spread of communism. More than ever, Air Force thinking and planning needed to reflect an understanding of international pressures, while still remaining responsive to domestic demands.

A SYSTEM OF ALLIANCES AND AN AIR OFFENSIVE

Australia quickly entered into a series of alliances and arrangements intended to bolster its security, the first of which was the Australia, New Zealand and Malaya (ANZAM) arrangement. In May 1948 approval had been given by the Australian government for defence planning staffs to cooperate with their British and New Zealand counterparts in preparing for the defence of the South West Pacific Area, including Malaya.¹ Malaya was considered critical to regional and Australian security. In the opinion of the Defence Committee, a successful thrust down the Malay Peninsula by communist forces could place the entire ANZAM region at risk.² Initially the ANZAM arrangement was limited to planning for possible future contingencies, but by 1950 it had been extended to operations. It was because of those operations that the RAAF first became involved in what turned out to be a series of long-term deployments to the South East Asian region.

As Malaya and Singapore moved towards independence, ANZAM became politically unacceptable. New security agreements which formally included the new states were needed; thus, as ANZAM naturally faded away, it was replaced first by the Anglo-Malaysian Defence Agreement (AMDA) and then the Five Power Defence Arrangements (FPDA).³ Australia was not a member of the former, but became the major partner in the latter, which came into effect on 1 November 1971 and comprised Malaysia, Singapore, New Zealand, the United Kingdom and Australia. The key element of the FPDA has been an Integrated Air Defence System (IADS), in which the RAAF has played a dominant role.

The security agreements for the Malaysia/Singapore region were quickly followed in September 1951 by the conclusion of the Australia, New Zealand and United States (ANZUS) pact, which has since dominated Australian foreign policy.⁴ Strong parallels can be

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drawn between ANZUS and the pre-World War II Imperial defence arrangements, with each representing the need of an immature, racially and culturally isolated country to secure the (assumed) protection of a great and powerful friend as its ultimate guarantee of security.

The regionally focused ANZAM/FPDA and ANZUS agreements were supplemented by broader security pacts. As part of its strategy to combat world communism, the Western Alliance, and especially the United States, arranged a series of encircling pacts which were intended to contain and geographically isolate the USSR and the PRC. By the end of the 1950s the West had in place the NATO, CENTO and SEATO pacts, which stretched from Europe through the Middle East, South Asia, South East Asia and North Asia.⁵ Australia again paid its security dues through its membership of SEATO.

Expressed in its simplest form, Australia's membership of those pacts — especially ANZUS — has been seen by a succession of governments, both Labor and Liberal/National, as an insurance policy. In turn, the premiums on that policy have led to the RAAF's involvement in a series of Asian wars in which the *causus belli* was the perceived defence of Western interests. Thus, just as the Imperial system exerted a powerful influence on the structure and outlook of Australia's air force, army and navy, so too has alliance membership. The effects on air power doctrine of that approach to national security are considered in the following sections of this chapter.

The concept for the defence of Australia in the Cold War period was detailed in a paper prepared for the Defence Committee in May 1951. Titled 'Strategic Concept for Defence of the ANZAM region', the paper was based on guidelines which had already been agreed to by the governments of the United Kingdom, New Zealand and Australia.⁶ The threat may have changed from the Axis Powers to international communism, but the essential strategy remained that of Imperial defence. Australian security could best be achieved through forward defence, which itself contributed to the broader national strategy of 'defence in depth'.⁷ The military measures necessary to implement the strategy gave priority to air power. ANZAM intelligence assessments concluded that the main threat to Australia and its regional allies would come from Soviet air activity 'in the form of limited air attacks, reconnaissance, and possibly some mine-laying operations against sea communications'. 'Non-return' bombing raids (that is, one-way raids in which the attacking aircraft would not have sufficient fuel to return to their home base, and so would have to land or crash-land in neutral or hostile territory) against targets in Australia and island territories were considered unlikely, but the Chinese Communist Air Force was expected to present a major threat to Malaya by 1957.⁸

Because of that assessment, Malaya assumed crucial proportions in Australian security planning. As the Defence Committee noted, Malaya was the one country which could be attacked from land and which also provided a land route from Asia to the arc of islands to the north of Australia. Holding Malaya would ensure control over the air and sea routes to the south, as well as denying any enemy access to naval and air bases; on the other hand, its loss 'could result in Australia being subject to some air attacks'.⁹

While the defence of the ANZAM region was central to Australian air power planning, it was only a minor component of the wider Western strategy. At the highest level, the major threat of the USSR had to be addressed. Again, the emphasis was on air operations. In the event of global war, the West's first action would be to mount a strategic air offensive against the USSR.¹⁰ That strategy could only be effected if the allies were able to hold the necessary air and sea bases in the United Kingdom, the Middle East and Japan. It was also considered essential to defend the main support areas of Australia, Canada, the United States, South Africa, the Argentine and 'certain other parts of South America'.

The West's global strategy had important implications for the deployment and structure of the RAAF. First, the Middle East became the subject of Australian attention. Global conflict

was considered most likely to start in Europe and the Middle East, and, to a lesser extent, the Far East.¹¹ Because the Middle East contained both the sea and land links to South and South East Asia and much of the world's oil, its security was considered critical for Australia. Accordingly, the Defence Committee agreed that in the event of global war, the RAAF's Mobile Task Force, comprising up to nine squadrons and supporting units, would be deployed to the Middle East.¹² That never happened, but the particular strategic assessment did provide the rationale for stationing the RAAF's No. 78 Wing, equipped with Vampire fighter aircraft, in Malta from 1952 to 1955.¹³

Australia's focus on the Middle East was short lived. As global confrontation began to take the form of a confusing mixture of communist insurgencies, decolonisation, and wars of independence and nationalism, Australia inevitably became more concerned with its own region. Additionally, the necessity for allied forces to confront the Soviet Union in Europe limited their ability to deploy units to the Far East, where communist insurgents threatened Western interests. Consequently, in June 1953 the British government proposed to Australian Prime Minister R.G. Menzies the formation of a Commonwealth Far East Strategic Reserve, whose primary role would be to deter further communist aggression in South East Asia.¹⁴ The nucleus of the reserve was to come from British and Commonwealth units already stationed in the Far East, and from the Australian and New Zealand forces fighting in Korea when they could be released. Early contingency planning assumed a contribution from the RAAF of one bomber squadron, a fighter wing of two squadrons, and an airfield construction squadron.

The Commonwealth's approach to security in the Asia/Pacific region was shared by the Americans. A planning conference held in Pearl Harbor in July 1955 by staff representatives of the (US) Commander-in-Chief of the Pacific and the (UK) Commander-in-Chief Far East Air Force emphasised offensive air power as the first line of defence in a strategy which identified communist China as the most likely enemy.¹⁵ Like the British, the Americans also expected the RAAF to participate in any conflict, in which 'atomic weapons [might be] used judiciously together with conventional air attacks'. Aircraft which the RAAF might contribute were listed as the Canberra light bomber and the Sabre fighter/interceptor. It is evident from the wording of the paper that RAAF forces were seen simply as an adjunct to those of the United Kingdom, although whether they were to be used in any nuclear exchange was not clear.

As had been the case before World War II, forward defence and collective security was only one half of Australia's defence posture. A local defence strategy was also needed. Because of the belief that offensive air operations almost certainly would be conducted overseas, the RAAF's primary role in-country was air defence. The Chiefs of Staff Committee based its air defence plans on possible attacks by Soviet-made long-range Tu-4 bombers, which were believed capable of making non-return raids against targets in Australia with bomb loads of 7000 lbs.¹⁶ Because it was not possible to defend the entire country against the Tu-4, the chiefs decided that priority would be given to three air defence areas: Newcastle/Sydney/Port Kembla, Darwin, and Fremantle/Perth. Interceptor fighter aircraft, rather than anti-aircraft artillery, were to be the main weapon, with four squadrons considered adequate in view of the low probability of attack.

From those two clearly defined national requirements for air power, a largely self-evident structure for the RAAF's fighting force emerged. The Air Force's leaders believed their best approach would be to develop a 'balanced' air force which would be capable to some extent of undertaking all of the main tasks required of air power.¹⁷ They gave the highest priority to the medium bomber force, which was needed as a deterrent in peacetime and an effective strike force in war. Consistent with doctrine from the earliest days of air power, a bomber offensive was also the preferred method for gaining control of the air, which was best achieved by destroying the enemy on the ground. Should forward defence fail and a

lodgment be made in Australia, an additional role for the bomber force would be interdiction and tactical support for land forces. Second to the strike force, an adequate interceptor/fighter force was necessary to win and maintain local air superiority. Those two main elements of air power would have to be supported by an air transport force, maritime reconnaissance and strike aircraft, a strategic reconnaissance element, and tactical observation aircraft for the army.

Ideally, 30 squadrons were needed, a total the RAAF acknowledged was impracticable in peacetime. The existing order of battle of 18 squadrons consequently was structured to reflect the strategic priority for bombers and fighters. Stressing that priority, Minister for Air William McMahon made an interesting suggestion in a letter to Defence Minister Sir Philip McBride in 1954. McMahon proposed that if additional funds became available for the defence vote, they should be used to acquire British V-Bombers.¹⁸ While not stated in McMahon's letter, those aircraft — the Valiant, Victor and Vulcan — were all long-range, nuclear-capable platforms. The pre-eminent place of the bomber in RAAF doctrine remained unchallenged.

RELEARNING THE LESSONS OF CONVENTIONAL WAR

The concepts underpinning the RAAF's strategic planning were put to the test in three major theatres during the period under review in this chapter. In Korea and Vietnam the Air Force contributed to the Australian government's insurance premium on collective security by participating in large-scale wars. A further payment with perhaps a little more immediate relevance was made during the Malayan Emergency, where fighting was restricted to guerilla warfare. Important doctrinal concepts emerged from each of those conflicts; in particular, the Vietnam experience raised questions about the value of air power which the RAAF needed to address. Because of the respective scales of fighting, Korea and Vietnam are reviewed together, while Malaya is examined separately.

No. 77 Squadron flew its Mustang fighters into combat in Korea less than five years after the end of World War II. If the RAAF learnt anything from its first year in Korea, it was that too many of the practices and concepts — that is, the doctrine — from World War II had been forgotten during that brief period. The most important lesson related to equipment. Air power had moved into the jet age in the early 1940s, but the Australian pilots still went into battle in obsolescent propeller-driven fighters. In Air Vice-Marshal J.H. Flemming's opinion, that was indicative of the general run-down state of the RAAF, which in turn was a consequence of political neglect after World War II.¹⁹ The RAAF's unhappy experiences with second-rate combat aircraft like the Buffalo and the Wirraway in the South West Pacific Area had been quickly forgotten or conveniently ignored by governments which had higher priorities for peacetime reconstruction than acknowledging the central place in air power doctrine of high-quality equipment. The Air Force clearly could not compel the government to buy new equipment. By the same token, as Chapter Four of this book has argued, the RAAF's failure to develop and promote its cause during the years of the Interim Air Force represented a considerable missed opportunity.

The Mustang was never going to succeed in the air superiority role which No. 77 Squadron was first allocated in Korea.²⁰ However, once the squadron's role was changed to ground attack, it did a very good job.²¹ Two doctrinal precepts were confirmed by that early experience. First, the speed with which No. 77 Squadron went into action exemplified one of the characteristics which distinguishes air power from the other forms of combat power. Second, the squadron's efforts were characterised by versatility and expertise, as shortcomings in equipment were to a large extent overcome by training, flexibility and leadership.²² Because pilots had been trained and kept proficient in a variety of roles, they

were able to change from air superiority to close air support and interdiction overnight and were immediately effective.

The fact that No. 77 Squadron was not equipped with jet aircraft at the start of the Korean War represented a political failure of sorts on the part of both the Australian government and the RAAF. It is ironic, therefore, that the squadron's early success with its Mustangs in the ground attack role earned precisely the kind of political credit with the United States that Australia was seeking through its alliance relationships and policy of forward defence. According to Australia's official war historian, Robert O'Neill, No. 77 Squadron's results not only attracted genuine enthusiasm from American military commanders, but also were recognised in Washington.²³ Indeed, O'Neill has stated that the high regard in which No. 77 Squadron was held by the Americans helped persuade the administration of President Harry S. Truman to conclude the ANZUS Treaty. The relationship between doctrine and politics had again been demonstrated.

No. 77 Squadron's equipment problems did not end with the Mustang. Like previous air wars, Korea acted as a catalyst for rapid technological development following the benign neglect of governments during the preceding period of peace. Notwithstanding the admirable job done by the Mustang supporting the United Nations land forces, Australia's priority was for an air superiority fighter. In an environment where not only jet propulsion but also swept-wing aerodynamics had quickly become the yardstick, the Mustang could not last. Because of the USAF's demands, the United States was unable to supply the RAAF with the West's best fighter aircraft, the North American F-86 Sabre.²⁴ In the circumstances, Chief of the Air Staff George Jones had little option other than to accept a proposal to rearm the RAAF with the British Gloster Meteor, a twin-engine, straight-wing machine which quickly confirmed fears that it would be no match for the communists' swept-wing MiG-15 in air combat.²⁵ Like the Mustang, the Meteor was transferred to the ground attack role, where it too did a good job. The fact remained, though, that under Australia's strategic planning, the primary role for the Meteor was air superiority, and it was obsolescent for that task even before the RAAF took delivery.

As well as creating immediate difficulties in Korea, the RAAF's equipment problems possibly caused longer term problems: Air Vice-Marshal Flemming believes that the inability of the Australian government to equip the Air Force with the most modern machines retarded the development of the RAAF for some years.²⁶ That claim might be questioned. There can be no doubt, though, that in the matter of educating its senior officers, the RAAF once again failed to make the most of its opportunities. Throughout the Korean War no officer above the rank of wing commander served on a United Nations headquarters staff, even though the size of the RAAF's contribution gave it a strong claim to at least some posts in the USAF's 5th Air Force Headquarters. The RAAF's failure to take advantage of that invaluable planning experience has been described by Robert O'Neill as 'perhaps the most serious defect' of Australia's involvement in the air war.²⁷ The mistake of World War II was repeated as the RAAF once again accumulated impressive tactical and technical expertise, but missed the chance to develop its more abstract skills.

If the RAAF had its problems, so too did the USAF, which provided most of the air power in Korea. Like No. 77 Squadron, the USAF had suffered from the relative lack of technical innovation and research and development since 1945.²⁸ Serious operational shortcomings also became apparent. In the space of five years, some of the fundamental lessons of World War II had been forgotten. In particular, American pilots and planners had to relearn the art of providing close air support for ground forces.²⁹ Further, major difficulties were experienced with the massive air interdiction campaign, which failed to take into account the *nature* of the enemy. Allied air planners never really came to grips with the fact that it was enormously more difficult to interdict a supply system based on peasant labour rather than mechanised transport.³⁰

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The real issue for air power from Korea, though, was the imposition of political controls on United Nations' bomber aircraft. Grand notions of victory through air power alone, which had been revived by the devastating nuclear attacks on Japan, meant little if airmen were prevented from using the full force at their disposal. That was the case in Korea, where political considerations and the problem of target discrimination combined to debar the use of nuclear weapons and inhibit the choice of targets for conventional bombing attacks.³¹ Air Vice-Marshal Wrigley's warning from the 1920s that, because of the inherent menace and offensive nature of the air weapon, 'the precipitate use of the air force may bring about a war' could not be ignored.³² A vicious war on the Korean Peninsula was bad enough: no-one wanted it to escalate into World War III through the peremptory use of nuclear weapons or inflammatory massive conventional attacks on China.

The Korean armistice was signed on 27 July 1953. Eleven years later the arrival of a flight of Caribou transport aircraft at Vung Tau airport signalled the RAAF's entry into the Vietnam War. As had been the case with Korea, the Air Force commitment to Vietnam was made in the interests of the national strategy of forward defence. The Caribou were later joined in-country by a squadron of Iroquois helicopters and another of Canberra bombers. Occasional support also came from units operating C-130 and C-47 transport aircraft, and Neptune maritime reconnaissance aircraft.

In general, the RAAF's experience in Vietnam was professionally rewarding. At the operational level it almost invariably performed with distinction. No. 2 (Canberra bomber) Squadron was awarded a United States Air Force outstanding unit citation; No. 35 (Caribou transport) Squadron earned an enviable reputation for its sustained airlift effort;³³ and No. 9 (Iroquois helicopter) Squadron, which had the most difficult and dangerous role, was held in high regard by most of the Australian Army units it supported, especially the Special Air Service (SAS) Regiment, whose small patrols often had to be extracted from enemy territory in hazardous circumstances.³⁴ Regrettably, however, No. 9 Squadron's first three months in South Vietnam were marred by a serious dispute with the Army. The background to that affair provides an important insight into some of the pressures bearing on the management of Australian air power. However, because the dispute's genesis was not the war in Vietnam, but rather the perennial issue of the ownership of military aircraft, it is discussed later in this chapter under the sections titled 'A Third Air Force' and 'The Unity of Air Power?'

As had been the case in Korea, most RAAF operations in Vietnam were integrated into the massive American air effort (the exception being No. 9 Squadron, which flew exclusively in support of an Australian task force of two battalions). In general, the overall air war was marked by dissension and controversy, and in the final count air power did not emerge well from the conflict. Although the RAAF was a minor player, it was not isolated from the consequent opprobrium. For that reason, a brief review of the major American experiences is necessary.

The Vietnam War attracted intense public hostility in the United States and Australia and for those opposing it apparent military failures were not hard to find. For example, the air interdiction campaign in the south seemed unable to stem the flow of supplies, while parallels appeared to exist between the *Rolling Thunder* and *Linebacker* bombing campaigns against the north and the allegedly unsuccessful allied strategic bombing campaigns of World War II.³⁵ By 1972 the Americans had lost at least 3689 fixed-wing aircraft and 4857 helicopters.³⁶ The apparent inability of the massive air effort to stop an enemy characterised as lightly armed peasants in black pyjamas seemed to discredit the perennial claim of airmen that their striking power and high technology held the key to victory.

The interdiction campaign undoubtedly had its problems.³⁷ Too much faith was placed in high technology; the resupply needs of the enemy were greatly over-estimated (a factor which substantially reduced the cost-effectiveness of the air effort); and the lessons from World War II and Korea regarding target selection and the relationship between the air

campaign and the situation on the ground were too often ignored.³⁸ Yet the argument that air power failed in Vietnam is at best simplistic. Despite the problems, notable successes abound at the tactical level of operations, with a valuable contribution being made in roles such as close air support, tactical mobility (using fixed-wing and rotary-wing aircraft), air supply and airborne assault. Good examples are easy to find. Close air support at Khe Sanh is widely credited with having prevented a repeat of Dien Bien Phu; while for the RAAF, No. 9 Squadron's operations with the Special Air Services and its resupply of ammunition to 'D' Company, No. 6 RAR, during a critical stage of the Battle of Long Tan, illustrate the point.³⁹ As far as the strategic operations were concerned, a valid case can be made that the intensive 11-day bombing campaign of Operation *Linebacker II* in December 1972 — the one occasion on which offensive air power was used in an intensive and sustained way against the North — was a decisive factor in bringing the North Vietnamese to the negotiating table.⁴⁰ Also at the strategic level, airlift was a lifeline for the American and Australian ground forces. Most significantly, the USAF has argued that as long as substantial American air power was stationed in Indo-China, the North Vietnamese were unable to sustain a successful conventional offensive against the South. It was only after all USAF squadrons left South Vietnam in 1973 (some remained in Thailand) that the North was able to mount a decisive ground campaign.⁴¹

Once again, though, the most significant doctrinal point to emerge was political in nature. In Korea, strict political limits had been placed on the bombing campaign, but the generals had continued to conduct operations. In Vietnam, there was an extraordinary degree of political involvement as President Lyndon Johnson and Secretary of Defence Robert McNamara directed the campaign first hand from the White House, at times personally selecting targets in the north and controlling the tempo of the bombing. According to USAF General J.W. Vogt, Johnson and McNamara selected targets using the doctrinally distorted objectives of 'sending signals' to the North Vietnamese and minimising public outcry in the West, when their objective should have been 'whether [a particular] mission would help us win the war'.⁴² General Vogt's criticism seems misplaced on two counts. First, it was certain that the President and the Defence Secretary were not trying to *lose* the war through their target selections. Second, it remains a fact of life that air bombardment campaigns must be conducted under the prevailing political ethos.

A more useful commentary on the problems with the bombing campaign was presented in an important book by Colonel Harry Summers, who argued that a major factor in the West's defeat was the usurpation of military doctrine by civilian analysts.⁴³ According to the Summers thesis, the analysts who had most influence with Johnson and McNamara reduced military doctrine to a 'subset of economic utility theory', in which the application of cost/benefit analysis almost inevitably made the determined pursuit of military objectives seem like a failure of policy, contrary to the traditional view of war as the continuation of policy by other means.⁴⁴ That charge was levelled in particular against the civilian 'academic' and 'technocratic' analysts from McNamara's office. In Summers' opinion, the West's defeat in Vietnam was preordained once the politicians and bureaucrats had undermined military doctrine.

Summers' conclusion may or may not be correct. Again, though, the real issue is that military doctrine does not exist in a vacuum. The importance of *sustaining an* air bombardment campaign was appreciated by airmen during World War II; indeed, the diversion of USAAF and RAF heavy bombers away from the Combined Bomber Offensive to other tasks was a constant source of frustration for airmen.⁴⁵ Contemporary doctrine correctly recognises the persistent application of air power as a necessary condition for a successful bombardment campaign.⁴⁶ In that context, a strong case could be made that, as soon as the extent of the political constraints on the air war over the north became apparent, the USAF's leaders should have been arguing *against* the campaign.⁴⁷ If, as was the case, political imperatives dictated otherwise, perhaps the best the generals could have done was

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to make the possible consequences abundantly clear to the decision makers and to try to ensure that any subsequent opprobrium attached to the policy and not the means. It is worth noting that, 20 years after Vietnam, American air power was applied against Iraq in the 1991 Gulf War in an intensive and sustained fashion, supported by strong, publicly articulated political leadership.⁴⁸

The two final points to be drawn from Vietnam concern technology. In general the American attempt to substitute technology and fire power for political will and basic military effectiveness was unsuccessful.⁴⁹ Nevertheless, the widely used substitution of technology, and especially air bombardment, for soldier's lives, was a legitimate practice, as it had been during World War II. It was a political expediency the USAF's generals simply had to accept.

There was also a highly significant technical achievement with air-delivered weapons. If over the years any one factor had invalidated the thinking of the air power theorists, it was the comparatively indiscriminate nature of air bombardment. Instead of providing the foundation for the predicted dominance of the air weapon, bombing had become something of a rod for air power's back. 'Precision' was a relative term, and despite major improvements to aircraft and delivery systems, the apparent war-winning results of aerial bombing often were obscured by public anger at 'collateral' (that is, unintended) casualties and damage. Even the advent of the ultimate air-delivered weapon had proven to be a two-edged sword. As Korea and Vietnam had shown, the use of nuclear bombs almost certainly was going to be circumscribed. Short of global war between the superpowers, weapons of mass destruction were unlikely to be used. Thus, until air forces acquired a weapon which was both destructive and discriminating, the concept of air power winning wars by itself was likely to remain an illusion. The successful use for the first time of precision-guided munitions (PGMs) in Vietnam must therefore be recognised as a turning point in air power doctrine.

PGMs initially consisted of standard iron bombs fitted with a guidance kit. A common technique was to designate a target with a laser beam which the bomb would then 'ride' until impact. As long as a target could be identified, a pin-point hit was almost guaranteed. The classic case study from the Vietnam War of the potential of PGMs is that of the attacks on the key road-rail bridge at Thanh Hoa, 80 miles south of Hanoi.⁵⁰ Between 1965 and 1972, about 700 sorties were flown against Thanh Hoa with little success. It was the introduction into the USAF inventory of 2000 lb and 3000 lb electro-optical and laser-guided bombs which turned the tables and enabled the Air Force to knock the bridge down in 1972. PGMs seemed to offer a level of destructive power and target discrimination from small numbers of aircraft which could revolutionise the use of conventional air power.

AIR POWER IN PERIPHERAL CONFLICT

The other major Asian conflict in which the RAAF was involved came between the wars in Korea and Vietnam. From June 1950 until July 1960, RAAF Lincoln and Canberra bombers were the mainstay of Commonwealth offensive air operations against communist terrorists (CTs) during the Malayan Emergency. No. 1 Squadron's Lincolns in particular played a prominent role, dropping 85 per cent of the 35 000 tons of bombs used during the campaign. The return on that effort does not read impressively. From its almost 4000 sorties, No. 1 Squadron killed only 23 terrorists, 18 of whom could consider themselves particularly unfortunate, having been accounted for in a single strike.⁵¹ For some commentators, such 'senseless' bombing only induced a feeling of 'contempt' for modern weapons.⁵² Doubts about the worth of air bombardment in 'peripheral' conflict⁵³ were reinforced by incidents such as the fall of Dien Bien Phu in May 1954, when the French Tactical Air Group shared part of the blame for the defeat of modern Western forces by what was perceived to be an army of peasants.⁵⁴ Indeed, the successes enjoyed by 'peasant' revolutionary armies (for example, in China and Cuba as well as Indo-China) against technologically superior forces in

the post-war years may have hardened some attitudes against the wider usefulness of the most technically dependent arm of combat power. With their nuclear deterrent capability, air forces unquestionably were dominant at the strategic level of conflict, but did they have other than a supporting role to play in smaller scale wars?

In fact, as has been described in Chapter Two, offensive air power had been used most effectively in peripheral conflict during the 1920s and 1930s. Using procedures developed by Trenchard, the RAF had controlled huge tracts of land and large numbers of tribesmen at a fraction of the cost of ground forces. Conditions in the deserts of the Middle East and the North West Frontier were, of course, different from those in the jungles of South East Asia; nevertheless, the success of 'Air Control' indicates that a wholesale dismissal of the use of air power in peripheral conflict is ill founded. Further support for that argument is contained in Mark Lorell's study of the French Air Force's operations in Chad between 1965 and 1986.⁵⁵ During the early phases of that campaign the French relied primarily on land forces, but as they learnt more about the nature of the conflict they progressively transferred responsibility to their Air Force. Important factors in that decision were the effectiveness of the offensive air operations, the ease with which aircraft could be either committed to battle or withdrawn, and the low cost in terms of lives placed at risk. The latter consideration was yet another instance of the variation of 'substitution' mentioned previously in this book, in which comparatively small numbers of aircrew and aircraft are substituted for large numbers of men on the ground.

Using the concept of substitution as an indicator of relative military effectiveness could be considered unconventional (which need not mean the same thing as 'invalid'). A similarly innovative approach to assessing military effectiveness was taken by Air Vice-Marshal G.H. Mills in his analysis of the Commonwealth bombing in Malaya. As the AOC of the RAF in Malaya in 1950, Mills had been challenged by the DCAS, Air Chief Marshal Sir Ralph Cochrane, over the Lincolns' results. Taking those results on their face value, Cochrane suggested they did not seem to justify the effort involved.⁵⁶ He was concerned on two counts. First, the apparent failure of the Lincolns to achieve significant results could be harmful to general perceptions of air power; and, second, the effort in Malaya was diverting resources from the Commonwealth's prime task, namely, preparing for global war.

Before Mills replied to Cochrane, the Director of Operations in Malaya, Lieutenant General Sir Harold Briggs, took the opportunity to make several points in a message to London. He argued that while the bombing campaign was expensive, it kept the communist insurgents on the move and enabled the ground forces to make more frequent contact than would otherwise be possible.⁵⁷ He also suggested that air strikes were being used because no other effective way of attacking the terrorists had been discovered. Briggs' attitude perhaps explains a great deal about the doctrinal and credibility problems air power theorists have faced. Flexibility, pervasiveness, rapid striking power and relatively low human costs for one's own forces have been the strengths on which air power has been built, but they have also facilitated its mismanagement. While conditions in Malaya may not have suited an air campaign, air bombardment represented the Commonwealth force's 'least worst' option. Air power thus became exposed to criticism which land and sea power were spared simply because of their inherent limitations.

Air Vice-Marshal Mills' response to Cochrane grappled with that issue. Mills believed that using conventional statistical yardsticks to measure the effectiveness of the air force's contribution to the conflict was unfair and misleading.⁵⁸ He accordingly had introduced a system of recording all CT casualties within designated distances and times of all air bombing and resupply missions, his logic being to attribute those casualties not only to ground force action, but also to the disruptive effect on the enemy of bombing, and the supportive effect on Commonwealth forces of aerial resupply. The morale of both sides on the ground was the key factor in Mills' approach. Using parameters drawn up in consultation with Army

Headquarters,⁵⁹ Mills concluded that air action contributed to 30.5 per cent of all insurgent casualties, 26.3 per cent from offensive action and the remainder from supply drops.

Perhaps Mills was gilding the lily. On the other hand, there was widespread official support for the value of the air force's harassment and resupply role.⁶⁰ The argument has also been made that there is a powerful political dimension to apparently ineffective bombing campaigns in peripheral conflicts. Speaking at a major international conference on air power conducted by the RAAF in 1991, journalist Greg Austin suggested that such campaigns can help to prevent the transition from guerilla war to conventional war, while also sending strong political signals to other countries (which in the case of Malaya and Vietnam was China) to limit their direct involvement.⁶¹

A THIRD AIR FORCE

In May 1986 Defence Minister K.C. Beazley announced the Australian government's intention to acquire at least 14 Sikorsky Blackhawk helicopters for the RAAF as replacements for its UH-1 Iroquois. Subsequently the order was increased to 39 aircraft, to give the RAAF the capacity to lift a complete army company.⁶² However, within six months Beazley had decided that the ownership of the 'batdefield' helicopters should be transferred from the Air Force to the Army over the following five years.⁶³ It is not an overstatement to say that his decision traumatised some senior levels of the RAAF.⁶⁴ The way in which the matter was handled within the Department of Defence and the ADF created a legacy of bitterness in the RAAF which is likely to remain for years, especially among those affected first hand.⁶⁵ The point of interest here, though, is that Beazley's decision formalised the establishment of Australia's third air force. It marked the end of a process which had been in train since at least 1951, and which reached something of a watershed in Vietnam in 1966. For many in the Army, Beazley's decision must have seemed like a just conclusion to a long struggle; to the Air Force, however, it seemed like an ill-informed rejection of air power doctrine.

The first role of the Australian Flying Corps had, of course, been army cooperation. Army support remained an important air force responsibility but, as this book has shown, it was the theories of strategic bombardment and independent action which occupied the high ground in air power doctrine. Perhaps it was not surprising, then, that Army commanders occasionally wondered about the depth of the RAAF's commitment to other tasks. Once the RAN's Fleet Air Arm had been formed as Australia's second air force in 1948, it was probably inevitable that the Army would try to follow suit. That in fact was what happened. From about 1950 onwards, there was a sustained Army campaign to establish its own air force.

A meeting of the Land/Air Warfare Committee in March 1951 had agreed that the RAAF would continue to provide all aspects of air services for the Army.⁶⁶ Only a month later, however, the proceedings from the committee's next meeting contained the genesis of Australia's third air force. Under Policy Statement No. 7, 'The Organization of Light Aircraft Support for the Army', the RAAF confirmed it would provide and maintain light aircraft for army operations.⁶⁷ However, the Air Force no longer wished to supply pilots. RAAF pilots, the policy document stated, were specialists trained to fly heavy and high-performance aircraft. Their skills would be 'wasted' on 'light' aircraft. Additionally, there was little incentive for 'specialist' Air Force pilots to acquire the knowledge of land operations necessary for army aviation. If, on the other hand, army support pilots were selected from army ranks, their training could be confined to light aircraft and they would already have the necessary background knowledge. The committee accordingly endorsed the principle that Army tasks should be flown by Army pilots. That was a critical decision in the development of independent army aviation. Inevitably, as Army pilots gained experience and their numbers increased, the generals would no longer have to rely on the RAAF for specialist advice and ideas.

Policy Statement No. 7 had stipulated that in order to avoid duplication, the Army would not establish its own aviation organisation.⁶⁸ Four years later the Army made its next move by questioning that agreement. In a major challenge to the existing command and control arrangements for Australian air assets, Army submitted an agenda item to the Land/Air Warfare Committee proposing that the command of light aircraft operations be transferred from the RAAF to the Army.⁶⁹ Army's challenge was led by the Chief of the General Staff, Lieutenant General Sir Henry Wells, who criticised the RAAF for providing only three obsolete Auster Mk 3 aircraft for Air Observation Post (AOP) duties, thereby seriously limiting land-force training. Wells noted with obvious dissatisfaction that there was no evidence that the RAAF was trying to replace the Austers with modern aircraft.

The Army stepped-up the pressure when the CGS made a demand he must have known the RAAF either could not, or would be reluctant to, meet. General Wells stated that the Army needed a minimum peacetime training force of 22 aircraft, and 3315 flying hours annually. After examining its capabilities, the Air Force replied it could provide a force of only 15 aircraft and 1900 hours, a response which was rejected by the Army as 'unacceptable'.⁷⁰ During its deliberations, the Air Board noted that the Army might be prepared to buy the seven additional aircraft from its own resources, as well as supplying personnel for technical training to increase the RAAF's maintenance effort (and hence the flying hours generated). As the board observed, any such decision would involve an important matter of principle. Yet while recognising the significance of the Army's initiative, the board seemed unconcerned; its members simply noted that it would not be possible to reduce higher priority RAAF commitments to meet Army needs.

When the matter came before the Defence Committee, the RAAF agreed that it was desirable in principle for the Army to have its own aircraft. It was left to Minister for Air Athol Townley to draw the Air Board's attention to the doctrinal maxim of the 'unity' of air power which was at issue. In a marginal note to an Air Board Minute discussing the Army's proposal, Townley wrote: 'We now have two air forces, are we to have three? If the Army is to come up to date it will need AOP aircraft, of course, and perhaps odd others. The RAAF is the air arm and should not agree to any — even the smallest part, going from its control'.⁷¹ After considering the Minister's statement and reviewing the case, the Air Board concurred that it would not be in the best interests of the national economy for the Army to duplicate existing RAAF facilities. While the board's conclusion may have been correct in terms of resources, it failed to address the central issue of giving the Army the level and quality of support it wanted. That was precisely the kind of attitude which subsequently led Air Chief Marshal Sir Neville McNamara and Air Marshal S.D. Evans to the opinion that, during the late 1950s and early 1960s, the RAAF paid only lip service to its army responsibilities.⁷²

Despite the obvious warning signs, the RAAF continued to accord army support a low priority. The acquisition process for the Iroquois helicopters provides an illustrative case study. When the RAAF made its first bid for operational helicopters in 1959, its submission rested solely on a requirement for a search and rescue capability. It was only after Cabinet had met and approved the purchase of eight Bell Iroquois UH-1B aircraft that the stated role for the helicopters was amended to read 'search and rescue and Army support'.⁷³ A subsequent order for additional Iroquois gave priority to army support from the outset.⁷⁴ When the initial requirement for operational helicopters was approved, the staff officer responsible for recommending the type and managing its introduction into service held the appointment of Operational Requirements (Maritime).⁷⁵ While there were specialist operational requirements staff officers for the bomber, fighter, maritime and transport roles, there was none for helicopters. Apparently the management of the rotary-wing force could be done on a part-time basis by an officer with little understanding of either the machine or its roles. In the event, the choice of the Iroquois could not be faulted as it proved to be a magnificent aircraft. Nevertheless, the criticism of the RAAF's attitude remains valid. It is hard to imagine the same approach being taken for the acquisition of a fighter aircraft.

Once the Iroquois had been selected, a procurement team was sent to the United States. Initially it did not include a pilot, consisting of a squadron leader equipment officer as team leader, a flight lieutenant equipment officer, a squadron leader engineer and two SNCO tradesmen. Later, Squadron Leader R.A. Scott, who was one of the RAAF's most senior rotary-wing pilots, was added to the team, but only as an adviser with no official status. Scott recalls that he was the only member of the team who knew anything about army operations, helicopters and gas turbine engines.⁷⁶ Originally attached to the team for two months, he ended up staying in the United States for six months. In contrast to the Iroquois procurement team, the group that travelled to the United States in mid 1963 to select a new bomber for the RAAF comprised an air marshal (the CAS), an air commodore engineer, a group captain pilot, two wing commander engineers, a squadron leader engineer, a squadron leader equipment officer and a senior public servant from the Department of Air.⁷⁷ The inferior status accorded to helicopter operations was not confined to aircraft procurement. Scott and another of the RAAF's most experienced helicopter pilots, Air Commodore B.I. Lane, have both stated that needs of the helicopter squadrons in matters such as personnel and support equipment were consistently given a lower priority than those of strike squadrons. Lane in fact believes that for many years the RAAF's higher echelons 'looked down' on helicopters.⁷⁸ Lane's perception is not unfounded. In 1953-54, two future chiefs of the air staff, Air Vice-Marshal V.E. Hancock and Group Captain C.T. Hannah, had been tasked with writing the policy for the employment of graduates of the RAAF College. Their starting point was that the 'hard core' of an air force is its fighters and bombers, and that every endeavour should be made to employ the RAAF's future leaders in those roles.⁷⁹

Against that background, the Army continued to expand its own air force. No. 16 Army Light Aircraft Squadron was raised in 1960 and, most significantly, an Army Aviation Corps formed in 1968. Even though the RAAF retained responsibility for airworthiness, engineering, supply and flight safety, the establishment of a corps meant that Army officers could make a career in aviation. At the time there were about 120 serving Army pilots, while by the end of the year the corps had about 80 aircraft.⁸⁰

UNITY OF AIR POWER ?

The thrust of the preceding section has been that from about 1950 onwards the Army was intent on gaining control of those Air Force assets which in the main existed to support land operations. That attitude was an extension of Army pre-World War II thinking, which held that air forces were not worthy of independent status, but rather should operate as adjuncts to sea and land forces. In the post-war years, the RAAF had not helped its cause by adopting a patronising approach to the role of army support. Despite the unquestioned commitment of those Air Force individuals directly involved,⁸¹ as an organisation the RAAF viewed the task as one which was inferior to the 'real' air force mission. That attitude was not only condescending, it was politically inept and doctrinally unsound. What was at stake was not only the control of a large number of air assets but, more importantly, the critical doctrinal maxim of the 'unity of air power'.

There are two main justifications for the concept of unity, the first concerned with organisational effectiveness and the second with combat potential. According to *The Air Power Manual*, air power demands 'an operational and organisational uniformity' if economies of scale are to be achieved, a notion of particular significance for a small country.⁸² The objective is to minimise costs while maximising flexibility and the ability to concentrate force. In the RAAF's judgment, that objective can best be achieved by giving control of all assets to one organisation and then centralising their command. Unity also embraces the operational practice known as 'surge' — that is, the ability quickly to reinforce particular combat groups. For example, RAAF doctrine states that the prime air campaign is

control of the air.⁸³ If an enemy dominates the skies, then most other military activities **will** become very difficult, if not impossible. *The Air Power Manual* also acknowledges that there can be no hard and fast rules in war. The possibility always exists that, in a given set of circumstances, priority might have to be given to, say, helicopter rather than fighter operations. It is precisely because of that possibility that 'unity of air power' is an article of faith among air forces. Unity alone confers the ability quickly to transfer assets (including pilots and support personnel) to the area of greatest need.⁸⁴

The concept of unity was the real issue in the debate over naval and army air arms: could a small country like Australia afford to divide its air power into discrete packages?⁸⁵ If the Army and Navy were able to convince the decision makers in Parliament and the Department of Defence that the ADF's combat power would be enhanced by organic land and air arms, how valid was the maxim of 'unity'? What should have been even more worrying for the RAAF was the question of where the process would end. For example, if it were decided that the Army should own the 'land' air assets, a case might also be made that the Navy should own the maritime reconnaissance squadrons, and so on. From the way the Air Force dealt with those central doctrinal questions in the 1950s and 1960s, it seems that its leaders did not understand the implications of what was happening. Perhaps the best illustration of that is the experience of No. 9 (Iroquois helicopter) Squadron following its deployment to Vietnam in mid 1966. While the squadron returned to Australia after six years with the highest of reputations for its combat operations, its experiences during the first three months were an inter-Service and doctrinal disaster.

Even before No. 9 Squadron deployed to Vietnam, friction had arisen between the Army and the Air Force over training for jungle warfare. In August 1965 the Chief of the General Staff, Lieutenant General J.G.N. Wilton, had written to his RAAF counterpart, Air Marshal A.M. Murdoch, regarding a possible increase in the ADF's commitment to Vietnam. Wilton suggested Murdoch might consider sending two Iroquois to Vietnam as an interim measure, so that the RAAF and Army could jointly build up experience in the environment.⁸⁶ As a trade-off, the CGS was prepared to accept a decrease in RAAF support for the Army in Australia. Murdoch dismissed the proposal, questioning the value of the training and expressing concern that a small RAAF detachment would come under the control of the Americans, whose tactics he believed were suspect.⁸⁷ He also claimed that RAAF helicopter crews were already gaining suitable experience in jungle conditions through operations in Malaysia.

Air Commodore Ray Scott, who as a wing commander led No. 9 Squadron to Vietnam in June 1966, has made three valuable observations regarding Murdoch's attitude. First, even though Scott was at the time the RAAF's senior Iroquois pilot (in a force which had very few experienced rotary-wing pilots) he was never consulted about Wilton's proposal.⁸⁸ Second, Scott did not believe that flying in Malaysia was entirely equivalent to Vietnam. For example, there was little if any hostile opposition, and there was none of the insertion and extraction of SAS patrols which was to become such an important part of the RAAF's Vietnam operations. Finally, based on a visit to South Vietnam in 1964 when he had flown on operations with every US Army and Marine helicopter unit, Scott shared Murdoch's concern about American tactics. His assessment of the techniques he saw was that they involved 'guts but no brains'.⁸⁹ Scott believed that tactics such as mass airborne assaults against strongly defended positions were likely to result in high aircraft loss rates, which a small force like the RAAF could not sustain.

The RAAF's response to Wilton, though, needed to reflect doctrinal as well as operational considerations. While Murdoch's case may have been fair, flatly rejecting Wilton was not the way to deal with the matter. An apparently uncooperative attitude was only likely to reinforce the long-held Army belief that the sole reliable source of battlefield air power was one which they controlled themselves, even if that meant diluting the total air power resource (a

philosophical point which probably has little interest to a soldier on the ground under fire, and who wants air support *now*). General Wilton's reply to Air Marshal Murdoch was one of controlled anger. It concluded with the veiled warning that, as the Iroquois helicopters had been bought primarily to provide support for the Army, the sooner the RAAF started to learn how to do that in operational conditions the better.⁹⁰ His point seemed reasonable.

Against that troubled background, the Army was perhaps predisposed to find fault with No. 9 Squadron when it deployed to Vietnam in June 1966 as part of the newly formed Australian Task Force (ATF). Unlike the other RAAF squadrons which operated in Vietnam between 1964 and 1972, No. 9 Squadron worked exclusively for the ATF; that is, the customer it had to satisfy was the Australian Army. According to the *RAAF News* of April 1966, No. 9 Squadron was 'ready for Vietnam' two months before its scheduled departure.⁹¹ Crews were familiar with army support work, having been trained in medical evacuation, tactical troop movement and resupply. Air Force leaders repeated the claim that the kinds of tasks the Iroquois crews would face in Vietnam were similar to those they had completed in Malaysia. Indeed, for their performance in Malaysia, No. 5 (Iroquois) Squadron — which subsequently contributed crews to the first Vietnam deployment — had recently been awarded the Duke of Gloucester Cup for being the most proficient squadron in the RAAF for the past year.

RAAF News was wrong. No. 9 Squadron was not prepared for war when it arrived in South Vietnam. Only two of the Iroquois were fitted with armoured seats, none of them had door gun mounts, and the aircrew did not have chest protectors. Perhaps because of that lack of protection, the Department of Air Organisational Directive which was issued before the squadron left Australia, and which detailed its roles in Vietnam, was cautious. The directive placed constraints on operations which were to become the source of intense dissatisfaction within the Australian Army. Problems arose in particular with troop positioning and extraction. No. 9 Squadron was authorised to conduct those operations as follows:

the lift of troops from a *secure staging area* to a landing zone that is *relatively secure and* [where] *enemy resistance is not expected*; and

the lift of troops from an operation area to a secure staging area when enemy resistance is anticipated *only on the last lift* from the landing zone.⁹²

In fairness to the RAAF, protective equipment was hard to get and priority was being given by the sole source of supply — the Americans — to the US Army.⁹³ By the same token, when the RAAF's shortages became known, all items were quickly acquired. In the meantime, the vulnerability of his aircraft forced (the then) Wing Commander Scott to make a difficult decision. In one of his first commanding officer's reports from Vietnam, Scott stated that it was necessary for him to review tasks very carefully so that crews with inadequate protection were not exposed to a high risk of close ground fire.⁹⁴

According to the historian Lex McAulay (a former member of the ARA Intelligence Corps who served three tours in Vietnam), No. 9 Squadron's perceived unreadiness for war, including its reluctance to become exposed to ground fire, led the Army to regard the RAAF with contempt.⁹⁵ That judgment was both harsh and selective. The Army's unreadiness for war in certain vital aspects appears to have attracted less attention. For example, Robert O'Neill's history of No. 5 RAR in Vietnam during 1966-67 does not mention the fact that the regiment ran critically low on ammunition shortly after its arrival at the ATF base camp at Nui Dat, which at the time was considered an insecure area.⁹⁶ In a nice irony, one of No. 9 Squadron's first tasks was to fly almost all of the RAAF's machine gun, rifle, sub-machine gun and pistol ammunition to the regiment to help rectify that extremely dangerous logistic failure. The squadron managed to shift 9000 lbs of ammunition to Nui Dat the day after it arrived in Vietnam, even though it was still assembling its aircraft, unpacking equipment and setting up its organisation.⁹⁷ It is, however, the RAAF's unpreparedness which has been remembered most critically and become conventional Army wisdom.⁹⁸

It also seems that some Army commanders either had little understanding of, or were not interested in, the doctrinal differences which would inevitably arise between air support provided by the Americans, with their hundreds of helicopters, and that possible from the limited Australian resources of several dozen aircraft. Air Commodore Scott recalls trying to explain to senior ARA officers in Vietnam that tactics such as mass airborne assaults simply were not acceptable, as Australia could not sustain the high loss rates sometimes associated with those operations.⁹⁹ Senior RAAF officers believe their logic fell on deaf ears, as Army officers simply did not want to listen.¹⁰⁰

The Army's attitude towards RAAF helicopter doctrine represented a considerable double standard. Australia's first substantial commitment of ground forces to Vietnam consisted of one battalion, which was amalgamated with an American brigade. The decision to increase the commitment from one battalion to a task force (which was effected in May/June 1966) was taken primarily because General Wilton and his senior Army commanders believed US Army doctrine was unsuitable for the ADF. By deploying an independent task force — including RAAF helicopters — Australian troops would be able to 'employ their own operational concepts and procedures, regarded by Australian strategists as superior to United States doctrine in South Vietnam'.¹⁰¹ It seems curious that the Australian generals rejected American Army doctrine for ground operations yet endorsed it for air operations, about which they knew comparatively little. Presumably they also were unaware that the US Army was experiencing worrying problems with its helicopter operations. At the same time as the Australian Army was criticising No. 9 Squadron and citing the Americans as the paradigm for rotary-wing expertise, a US Army team was visiting No. 9 Squadron to try to determine why the RAAF's Iroquois availability rate was so high, its mission completion rate so good, and its loss rate so low.¹⁰²

Army intransigence extended to joint planning. Scott recalls taking the Commander of the RAAF in Vietnam, Air Commodore Jack Dowling, to meet the Commander of the Australian Force Vietnam, Major General K. Mackay, on the day Dowling arrived. When Dowling suggested to Mackay that the first thing they should do was some joint planning, he was brusquely informed that the Army had done all the planning that was necessary.¹⁰³ Dowling subsequently noted that his job and that of the first Task Force Air Support Officer at Nui Dat, Group Captain P.F. Raw, were made 'most difficult' because of the uncooperative attitude of Army officers, 'both senior and junior'.¹⁰⁴ Group Captain Raw's successor as Task Force Air Support Officer, Group Captain H.D. Marsh, was subjected to the same treatment, even though by the time he took over in April 1967 No. 9 Squadron had been operating very successfully for nine months.¹⁰⁵ Along with other senior RAAF officers, Marsh routinely found himself excluded from Task Force planning conferences.

The friction between the RAAF and the Army peaked in July 1966 when the Task Force Commander (Brigadier O.Jackson) attempted to dictate the crew composition of the Iroquois for certain tasks, an action described by Scott as 'ridiculous'.¹⁰⁶ Scott advised his superiors that unless the command and control system and the methods of operating and tasking Iroquois were clearly understood, 'operations will be inefficient, and bitterness and distrust between the Services will develop'. In the event, that was precisely what happened. When Air Marshal Murdoch visited Vietnam in August, he was told by Brigadier Jackson that No. 9 Squadron was not providing the support the Army wanted.¹⁰⁷ It must have been a chastening experience for the CAS, given his rejection of General Wilton's request to send a couple of Iroquois to Vietnam to gain experience less than a year ago. Had the Air Force been more understanding of the Army's position then perhaps in turn the Army might have been more disposed to listen to RAAF doctrine.

As it was, the damaging myths grew. It has been reported that Major General Mackay grounded No. 9 Squadron in Vietnam (a humiliating action to take against a squadron at any time, let alone during a war) for a brief period during the first few unhappy months.¹⁰⁸ That

report is not supported by official records. Most of No. 9 Squadron arrived in Vietnam on 12-13 June 1966. Several days were needed to settle in, although, as was mentioned above, the squadron did interrupt its preparations to fly urgently needed ammunition to No. 5 RAR. From then on, the squadron flew on operations every day in June, July, August and September — that is, throughout the troublesome period when they allegedly were grounded.¹⁰⁹ Even when the tide began to turn the RAAF seemed unable to escape Army prejudice. A major factor in the improvement of RAAF/ARA relations was the resupply of ammunition to soldiers of 'D' Company, No. 6 RAR, by two of No. 9 Squadron's aircraft during the battle of Long Tan on 18 August. That resupply was vital for the 100 or so Australians pinned down by an enemy force of about 2500. The mission was flown in appalling weather and in the face of expected intense enemy action. One of the four pilots involved, Flight Lieutenant Bruce Lane, felt sure that at least one aircraft would be lost.¹¹⁰ By any standards, the resupply was a brave achievement, and one which helped 'D' Company to hold on until reinforcements arrived. Yet once again, a harmful rumour was circulated in some Army circles, this time, that the RAAF had refused to fly to 'D' Company's aid until threatened with dire consequences. In a section of his book on the battle of Long Tan titled 'myths and memories', Lex McAulay exposes that particular myth.¹¹¹ However, if a tribute to the Battle of Long Tan published in the *Canberra Times* on the battle's 25th anniversary is any guide, the myths persist. The author of the tribute wrote of helicopters which were 'stationed too far [away to help] anyhow, Costing too much valuable time'.¹¹² In fact, the two RAAF Iroquois which flew the ammunition to 'D' Company had been at Nui Dat all day, only three miles from Long Tan.¹¹³

From the preceding discussion, it is evident that a good case could be made that the Army was ready to find fault with the RAAF's performance in Vietnam. Clear signals had also been given that any shortcomings on the Air Force's part were likely to be used to promote the cause of an independent Army air service. In the circumstances, the RAAF needed to display political acumen. The fact that it did not was due to a failure of doctrine. While operationally the RAAF once again demonstrated its admirable technical skills, politically it was inept. Over the years some RAAF leaders had routinely treated the Army's needs with arrogance, while almost invariably helicopter operations were regarded as an after-thought to the 'real' air force tasks of air superiority and bombardment. In terms of independent operations and the application of firepower, that attitude was defensible. However, in the context of air power doctrine in its fullest sense, it was limited and self-defeating. If, in 1986, when the RAAF lost its helicopters to the Army, the doctrinal concept of the 'unity of air power' became an Air Force battle cry, in the early 1960s it was a phrase used with a touch less sincerity. At the same time, neither did the Army emerge from the whole affair with much credit.

EFFICIENT BUSINESS METHODS

Throughout World War II the RAAF had been organised primarily on an 'area' or geographic basis. By late 1951 the Air Board was starting to doubt whether that was the most efficient management system. The favoured alternative was the organisation used by the RAF, in which units were grouped by function rather than the sometimes accidental arrangement of location.¹¹⁴ Thus, while the RAAF had its Eastern Command, Western Command and so on, in which different types of aircraft and functions might be located, the RAF was organised into groups like Bomber, Fighter and Coastal Command. The main appeal of the functional system was the concentration of force it facilitated. Some RAAF Air Board members doubted whether the British organisation could be transplanted to Australia, pointing to the problems of distance, isolation and limited communications services; additionally, they felt the RAAF's comparatively small number of aircraft would make the formation of a number of specialist commands a dubious proposition. Nevertheless, board

members acknowledged the merits of functional groupings and agreed future developments might permit the concept to be adopted.

They did not have long to wait. On 14 January 1952, Air Marshal Sir Donald Hardman of the RAF assumed the office of CAS of the RAAF. For both personal and political reasons, the reorganisation of the RAAF was an item high on Hardman's agenda. Personally, he was committed to the objective of introducing more efficient business methods wherever he worked, be it the RAF or the RAAF.¹¹⁵ Politically, there was a good deal of resentment within the RAAF at the choice of an outsider as CAS.¹¹⁶ By publicly declaring his intention to reorganise the RAAF — a subject in which he was regarded as expert and Australian officers were not — Hardman sought to deflect controversy. In fact, his appointment reflected the Australian government's concern over the quality of the RAAF's senior leadership. The circumstances surrounding his nomination warrant brief mention.

Despite having occupied the CAS's office since 1942, Air Marshal Jones had never quite succeeded in repairing the damage done to his leadership by his wartime conflict with Air Vice-Marshal Bostock. Public interest in the affair flared up periodically, even to the extent of calls for a royal commission.¹¹⁷ Nor was Jones ever able fully to convince the post-war politicians that he was the right man for the job, notwithstanding his record uninterrupted tenure. Indeed, Prime Minister R.G. Menzies and Minister for Air T.W. White on different occasions privately expressed their concern over the poor quality of the RAAF's senior officers in general and the CAS in particular.¹¹⁸ While both men believed the Air Force had many capable, operationally experienced young officers, they felt the senior ranks lacked men of the calibre to be CAS. Menzies' concerns went deeper: according to the British High Commissioner in Australia, he was 'anxious about the whole state of the RAAF'.¹¹⁹

Because of that anxiety — which turned on the intellectual quality of the RAAF's leadership — a good deal of pressure was applied by the Australian government to the RAF CAS, Sir John Slessor, for an English officer to replace Jones. On different occasions throughout 1950 and 1951, Slessor (who himself was one of the best thinkers and writers on air power produced by the RAF) was approached on the subject by Menzies, White, Sir Frederick Shedden and Minister for Defence Sir Philip McBride.¹²⁰ Slessor was unhappy with the approaches, but reluctantly accepted that he would have to accede to the Australian request. His decision to appoint Hardman wrote an interesting footnote to RAAF/RAF relations. For many years there had been a residue of bitterness in the RAAF, first, over the gratuitous report on RAAF flying standards submitted by Sir Edward Ellington in 1938; and, second, over the undistinguished tenure as CAS of Sir Charles Burnett from 1940 to 1942. Slessor and his Air Member for Personnel both noted the need not to 'repeat the follies of some years ago' in the appointment of British officers to the RAAF.¹²¹ This time, one of the RAF's best would have to be chosen. Hardman met that criterion.¹²² It is also noteworthy that Menzies appreciated that another outside appointment was likely to be resented by the RAAF, and had discussed with the British High Commissioner in Australia the possibility of justifying the decision on the basis of reorganising the RAAF into functional commands, an arrangement with which an RAF officer would be more familiar than his Australian counterparts.¹²³

It took Hardman a year to lay the groundwork for the reorganisation. The proposal he presented to the Air Board in May 1953 stated that efficient business methods in large organisations were based on the maximum practicable amount of decentralised authority and responsibility, commensurate with the retention of adequate control and coordination.¹²⁴ He further argued that the application of that principle facilitated the introduction of a reasonable degree of functional specialisation into an organisation. Each of those key organisational principles applied 'with equal force' to a fighting service. Hardman then suggested his proposed reorganisation would redress some of the more significant failings of the RAAF's area command system. Because of geographical bias, operational

activities had become largely concentrated in the Eastern Area, and training activities in the Southern Area. Exercises conducted outside those areas tended to suffer from the relatively small size of their staffs. Further, the somewhat fragmented system could make coordination and the concentration of functional activities difficult. Finally, units in the smaller areas did not always receive the same degree of operational training as those from Eastern Area.

Hardman believed that if a functional system of command were adopted, it would be possible to achieve a higher degree of efficiency in all aspects of operations and administration than had previously been possible. The devolution of activities from Air Force Headquarters to functional commands would establish closer contact between commanders and their units, while station commanders would have more authority and thus would be better prepared for wartime duties.¹²⁵ The CAS recommended the reorganisation of the RAAF into three functional commands under Air Force Headquarters. Home Command was to be responsible for the command of all operational units, Training Command for recruiting and individual training and Maintenance Command for supply and technical services. Air Force Headquarters was to be renamed the 'Department of Air' to describe more correctly the scope of authority of the central command. Hardman's reorganisation subsequently was approved by the Minister and implemented.¹²⁶

Six years later, following a review of the new higher organisation by a committee headed by Air Vice-Marshal I.D. McLachlan, the functional command system was rationalised from three commands to two. Home Command was renamed Operational Command, and Training and Maintenance Commands were amalgamated into Support Command.¹²⁷ McLachlan's committee noted that the functional system introduced by Hardman had resulted in the 'improved efficiency of the Air Force as a whole'. The intention now was to take the process a step further. McLachlan believed that amalgamating Training and Maintenance Commands would facilitate the coordination of all support functions. There would be little significant change in the activities and responsibilities of the new Operational Command.

A BALANCED AIR FORCE

Hardman's appointment and his reorganisation of the RAAF was evidence of the continuing strong British influence on the RAAF. That influence continued when, in the late 1950s, the RAAF adopted as its first authoritative reference on air power doctrine the fourth edition of the RAF manual AP 1300, *Operations*.¹²⁸ The AP 1300 was written specifically to meet British circumstances and needs, and in a number of respects was unsuited to the RAAF. Most notably, its content related to a nuclear air force, a point the British CAS, Sir Dermot Boyle, made plain in his foreword. Still, it was a fine piece of work, clearly written and presented, and containing a great deal of information on the full range of air power activities.

The authors of the successive editions of the AP 1300 did not want their doctrine to become confused with dogma. Sir John Slessor took the opportunity to remind readers of the nature of doctrine in his foreword to the third edition. While the manual's content was to be accepted as the basis of all training in the RAF, it was not 'the last word', as the art and technique of air warfare were in a constant state of change.¹²⁹ It was one of the AP 1300's roles to provide the intellectual basis for that process.

The AP 1300 served as the RAAF's air power 'bible' for a quarter of a century.¹³⁰ For a generation of officers, some knowledge of its contents was essential for success in a variety of promotion exams. However, whether the manual was subjected to critical review beyond that practical and unavoidable level is questionable. The fact that the AP 1300 was not formally adopted by the RAAF until the late 1950s is indicative of the lack of emphasis placed on doctrine, as previous editions had been available for almost 30 years. First published by the Air Ministry in July 1928 and known as the RAF War Manual, *Operations* had been revised in 1940 and 1950 before the fourth edition was finally adopted by the RAAF. The revised

editions generally reflected refinements in procedures and tactics, and the advance of technology. Thus, the second edition of 1940 introduced changes to joint warfare and command and control procedures which World War II had made necessary, while in 1950 the third edition more comprehensively incorporated the lessons of the war, as well as presenting some of the emerging issues of the nuclear age. Those changes reflected significant developments in capabilities and practices. The successive editions of the manual were, however, notable for the consistency of their general concepts regarding the nature and employment of air power.

The list of the manual's chapters presented at Figure 5.1 amounts to a summary of the concepts, priorities and logic of air power doctrine in 1957 — that is, at the height of the Cold War. Making due allowance for technological change, there is little if anything in those broad points that would have worried Sir Richard Williams in 1921 or Air Marshal Funnell in 1991. In particular, the manual's contention that the primary agent of air power is a weapons system which can deliver enormous firepower over great distances reaffirmed the fundamental belief of the major air power theorists.¹³¹ That belief aside, the major notion to emerge from the AP 1300 as far as the RAAF was concerned was that of the 'balanced' air force: that is, an air force structured to meet the full range of demands likely to be made on air power.¹³² As Figure 5.1 indicates, a balanced air force would include assets needed for the execution and support of all air, land and maritime operations.

FIGURE 5.1

SUMMARY OF CONTENTS
AP 1300, OPERATIONS, 1957

<i>Chapter</i>	<i>Title</i>
1.	War and the Nation
2.	The Armed Forces
3.	The Principles of War
4.	Air Power
5.	Intelligence
6.	The Bomber Offensive
7.	Air Defence
8.	Air/Sea Warfare
9.	Land/Air Warfare
10.	Air Transport Operations
11.	Air Reconnaissance
12.	Air Operations in Undeveloped Countries
13.	Protection of Air Forces on the Ground
14.	Signals
15.	Administrative Factors Affecting Operations
16.	Command, Leadership and Morale

Source: APSC, RAF Manual AP 1300, *Operations* (4th edn), Air Ministry, 1957.

'Balance' is a concept which does not have universal relevance. It is unlikely, for example, that the air force of a land-locked country like Switzerland would need too much in the way of an air/sea warfare capability. Similarly, few countries in the world have ever possessed a bomber fleet able to deliver enormous firepower over long distances. In general, and especially during peacetime, air forces have been, and continue to be, structured to meet a nation's most pressing security needs. Financial constraints have almost invariably imposed another limit on size and capabilities.

The argument might therefore be made that, to some extent, 'balance' as a concept is indicative of intellectual laziness, of an unwillingness to analyse a particular set of conditions and decide the most appropriate force structure. There is also the danger for a small force that by trying to maintain a little bit of everything, essential capabilities will be dangerously diluted. While acknowledging those points, several former RAAF chiefs of staff have stated that 'balance' was not an idea which developed in Australia by default, but rather was adopted after careful consideration. They have argued that, given Australia's over-riding strategic planning imperatives of geography, population and economy, it is very difficult, if not impossible, to ignore any of the possible air campaigns of control of the air, air bombardment and air support for combat forces.¹³³ It thus seems possible that the major intellectual problem addressed by the RAAF's leaders during the 25 years the AP 1300 held sway was not so much the development of doctrine but rather trying to set priorities for resources in a 'balanced' air force. As No. 9 Squadron's experience in Vietnam in mid 1966 demonstrated, that could be a highly political business.

While properly focusing on air force operations, the AP 1300 devoted major sections to air/sea and air/land warfare. Throughout the 1950s and 1960s the RAAF participated in moves to translate that theory into practice through its involvement in the establishment of joint committees and planning staffs, and operational and training institutions for joint warfare.¹³⁴ Despite those initiatives, inter-Service rivalries continued to influence attitudes. In 1955, for example, Viscount Montgomery gave a resounding endorsement to air forces, suggesting that the time would come when air power would be the major factor in the control of the seas, and that airmen rather than sailors should command most maritime forces.¹³⁵ Montgomery's subsequent moderation of his comment came too late to prevent a debate described by the *Age* as yet another 'defence controversy', in which a participant's position often depended more on his Service background than logic.¹³⁶ Perhaps the most sensible comment during the debate came from a Vice-Admiral Hughes-Hallett, who suggested that in the maritime sphere, air and sea operations should be regarded as joint rather than discrete. Still, with such eminent supporters as the hero of El Alamein, it must have been tempting for the RAAF's leaders to develop the strike elements of their 'balanced' force at the expense of the remainder.

EDUCATING A 'MISSILE' SERVICE

Seven years after the first intake of cadets marched into the RAAF College in 1948, the Air Board ordered a review of the institution to determine whether it was meeting the RAAF's future needs.¹³⁷ A major force behind the review was the Air Member for Personnel, Air Vice-Marshal F.R.W. Scherger (who continued to take an active interest in the College's syllabus after he became CAS in 1957). One of the main questions the board wanted answered in 1955 was whether the college was graduating officers with a satisfactory knowledge of the capabilities and uses of guided missiles. While board members considered it unlikely that the manned aircraft would ever disappear from air forces, they shared the widely held belief that there would be an increasing demand for officers who understood both manned aircraft and guided missiles; that is, whose traditional flying training was complemented by a specialist technical education. In effect, Scherger and his colleagues wanted to lay the foundations of a nuclear-age air force.

A review committee headed by Air Vice-Marshal I.D. McLachlan was appointed. In a far-reaching judgment, the McLachlan Committee concluded that there were technological developments in train which would make the Air Force of the future primarily a missile Service.¹³⁸ Consequently, the RAAF's future executives would need an advanced education in the sciences. McLachlan stated that if that objective was to be met, cadets would require a tertiary education. He proposed that the RAAF College be renamed the RAAF Academy, and its students trained in three major areas: a course of study leading to a degree in science and embracing a broad general education; flying training; and physical, military and leadership training. A new syllabus was proposed, with four divisions: Military Studies, Pure Science, Aeronautical Science and the Humanities. After lengthy negotiations, Melbourne University agreed to become the sponsoring authority for awarding degrees to graduates of the renamed RAAF Academy. In January 1961 the first academy course started with 27 students.

Academy students received a more structured education in air power than their predecessors. College cadets had studied the subject as part of an 'integrated' course which considered air power in the context of economic and strategic geography, the history of war, international relations, national war preparedness, and the capabilities and limitations of air forces.¹³⁹ By contrast, the academy taught air power as a separate course, and required final (fourth) year students to submit a sub-thesis on the topic.¹⁴⁰ Air power was also studied by academy cadets in the 'Arts and Military Studies' group of subjects, such as modern history and international relations, the history of war, and military science.¹⁴¹ However, according to two officers who in the late 1980s were to play prominent roles in the establishment of the RAAF's Air Power Studies Centre, much more needed to be done. Air Commodore I.M. Westmore and Group Captain MJ. Rawlinson have both stated that the study of air power at Point Cook was neither exhaustive nor rigorous. Rawlinson also believes that most graduates' knowledge of the subject did not improve for the next 10 to 15 years.¹⁴²

Education at the academy was in fact overwhelmingly directed towards pure science. Cadets graduated with a Bachelor of Science degree, with a double major in physics.¹⁴³ There was little choice of subjects. The degree structure had been chosen to satisfy the belief of Scherger, McLachlan and their colleagues that when, in 20 to 30 years time, the RAAF had become primarily a 'missile' air force, the graduates from the 1960s would have the right background. It has also been suggested that the particular science degree was selected because it was the most convenient for Melbourne University to offer to a remote campus (Point Cook).¹⁴⁴

Academic staff at Point Cook seemed confident that, notwithstanding the fact that they were teaching a degree with a double major in physics, cadets were receiving a broad education. In 1968 a lecturer in education at the academy, John Sharwood, wrote that the RAAF was training an 'elite' who would become future leaders in national affairs and the professions. Sharwood stated that the Air Force could not afford to let 'technocrats' determine and administer its role in the future.¹⁴⁵ His opinion was supported by Maurice Brearley, a lecturer in mathematics.¹⁴⁶

Yet, as indicated by periodic reviews, concern persisted over an apparent lack of balance in the academy syllabus, with proposals being regularly made to increase the time allocated to the humanities.¹⁴⁷ One major review carried out in late 1964 set a target for the humanities of 25 per cent of all academic periods. That target was not reached, with the breakdown for the four major subject groups remaining as follows: pure science 45.8 per cent, applied science 12.6 per cent, humanities 22.1 per cent, and physical activities 19.5 per cent. There is a body of opinion amongst some college and academy graduates that it would have been better had an Arts degree been offered as an alternative to Science, thus broadening the educational options.¹⁴⁸ As it was, the academy seemed likely to inculcate in its future leaders precisely the 'technocratic' outlook which John Sharwood had claimed it could not afford.



Air Chief Marshal Sir Frederick Scherger: A missile air force and nuclear deterrence. RHS.

The Air Board's belief that the RAAF was likely to become predominantly a missile air force was logical and consistent with the prevailing view in Western countries. Its members deserve credit for their forward thinking. At the same time, their decision contained inherent risks. The possibility that the academy's syllabus might reinforce the Air Force's natural tendency to become a technocracy was in itself an important philosophical issue which required careful monitoring. There was, however, an even more fundamental problem. The fact was that the academy's educational core of a science degree with a double major in physics rested on a flawed assessment of the Air Force's needs. The central assumption of the McLachlan Committee on which the academy syllabus was based — that the RAAF would become predominantly a 'missile' air force — did not start to happen during the 1960s as expected, nor has it happened in the quarter of a century since. Even though the introduction into the RAAF during the 1960s of aircraft like the Mirage, the F-111, the P3, the Caribou, the Iroquois, the Macchi and an improved version of the C-130 made it increasingly obvious that manned aircraft were not about to be superseded to any great extent by missiles, and RAAF air defence doctrine in 1964 formally recognised the primacy of the manned fighter over the surface-to-air missile,¹⁴⁹ the academy continued to offer only a single, highly specialised degree intended to train young men to command a 'missile' air force. In other words, the RAAF's future executives were being educated to lead an air force which did not exist. That extraordinary situation prevailed until 1986, when the tri-Service Australian Defence Force Academy opened and offered cadets an education in a range of disciplines.¹⁵⁰

THE POWER AND PROBLEMS OF TECHNOLOGY

The impact of technology on doctrine is obvious. While it was the thinking of the air power theorists which set the doctrinal agenda, it is difficult to overstate the importance of technology. Quite simply, airmen struggled to realise their ideas until scientists and engineers could match concepts with hardware. Progress in the relationship was evident during World War II, when the power of technology was one of the critical factors contributing to the eventual dominance of the allied air forces. For example, the campaign for control of the air over the United Kingdom was largely dependent on inventions such as radar, and continual improvements to fighter aircraft. Air bombardment eventually achieved devastating power through the combination of the USAAF's B-29 bomber and the atomic bomb. And air support for combat forces was enhanced, at sea, by anti-shipping radar and improved armour-piercing bombs, and in the land battle by the use of better close support aircraft like the Soviet *Shturmovik*^m and more effective weapons.

Like most military forces, the RAAF was reduced dramatically in size after the war. Through technology, however, it seemed that air forces would be able to retain their pervasive influence over the battlefield by doing more with less — by flying higher, further and faster, and delivering greater loads and striking power with far fewer platforms.¹⁵² As much as its budget would allow, the RAAF embraced new technologies as an essential part of the solution to the air power task. From the decade starting in 1955, it embarked on a re-equipment program unparalleled in peacetime.

Before commencing that program, the Air Board reviewed its doctrinal priorities to ensure that any new force structure would be best suited to deal with the most likely threats. RAAF planners were particularly concerned by the possibility of a 'resurgent' China and the war-waging ability of Japan.¹⁵³ The worst case the RAAF envisaged was an air attack on Australia, perhaps by China or Japan, following the fall of the South East Asian barrier. Should that happen, Australia could expect reinforcements from its allies but there might be delays. Priority in the force structure therefore was to be given to the types and numbers of aircraft which could hold an enemy at bay until reinforcements arrived. In the interests of self-sufficiency those types were, if possible, to be built locally.

ChapterFive

The deliberation over which types of aircraft the RAAF should acquire to achieve that objective was doctrinally sophisticated. Board members began by reaffirming control of the air as the first principle of air warfare.¹⁵⁴ As long as the RAAF could control the skies, Australia's security would be largely assured. That did not necessarily mean that priority should go to the fighter force. Fighters were defensive and reactive, and could only gain local (as opposed to general) air superiority, often at a time and place of the enemy's choosing. Enduring dominance could be won only by taking the fight to the enemy with an air striking force. As the Air Board noted, even after the RAF's Hurricanes and Spitfires had won the Battle of Britain, the United Kingdom was still subjected to massive air bombardment. By contrast, the relative freedom from air attack which the Normandy invasion forces had enjoyed had been due largely to the success of the allies' pre-invasion bombing campaign against the Luftwaffe. Offensive action by bombers remained the key to long-term security.

However, Australia could not hope to manufacture or man a bomber force of the necessary size; nor, in the Air Board's opinion, should it need to, given the expectation of rapid reinforcement from the United States and Great Britain. The best strategy for the RAAF, therefore, was to concentrate on short-term security by winning local air superiority, as Fighter Command had done during the Battle of Britain. That judgment swung the pendulum back in favour of fighter aircraft. Even though the Air Board considered fighters would eventually be replaced by missiles, the greater flexibility of the manned machine made it the preferred choice for the time being. Training aircraft also were a high priority, as the RAAF believed it would be necessary to train large numbers of pilots rapidly should war occur. Board members stipulated that the fighter and trainer both had to be built in Australia and were to be jet powered. As the country's technological strength grew, consideration could be given to the local construction of bomber, maritime patrol, reconnaissance and transport aircraft. In the meantime, they would have to be bought overseas.

A year later the RAAF was ready to implement those concepts. 'An air force cannot be maintained in readiness for war and at a high level of efficiency', the Air Board stated in 1954, 'unless it is rearmed from time to time with the most modern and efficient types of aircraft'.¹⁵⁵ The Board's assessment was shared by the government of Prime Minister R.G. Menzies, which believed that if the RAAF were to meet its national security objectives, rearmament across almost the entire fleet was necessary. Consequently, it was decided to send a mission headed by Air Vice-Marshal A.M. Murdoch¹⁵⁶ to the United Kingdom and North America to examine and recommend suitable types of aircraft for the fighter, jet trainer, transport, communications and bomber roles.¹⁵⁷ Murdoch's brief contained three main points. First, the structure of the RAAF was to conform to endorsed strategic guidance, in which the national security priorities were identified as the defence of Australia, support for the allies in the Cold War, and the defence of Malaya.¹⁵⁸ Second, the selected fighter and trainer had to be manufactured in Australia; some components of the bomber were to be produced locally if possible; and because the RAAF almost certainly would operate with either British or American forces, types in common use with those air forces were preferred. Finally, when recommending the numbers of the various aircraft types needed, Murdoch's team was to observe the doctrinal principle of maintaining a 'balanced' force.

After three months overseas Murdoch's team presented its report.¹⁵⁹ Each of the recommended aircraft types represented an enormous technological leap over its predecessor. Perhaps the biggest increase in capability came with the proposal to buy the Lockheed C-130 Hercules to replace the distinguished but obsolescent Dakota. The Mach 2.0, high-altitude Lockheed F-104A fighter favoured by Murdoch represented a similar technological leap over the RAAF's transonic F-86 Sabres, as did the gas turbine powered de Havilland Vampire trainer over the piston-engined Wirraway. Because it was not intended to order the bomber for several years, the mission left open the choice between the Avro Vulcan and the Handley Page Victor. While the operating speeds and altitudes of those

aircraft were not greatly superior to the RAAF's Canberras, their range and potential weapons load gave them the genuine strategic capability the Canberra lacked.

Factors such as financial constraints and changing priorities combined to prevent the appearance in the RAAF's inventory of the F-104 and the V-Bombers. That did not invalidate the principle of the power of technology which had been central to the government's and the Air Force's thinking when Murdoch's brief was drafted. Two subsequent major procurement teams continued to observe the principle. In 1960, Air Marshal Sir Frederick Scherger's team chose the Mirage to replace the Sabre¹⁶⁰ (in lieu of Murdoch's F-104 which had lost favour); and in 1963, Air Marshal Sir Valston Hancock's team set in train the process which eventually saw the radical variable-geometry ('swing wing') F-111C bomber enter RAAF service.¹⁶¹ It was largely because of the RAAF's belief in the power of technology that Hancock was able to state in 1965 that the preceding decade had seen the greatest expansion program in terms of quality which the Air Force had ever experienced.¹⁶² The Mirage, Caribou, C-130A, Iroquois and Neptune SP2H were already in service; and the Orion, C-130E, F-111 and a new training aircraft were in the pipeline. According to Hancock, for the first time in its history the RAAF would have the necessary weapons systems and support infrastructure to give it a 'virtually unrestricted all-weather air defence and striking capability'.

The RAAF was a comparatively small air force supported by a limited population and financial base and with a vast area to cover. Exploiting technology to cope with those circumstances was a logical approach. However, high technology was not a one-way street. It brought with it force structure and doctrinal challenges which were not easily resolved. One major problem was the sheer rate of technological progress. For example, when Australia was considering a replacement for its Sabre fighters in the mid 1950s, the Air Staff assessed that, because of the rate at which aircraft were improving, a new type would be needed every four years if the RAAF were to remain at the forefront of technology.¹⁶³ A four-year replacement cycle would be prohibitively expensive; additionally, as the lead-time in aircraft design and production almost invariably exceeded four years, any fighter the RAAF wanted would have to be ordered while it was still under development. For an air force which could only afford to operate one fighter type, that technological constraint spilled over into force structure and doctrine considerations. Should the RAAF order an aircraft straight off the drawing board which promised leading-edge performance, but which carried the risk of unproven technology; or should it opt for a proven but less advanced design? The RAAF's position was in direct contrast to that of the USAF, which was able to pour money into research and development. In the mid 1950s when the RAAF was agonising over its Sabre replacement, the Americans introduced no fewer than six new fighters within three years.¹⁶⁴ In a sense, the USAF was able to substitute money for force structure planning and, therefore, to a degree, doctrine. RAAF doctrine, on the other hand, had to be more responsive to the organisation's limited capacity to pay for high technology.¹⁶⁵ No better illustration of that exists than the experience of the air defence system during the 1950s and 1960s, when the debate over the relative merits of missiles and manned aircraft was at its height.

British Defence Minister Duncan Sandys' White Paper of April 1957 is generally regarded as the landmark document in the aircraft versus missiles debate.¹⁶⁶ The passage of years has shown that Sandys overstated the likely dominance of missiles and the concomitant demise of manned aircraft. At the time, however, his argument was reasoned and convincing. The effects of Sandys' paper were widespread and not confined to Great Britain. In Australia, his paper contributed to major force structure confusion. That confusion was most evident in the RAAF's planning for the air defence system, which in the space of 10 years shifted its priority from aircraft to missiles then back to aircraft.

In 1955 Australia's air defence system was based on interceptor aircraft, control and reporting radar, and ground communications installations. Because the radars at Perth,

Darwin and Sydney were all obsolete, the system was ineffective.¹⁶⁷ As the AOC Home Command noted somewhat whimsically, that did not particularly matter since the RAAF's Sabre fighters lacked the airborne radar which was necessary to complete most intercepts, regardless of the effectiveness of any ground radar system. Steps had been taken to redress the problem: the Murdoch mission had recommended a new fighter, and a new search radar was to be installed at Brookvale in Sydney. In the meantime, the AOC stated, interceptions except in fine weather conditions 'would be largely a matter of good fortune'.¹⁶⁸

The fighter aircraft/ground radar combination had been the cornerstone of air defence systems since World War II. In April 1957 — the month Sandys tabled his paper in London — the RAAF's Air Staff identified a requirement for a surface-to-air guided missile system to *supplement* Australia's existing air defences.¹⁶⁹ Fighters remained the prime intercept weapon but they needed support, as the increasing speed of bombers and the advent of nuclear weapons had made it imperative to destroy enemy aircraft before they reached the point of bomb release.¹⁷⁰ The Air Staff proposed the acquisition of a mobile, point defence (as opposed to an area defence) missile system, capable of intercepting targets flying at 600 knots, between altitudes of 10 000 to 60 000 feet, in all weather, day and night, out to a range of 15 miles. The system's main functions were to be training, and dealing with sporadic raids by small numbers of attacking aircraft.¹⁷¹ Missile systems examined included the British Bloodhound, and the American Nike-Hercules and Hawk. Eventually an order was placed for a squadron of Bloodhounds.¹⁷²

Such was the power and apparent pace of technology, and its impact on decision makers, that within two years the priority the RAAF had given to manned fighters over missiles was reversed. In 1959 the RAAF again reviewed the structure of the air defence system. Even though the Bloodhounds had not arrived, the Air Staff stated that the basis of a modern air defence system was the surface-to-air guided weapon, *augmented* by manned fighters and that ultimately a number of SAGW squadrons would be needed for the air defence of Australia.¹⁷³ Presumably the cost of additional missile squadrons would have been offset by disbanding fighter squadrons.

However, the Air Staff had misjudged the power of the particular technology. By the mid 1960s Australia's air defence priority had yet again been reversed, with the pre-1959 preference for manned interceptors once more holding sway. Despite the optimism of the late 1950s, missiles had not proven to be the answer to the air defence problem. On the contrary, for a vast country with limited resources and a range of security needs like Australia, that most fundamental determinant of air power doctrine — flexibility — had reasserted itself. In the RAAF's case, technology was working for the aeroplane and against the missile. After only several years in service, No. 30 Squadron's Bloodhounds were already obsolescent and, being limited to one role, represented poor security cost-effectiveness.¹⁷⁴ By contrast the RAAF's new, high-performance Mirage interceptors could be used for a variety of missions. They were armed with radar-guided and infra-red seeking missiles, as well as guns and were also reasonably capable in the close air support, reconnaissance and bombing roles. Less than six years after endorsing surface-to-air guided missiles as the future of air defence, the Air Force reversed its policy. Should it be considered necessary to replace the Bloodhounds then, the RAAF stated, any replacement would be no more than a 'complement to the manned fighter aircraft'.¹⁷⁵ In the event, the Bloodhounds were not replaced.

By 1971 the Mirage was established in squadron service. That did not mean, however, that Australia enjoyed a secure air environment. Getting the technology right and achieving the correct balance in the force structure demanded more than aeroplanes. While the Mirage was an excellent interceptor, it was only part of a system. It could not defend Australia from enemy bombers without an adequate control and reporting system. As had been the case in the past, the RAAF had only part of the equation in place. During World War II the Darwin

area had been subjected to more air attacks than any other part of the country. Despite that, in 1971 the RAAF assessed Darwin's air defence radar system as 'completely vulnerable'.¹⁷⁶ A series of exercises had shown that relatively old aircraft like the Vulcan and the Canberra could, if flown at low level, penetrate the existing radar coverage without detection until just before weapon release. While the RAAF now had a modern fighter with an advanced airborne intercept radar, it effectively was little better off than it had been in 1955 when the AOC Home Command had lamented the deficiencies of the Sabre. The power of technology was unquestioned but, in isolation or if incomplete, it was not the answer. It was only likely to reach its full potential as part of a balanced whole.

Getting the most from technology was also dependent on indigenous aeronautical engineering and its associated skills. It had been an article of faith in the RAAF since the days of Williams and Wackett that some sort of local aircraft manufacturing capability was an essential element of national air power. The production in Australia of more than 3000 aircraft during World War II both rewarded that faith and established the necessary infrastructure and expertise. Air Marshal Jones' plan for the post-war RAAF urged the retention of sufficient capacity for the most advanced aircraft to be built 'in great quantities', so that Australia would effectively become self-sufficient in that 'vital' aspect of air power.¹⁷⁷ Only through local manufacture could the supply and quality problems from overseas sources which had plagued the RAAF for much of the war be avoided. However, by 1953 the Air Board had decided that modern operational aircraft were so complex and expensive that only the major powers had any hope of achieving genuine self-sufficiency.¹⁷⁸ Australia's best option was to foster essential research and development skills, and the capacity for major repair work, by restricting local industry to the design and construction of selected types. Board members favoured fighters and trainers, as they had been accorded the highest priority in the most recent national strategic assessment.¹⁷⁹

Even that compromise came under review later in the decade when Air Marshal Sir Frederick Scherger took over as CAS. Scherger was something of an iconoclast and was not frightened to seek new solutions to old problems.¹⁸⁰ In this case he was concerned that local construction would not necessarily give the Air Force a reliable technological base the country could afford. At the end of 1959 Scherger raised a number of provocative issues on the future of the Australian aircraft industry in a letter to Prime Minister Menzies.¹⁸¹ He questioned whether Australia really needed an aircraft manufacturing industry and, if so, why. Scherger suggested there was a wasteful overlap of effort under the existing maintenance arrangements, in which work was shared between the RAAF and civilian contractors, inferring that it would be more efficient if one organisation — the RAAF — were to have the sole responsibility and all the resources. He recommended that a committee be appointed to enquire into the matter.¹⁸²

Concurrently, the CAS directed one of his senior engineering staff officers, Group Captain J.W. Black, independently to investigate the future of the local industry. Black reported back two months later.¹⁸³ The central issue, Black stated, was whether Australia genuinely needed and could afford the degree of self-sufficiency an indigenous industry demanded. He pointed out that local manufacturers were substantially dependent upon the RAAF (as opposed to civil aviation) for work, and since 1945 the Air Force had not been able to generate the demand to keep the industry at its existing size. On the contrary, large fluctuations in work loads had led to the loss of skilled staff and confused planning. Black acknowledged the usefulness of the Australian-built Wirraway and Boomerang aircraft during World War II, but noted that even those 'homegrown' types contained a significant percentage of components designed and developed overseas. Since then, the steadily increasing cost and complexity of military aircraft had taken design and development to the stage where Australia's technical and financial resources were no longer adequate. He cited the Commonwealth Aircraft Corporation's experience with the Australian-built Sabre fighter as evidence. Although the Sabre was claimed as another indigenous product, almost one-

third of its program costs had been incurred overseas.¹⁸⁴ In Black's opinion, that was not a result which in a crisis would ensure the local supply of either complete aircraft or spares for servicing. Extending his argument, Black suggested that the proposed production of the far more advanced Lockheed F-104A Starfighter which was currently before Cabinet would have even less local content than the Sabre. Time was to prove Black correct. When the Mirage rather than the F-104 replaced the Sabre and was 'constructed' locally, only 15 per cent of the airframe was manufactured in Australia, while critical components of the engine, radar and weapons systems were imported.¹⁸⁵

Black's final comments addressed the relationship between local design and construction, and technical support (that is the investigation of defects, repair and overhaul, and design and modification work to improve operational performance and safety). Some supporters of the local industry had asserted that, without the knowledge derived from local participation in construction and design work, technical support for advanced aircraft like the F-104 would not be possible. Black refuted that claim, pointing out that the fully imported Neptune aircraft, which was both modern and complex, had been adequately maintained in Australia.¹⁸⁶

Having addressed the main technical aspects of the topic, Black turned to changes in the strategic environment. He suggested that the advent of nuclear weapons had fundamentally altered the demands of local production. Future wars were likely to be short and intense, with six months a probable maximum duration. Consequently, massive equipment production lines would not be necessary, as air forces would fight at the maximum rate possible with existing aircraft. In that (assumed) brief period, aircraft factories could do 'virtually nothing effective'. Black finished his paper by commenting on the RAAF preference for restricting local production to fighters and trainers. It was Air Force policy for bombers, transports and other large types to be purchased overseas and flown to Australia. They had the necessary range; further, they were complex to manufacture and the small numbers the RAAF could afford did not offer economies of scale. Black suggested it was time to consider whether that policy should now be extended to fighters. Fighter performance had improved to the extent where all of the United States Century series aircraft and the Mirage III could be ferried to Australia; while their manufacture — as opposed to assembly — was largely beyond Australia's capacity. Black concluded that the only aircraft type for which a genuine local production need existed was a light trainer.

Part of Scherger's rationale for writing to Menzies and setting Black to work had been to divert resources which he believed were under-utilised from the civilian sector to the RAAF, thus enhancing the Air Force's technological base.¹⁸⁷ Because a decision favouring the RAAF would have cost civilian jobs, the issue had political overtones. Consequently, while Scherger supported Black's report, when he tabled it for discussion at an Air Board and AOCs' conference in Canberra in May 1960, he took a more moderate line, agreeing that the local aircraft industry was of 'definite value' to RAAF and that the 'sustenance' of an indigenous capacity was in the Air Force's best interests.¹⁸⁸ Nevertheless, the Air Board agreed that the comparatively high costs associated with locally built aircraft necessitated a rationalisation of the Australian industry.¹⁸⁹

A decade later the cyclical nature of aircraft production in Australia was still a matter for debate. Throughout the 1960s the local industry, and especially the Commonwealth Aircraft Corporation, had been largely sustained by construction programs for the Mirage fighter and the Macchi trainer.¹⁹⁰ With the workload from those projects falling, Minister for Defence John Gorton invited representatives of CAC to Canberra for discussions in July 1971.¹⁹¹ Gorton was told that in the past four years CAC's workforce had been reduced by about 30 per cent, a figure which would increase to about 40 per cent within the next six months as the company retrenched its 'hard core nucleus of skilled men at all levels'.¹⁹² CAC suggested that Australia's traditional policy of manufacturing foreign-designed aircraft under licence was both economically unsound and a prime cause of the workload fluctuations

which were so damaging to the local industry. The company proposed that in future Australia should seek involvement in projects from the outset on a cooperative basis, sharing in design, development, production and marketing activities. Gorton remained non-committal, although he did mention the problems of scale and costs. He did, however, provide an unambiguous statement on the purpose of the Australian aircraft industry which would have disheartened LJ. Wackett and other pioneering manufacturers of the past. Gorton acknowledged the value of production as a means of sustaining a balance of skills in the industry. However, he then pointed out that the primary purpose of the local industry was to provide *support* for military aircraft, through maintenance and the supply of high-usage spare parts.¹⁹³ His policy realistically defined the limits of technological self-sufficiency.

NUCLEAR DETERRENCE

Just as the Cold War dominated international relations in the period under review, the 'bomb' dominated the Cold War. The possession of nuclear weapons and a suitable delivery system conferred on a country a degree of invulnerability and status, as it seemed that only an irrational state would risk the consequences of attacking a nuclear power. During the 1950s there were three such powers, a figure which rose to five in the 1960s.¹⁹⁴ Others were interested. For a country like Australia which lacked the population to raise a huge standing army to match those of the communist and Asian countries to the north, but which had the economic and technical base to support a small nuclear force, the concept of nuclear deterrence appeared to offer defence cost-effectiveness. Any nation contemplating nuclear forces had to address two major issues. First and most challenging was the political and moral decision regarding the possession and possible use of the ultimate weapon of mass destruction. Second, there was the practical matter of getting the weapons and a delivery system.

The Australian government generally was circumspect about its attitude to acquiring the bomb. In one of the few detailed examinations of Australian attitudes to nuclear power, Ian Bellany concluded that the official position most probably was that reported to Parliament in 1957 by Prime Minister Menzies.¹⁹⁵ Menzies advised the House of Representatives that Australia was not interested in developing an indigenous nuclear capability. The Prime Minister listed three reasons for his decision. First, there was the extreme cost; second, his government perceived advantages in restricting the weapons to the three states which currently had them; and finally, major wars could still be fought if necessary in South East Asia without recourse to nuclear weapons either by regional states or the great powers.¹⁹⁶ It was not made clear whether the rejection of 'developing' an indigenous nuclear capability closed off the option of 'acquiring' the weapons. Legally at least, that option remained open until 23 January 1973, when the newly elected Whitlam administration ratified the Nuclear Non-Proliferation Treaty.

If the governments of the 1950s and 1960s were ambivalent about nuclear weapons, the RAAF was not. Throughout the 1950s Air Force leaders campaigned vigorously for an Australian nuclear force based on the manned bomber. RAAF planners did not want air power constrained by the limits of conventional weapons. Their strategic reviews from the period generally included a 'worst case' assessment, in which it was postulated that neither the United States nor the United Kingdom would be able to come to Australia's assistance in the aftermath of global war. In those circumstances, the RAAF argued, 'the possession of an effective air striking force armed with nuclear weapons could well be essential to our national survival'.¹⁹⁷ The existence of such a force was promoted as the most effective method of ensuring the long-term security of a 'small isolated Australia against the massive manpower of potential enemies in Asia and South East Asia'. Other circumstances which the RAAF believed might justify a nuclear capability were the possible deployment of Soviet

tactical nuclear weapons to China, and the danger of conflict with Indonesia over Netherlands New Guinea.

The RAAF's attempts to acquire a nuclear force were not confined to the pages of in-house strategic assessment documents. From 1956 to 1958 at least, persistent attempts were made through both official and unofficial channels to secure nuclear weapons from the United States and the United Kingdom. In September 1956, Minister for Air Athol Townley wrote to Defence Minister Sir Philip McBride regarding the RAAF's offensive strike capability.¹⁹⁸ Townley advised McBride that although the Air Force's Canberras had recently had their bombing and navigation systems modernised, they remained limited by their small bomb load. If they continued to carry only conventional bombs, a 'very large' number of sorties would be needed to destroy a target. One method of increasing the Canberra's effectiveness, Townley stated, would be to arm it with a 'tactical nuclear weapon'. If the principle of arming the RAAF with nuclear weapons were accepted, Townley continued, then it would be logical also to acquire 'tactical atomic bombs' for the Sabres, which could then be 'gainfully employed' in the ground attack role.

Because it would be many years before Australia would be in a position to build its own nuclear bombs, Townley suggested the government seek an overseas source. He concluded his letter to McBride with the proposal that the Minister for Defence should consider

the desirability of initiating action with a view to the Australian Government requesting the Government of the United States for an agreement to obtain tactical atomic weapons to be held in Australia for use in RAAF Canberra and Sabre aircraft in the event of war.¹⁹⁹

Whether or not McBride took the matter further is unclear. What is clear, though, is that Townley's initiative led nowhere, for a year later the RAAF's new CAS, Air Marshal Scherger, sent the first of a series of personal letters to his RAF counterpart, Sir Dermot Boyle, seeking British assistance. At a United Kingdom chiefs of staff meeting held in London in September 1957, Boyle told his fellow chiefs that he had been asked informally by Scherger what the likely reaction of the British government would be to an official request from Australia to 'purchase some atomic bombs in the kiloton range'.²⁰⁰ Scherger had given Boyle an assurance that if the weapons were provided, they would only be used on the joint approval of both governments. The British chiefs agreed that Scherger's request should be investigated, especially as it might lead to an Australian order for some V-Bombers.

There were two main threads to Scherger's thinking. First, he believed his initiative could make an important contribution to collective security and local defence. As he told Boyle, his hope was that the RAAF would be able to contribute a 'small force' of 12 to 16 nuclear-armed Vulcans to an allied 'deterrent force' in South East Asia.²⁰¹ Second, he clearly wanted the RAAF to stay at the leading edge of air power technology. It is significant that while he was writing to Boyle, Scherger was also changing the syllabus of the RAAF College so that the RAAF's future leaders would be capable of commanding a missile/nuclear air force.

In subsequent correspondence Scherger told Boyle that he had been pressing his case with the politicians, but without luck, a response he attributed to a forthcoming federal election which had made the government reluctant to commit itself.²⁰² There was in fact more to it than that. A briefing paper prepared for Boyle regarding Scherger's request noted a 'domestic disagreement' in Australia in which the RAAF was urging a cautious government to adopt a pro-nuclear policy.²⁰³ Boyle was advised not to become a stalking horse for Scherger in the dispute.

Prime Minister Menzies became aware of Scherger's actions and in April 1958 instructed the CAS that all 'agitation at our end' was to cease until the British provided more information on certain technical aspects of nuclear weapons.²⁰⁴ As the British were unlikely to release that information, Menzies effectively had turned Scherger off. Correspondence was later exchanged between Menzies and British Prime Minister Harold Macmillan on the 'possible

supply of nuclear weapons to Australia'; while an Australian government minister informally sounded out a visiting British official on the likely response of the United Kingdom to a request for 'a token number of free falling kiloton bombs'.²⁰⁵ It is doubtful whether either of those initiatives was serious, given that Menzies had already advised Parliament that his government was not interested in developing its own nuclear capability, and had warned off his CAS.

The RAAF, though, was very serious. It seems clear that Australia's airmen, rather than its politicians, were the most forceful advocates of the doctrine of nuclear deterrence. Despite the government's obvious unwillingness to push the issue with Australia's allies, the ultimate deterrent retained its appeal in air power circles. The RAAF's attitude was summarised in an Air Board minute from the early 1960s:

It has been assessed that limited wars in which Australia might become engaged could involve the use of nuclear weapons. The acquisition of a nuclear capacity by Australian forces would greatly increase their offensive and defensive strength and would also greatly enhance the value of any Australian contribution to operations under collective arrangements. It is, however, the policy of the Government that at present nuclear weapons will not be acquired and that planning for the situations which may face Australia is to proceed on the basis of our forces using conventional weapons. Notwithstanding the present policy, our national survival may, in the last resort, depend upon the possession of nuclear weapons and the means of delivering them against an enemy.²⁰⁶

In July 1967 the Defence Committee assessed that there was no current requirement for an Australian nuclear capability.²⁰⁷ Nevertheless, the committee noted that nuclear weapons might be needed in the future should threat assessments and regional capabilities change. Thus, Australian forces should as far as possible retain the potential to operate with nuclear weapons. For the time being, however, the Defence Force was to concentrate on improving its strength and effectiveness using conventional weapons.

The Air Force's promotion of nuclear deterrence was not confined to the limited readership of classified files. Following his retirement as Chairman of the Chiefs of Staff Committee, Air Chief Marshal Scherger periodically caused minor public furores by speaking out against the government and in favour of the doctrine.²⁰⁸ And in 1975 a group of nine prominent defence commentators, including Air Marshal Sir Alister Murdoch, Air Vice-Marshal I.D. McLachlan and Air Commodore W.H. Garing, formed a private 'think tank' which argued that the acquisition of nuclear weapons was vital to Australia's survival.²⁰⁹

ILLUSORY DETERRENCE

Having failed to get the weapon, the Air Force turned its attention to the delivery platform. If it could at least get the means of delivery, it would be able quickly to take advantage of any change of government policy. Additionally, as both the United States and the United Kingdom kept open their option to use nuclear weapons in South East Asia,²¹⁰ there was always the possibility that, as long as it had a suitable aeroplane, the RAAF could participate. Consequently, and notwithstanding its internal doctrinal debate over the relative merits of fighters and bombers for the defence of Australia, the Air Force poured its energies into acquiring the 'Battleplane' which was the heart of Douhet's 'Independent Air Force'.²¹¹

Eventually those efforts were to see the introduction into the RAAF's inventory of the F-111C bomber. As the F-111C is arguably the most significant military aircraft ever operated by Australia, the force structure deliberations behind its selection are examined in detail below. Before coming to that, however, an important point must be made about the relationship between the RAAF's posture and the psychology of deterrence. Preceding chapters of this book have shown that from the earliest days of the Zeppelin and Gotha raids on London,

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and Trenchard's retaliation raids against German cities, bomber aircraft had been synonymous with 'terror'. Even though analysis has indicated that in some instances 'terror' bombing was not only ineffectual but counter-productive,²¹² people continued to think of air bombardment in apocalyptic terms. In other words, the mere presence in an air force of a reasonable bomber fleet might serve as an effective deterrent. The doctrine of deterrence, with its intensely psychological impact, could rest on an air force's posture as much as its capabilities. There is no doubt that in the RAAF the *idea* of a bomber force was just as potent as the reality. Writing in February 1954 as the RAAF stood on the threshold of its greatest peacetime rearmament program, Air Marshal Sir Donald Hardman stated that it would be a 'tragedy' if Australia did not keep a bomber element, for an air force without bombers 'isn't an air force'.²¹³

Hardman's statement was given doctrinal form 10 years later by Air Marshal Sir Valston Hancock, who in September 1964 told the members of his Service that the RAAF's prime aim was to 'deter aggression'.²¹⁴ At the time the Air Force was in the middle of its re-equipment program, with the Mirage coming into service and the F-111C on order. The CAS stated that even during the changeover period (when extra training, maintenance and logistic demands were likely to reduce the numbers of aircraft and crews available for operations) the RAAF had to 'retain [its] deterrent posture', a result which apparently could be achieved as much by attitude and appearances as hardware and capabilities. Some months after Hancock's statement, Minister for Air Peter Howson took the relationship between 'posture' and deterrence a step further. Howson suggested that a 'deterrence effect' was generated simply by deploying RAAF units to forward locations in South East Asia, a strategy which he claimed demonstrated that 'air power can contain a threat; in point of fact can diminish that threat'.²¹⁵ It was the *presence* of air power, and the psychological threat it presented, which was the basis of the RAAF's 'deterrence'. Howson's theme was developed in a subsequent issue of *RAAF News*, which suggested that the existence of a powerful air striking force within range of a potential enemy could deter aggression without the need to mount a single sortie. 'In that context' *RAAF News* declared, 'the possession by Australia of a powerful F-111A strike force will carry a great deal of meaning'.²¹⁶

If in the period of the Interim Air Force the notion of deterrence had just drifted into the Air Force's terminology through its familiar connotations of the classical theorists, now it was accepted as a natural expression of Australian air power.²¹⁷ The difference was that *posture*, rather than a rational assessment of capabilities, was the over-riding consideration. As long as possible opponents shared that viewpoint then it was, of course, an effective strategy. The fact remained, though, that a handful of platforms — no matter how good — without modern weapons was not a credible deterrent. It was not until the late 1980s that the RAAF began to arm its 'deterrent bombers' with weapons other than World War II-vintage, free-falling (that is, unguided) iron bombs.

THE BATTLEPLANE

It follows from the foregoing that it was the platform — the 'Battleplane' — which was the foundation of the RAAF's doctrine of deterrence. The more apparently formidable the bomber, the more credible the doctrine. Consistent with that notion, the Air Force sought to acquire the best machine available. Reference has already been made to the team led overseas by Air Vice-Marshal Murdoch in 1954 to select new aircraft for the RAAF. As far as a bomber to replace the Canberra was concerned, two main roles were identified. The new aircraft was to act as a deterrent in the Cold War, and provide an offensive force in any fight for air superiority when operating from either Malaya or Australia in a hot war. To satisfy those requirements, it had to be able to fly with the maximum possible bomb load from Singapore to Bangkok or from Darwin to Singapore with, if necessary, nuclear weapons.²¹⁸ Aircraft evaluated were the Avro Vulcan, the Handley Page Victor, the Vickers Valiant and the Boeing B-47. Because it was not intended to place an order until 1956-57, Murdoch's

team recommended deferring a final decision. There was, however, unanimous support for either the Vulcan or the Victor, with the Vulcan preferred if a decision were to be made immediately.²¹⁹ In the event none of those types was ever acquired, a disappointment which Air Marshal Scherger attributed in part to his predecessor's (Air Marshal Sir John McCauley) preference for fighters. According to Scherger, if McCauley had acted on Murdoch's recommendation, the RAAF would have had its V-Bombers by 1959.²²⁰ Instead, it was still relying on what Scherger described as 'the poor old Canberra' as its deterrent force.

Scherger was right as far as the capabilities of the Canberra were concerned. It did not give adequate coverage of Indonesia from any Australian base and had a 'very low' chance of surviving against an aircraft like the MiG-17.²²¹ Even after the Canberras were fitted with improved bomb sights in 1954, average bombing errors were 250 metres for bombs dropped from 44 000 feet and 50 metres for those dropped below 3000 feet.²²² As the RAAF had insufficient aircraft for area bombing, and given the relatively small radius of effect of conventional high-explosive weapons, that was a capability which would not withstand scrutiny. A study completed in 1957 concluded that the number of sorties required to achieve worthwhile results on likely targets would be well outside the capacity of the bomber force.²²³ Nevertheless, while the CAS may not have been happy with that analysis, the *size* of the RAAF's fleet of 48 Canberras was impressive by regional standards. As long as not too much attention focused on the Canberra's inadequacies, the sheer disposition of the fleet was capable of creating a deterrent effect.

Still, a strategy based essentially on bluff is liable to make those dependent on it nervous. By the end of the 1950s, the replacement of the Canberra was being described as a matter of '*paramount importance... [which had to be] accorded absolute priority over all other measures*'.²²⁴ A new strike/reconnaissance aircraft was needed, with a top speed of Mach 2.0 and an operational radius of action of 1200-1500 miles. Although government policy did not permit the use of nuclear weapons, the RAAF believed it should not close the door. The replacement bomber therefore had to be capable of delivering both conventional and nuclear weapons in all weather conditions.²²⁵ In a passage which presaged the development of the 'surgical strike' capability which the USAF was to demonstrate in Vietnam 10 years later, the RAAF specified a need for 'precision' conventional bombing; that is, it wanted air-to-surface guided weapons which would overcome the inherent inaccuracies of the unguided 'dumb' iron bombs which since 1921 had been its main attacking weapon.

Despite growing concern about Indonesia, by the early 1960s the RAAF was still waiting for its battleplane. The Air Board continued to press its claims, arguing that modern aircraft which could strike bases in Indonesia would create a powerful deterrent effect.²²⁶ At one stage fleeting attention was given to the possibility of buying strategic missiles instead of aircraft, a proposal the RAAF dismissed on the grounds of inflexibility and expense.

Assistance for the Air Force case came in the unlikely form of the Leader of the Opposition in Federal Parliament, the Australian Labor Party's Arthur Calwell. In a comment which stirred public opinion, Calwell claimed in January 1963 that the Indonesian Air Force could destroy any Australian city.²²⁷ Events moved quickly from there, culminating in Prime Minister Menzies' decision in June to despatch a mission headed by the CAS, Air Marshal Sir Valston Hancock, to conduct on-the-spot evaluations of possible replacements for the Canberra. Hancock reported to the government in August,²²⁸ and on 22 October an order was placed for two squadrons of F-111s. At the time the F-111 was known as the 'Tactical Fighter Experimental' (TFX) and was still in the developmental stage. There is no doubt that the Menzies government's decision was inspired as much by an imminent election, in which defence was a major issue, as it was by the demands of national security or air power doctrine.²²⁹

Hancock's instructions had been to look for an aircraft which could attack targets by day and night, at considerable distances and in all weather. It also had to be capable of conducting reconnaissance missions using photographic, radar and electronic sensors. Although the new

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bomber would generally employ conventional weapons, the RAAF (and the government) once again kept their options open by stipulating a need for 'the carriage and delivery of special stores'.²³⁰ Among the specific targets considered were Jakarta, which could be reached from Learmonth in north-west Australia; and Kunming in Southern China, using Saigon as a staging base. Details of the Operational Requirements specified for the new strike/reconnaissance aircraft are listed at Figure 5.2.

FIGURE 5.2

SELECTED OPERATIONAL REQUIREMENTS FOR A STRIKE/RECONNAISSANCE AIRCRAFT, 1963

MISSION PROFILE

- Radius of Action: Optimum 1100 nautical miles
Minimum 900 nautical miles
- Speed of Mach 2.0 in level flight at 50,000 feet
- Take-off and climb economically to cruising altitude
- Cruise economically and descend to be at sea level 200 nautical miles from target
- Fly at high subsonic speed to target (500 knots)
- Deliver weapons - allow five minutes loiter time at low level at 90% power
- Escape at low level at high subsonic speed (500 knots) to a point 100 nautical miles from the target
- Climb to cruising altitude and return to overhead base at economical speed

WEAPON LOAD

- Two air-to-surface missiles
- Six 1000 lb high explosive bombs
- Special Stores

ACCURACY OF WEAPON DELIVERY

- 30 feet for missiles in visual conditions (50% CEP)
- 150 feet for HE bombs in visual conditions (50% CEP)
- 1200 feet for special stores in all weather (50% CEP)

Source: APSC, Department of Air, *Report of the Evaluation Team on a Strike/Reconnaissance Aircraft for the Royal Australian Air Force*, Canberra, August 1963.

Five aircraft were examined by Hancock and his team: the Mirage IV, the TSR-2, the F-4C Phantom, the RA-5C Vigilante and the TFX. Hancock concluded that of all the aircraft

evaluated, the TFX was most likely to satisfy the RAAF's needs. However, because of his instructions to recommend an aircraft which could replace the Canberra immediately, he felt compelled to reject the TFX and the other developmental aircraft, the TSR-2. His compromise choice then became the Vigilante.

The CAS's recommendation that the RAAF acquire 36 Vigilantes as the 'quickest and most effective means of providing the RAAF with a strike/reconnaissance force' was approved by Minister for Air David Fairbairn on 24 August 1963.²³¹ From then on, however, political manoeuvring pushed aside Air Force planning. While politically it was imperative for Menzies to order an aircraft which he could tell the public was capable of attacking Jakarta, economically it suited him to delay paying for it. Consequently, the RAAF's professional advice was not sought as Cabinet made a sudden, opportunistic decision to order the TFX.²³² On paper the radical American aircraft satisfied the RAAF's requirements, while the fact that it would not be available for about four years meant payment could be deferred. Menzies was able to justify his decision by quoting Hancock's favourable comments on the TFX, an action which was misleading by omission. As it happens, in 1991 and after almost 20 years in service, the F-111C remains by far the region's most potent strike aircraft, a circumstance attributable partly to its original capabilities, and partly to a continuing modification program which should see it retain its leading edge until its planned retirement date of about 2010. Its ability to conduct all-weather, low-level, high-speed, precision-strike missions without supporting defensive aircraft make it the closest approximation to Douhet's battleplane the RAAF has ever operated. In that context, the fact that it was ordered more to satisfy political ambition than to meet national security needs is yet another of the mordantly humorous ironies which have characterised much of the higher management of Australian air power.

Because delivery of the F-111s was not expected until 1967, Menzies needed another political sop to appease an electorate which wanted modern bombers. He got what he wanted from American Defence Secretary Robert McNamara who, contingent upon Australia ordering the TFX, offered to lend the RAAF 24 Boeing B-47E bombers during the interim period.²³³ McNamara offered very favourable terms: all loan aircraft would be in the 'best condition'; there would be no charge for the use of the basic aircraft; and the B-47s could be returned to the USAF in an 'as is' condition, with no charge for any major overhauls when the RAAF had finished with them.

The B-47 was not a great option, having been considered and rejected by the Murdoch Mission almost a decade before.²³⁴ Nevertheless, the RAAF again reviewed the aircraft's suitability, before confirming that there would be no worthwhile operational advantage in accepting the B-47s. As long as Australia continued to have access to Malaysian bases, a heavier scale of attack could be mounted against Indonesian targets with the existing Canberra force.²³⁵ In the meantime, though, in a highly successful public relations exercise, the USAF sent out three B-47s on a barnstorming tour of Australia only a week before the election that was at the heart of Menzies' air power thinking.

Pending the arrival of the F-111, the RAAF continued to make do with its Canberras. Despite the criticism the aircraft had attracted, No. 2 Squadron subsequently operated with distinction in South Vietnam from April 1967 to June 1971, using its Canberras primarily in the low-level bombing role.²³⁶ Other strike options existed. The first 28 of 116 Mirage fighters which began to enter service in 1964 came fitted with the necessary wiring to deliver French tactical nuclear weapons. That capability was not a consequence of any deliberate RAAF plan, but rather the fact that the necessary 'nuclear' wiring was contained in looms built into the Mirage for other purposes.²³⁷ Still, the potential was there.

In the late 1960s the development of the F-111 was plagued by fatigue problems in the wing carry-through box, the critical structural component for the aircraft's 'swing wing' capability. At the same time, the perceived threat from Indonesia was decreasing. Those factors together prompted suggestions that the order for the F-111s might be cancelled.²³⁸

Consideration was given to equipping the RAAF with a strike/reconnaissance aircraft of lesser capability, such as the F-4 Phantom, the rationale being that the air strike force should concentrate on small 'brushfire' type wars. That prospect alarmed the Air Force, which had already proposed increasing the order for F-111s from 24 aircraft to 54.²³⁹ While accepting the changed strategic outlook, the RAAF argued there was no guarantee that circumstances would not deteriorate just as quickly as they had improved. As the RAAF pointed out, the F-111 had been selected because it could make long-range, all-weather attacks with a substantial bomb load against targets defended by modern weapons. The F-111 would give Australia a 'demonstrable capability to strike targets in Indonesia from Australia ...hopefully to succeed as a deterrent'.²⁴⁰ With the United Kingdom planning to withdraw from east of Suez in 1971 and communist insurgencies apparently prospering in South East Asia, 'a viable and credible deterrent [would be] invaluable'. Notwithstanding the F-111's technical problems, it remained the aircraft the RAAF wanted. Apart from the USAF's B-52 bombers, it was the only available aircraft with the necessary range. As an interim measure, however, the government did lease 24 F-4C Phantoms from 1970 until the F-111s arrived in 1973.²⁴¹

SURGICAL STRIKE

The difficulty of bombing accurately with free-falling bombs was the prime reason for Air Chief Marshal Sir Arthur Harris's World War II tactic of area bombing. Unable to guarantee that his RAF Bomber Command crews could hit pin-point targets, Harris's response was to revert to saturation bombing.²⁴² Efforts to achieve greater precision focused mainly on better aiming systems like the USAF's Norden bomb-sight and improved navigation and targeting techniques, such as those developed by the RAF's Pathfinders, an elite group of aircrew who identified and accurately marked targets for the main bomber force. While those initiatives helped, aerial bombing remained a blunt instrument. Two decades later in Vietnam, the considerable limitations of aerial attack using dumb bombs were still apparent. However, as the raids on the Thanh Hoa Bridge in early 1972 best demonstrated, the advent of air-to-surface guided munitions signified a dramatic change.²⁴³ From then on, in effect, if aircrew could identify a target they could hit it.²⁴⁴ Precision weapons or 'surgical strike' offered the results envisaged by the classical theorists without resort to weapons of mass destruction. They also made feasible decisive and discrete attacks against an enemy's infrastructure rather than, say, a population's morale.

The RAAF had been aware of the potential of 'smart' weapons well before their use by the USAF in Vietnam. In June 1958 Minister for Air F.M. Osborne had approved the expenditure of 4000 pounds to investigate the effectiveness and suitability of air-to-surface guided missiles for the RAAF.²⁴⁵ The Air Force was interested in obtaining a missile which could be launched outside the range of anti-aircraft gun and missile defensive systems, and from an altitude of about 25 000 feet. A form of inertial guidance was envisaged, while a warhead of about 500 lbs of high explosive was required. Missile types considered included the American-built Bullpup, Bulldog and Wagtail.

Air Force strategists believed the F-111's promised all-weather, high-speed, terrain-hugging performance was likely to give it a unique capability to reach targets. However, unless it then dropped a weapon of mass destruction, the inherent limitations of conventional high-explosive bombs would greatly constrain the end result. In that respect the F-111 was no different from any other aircraft. Its effectiveness was entirely dependent on its weapons. Air Marshal Hancock had intended arming the F-111s with, *inter alia*, the Bullpup, an air-to-surface guided missile which had impressed him when he had seen it test fired by the USAF.²⁴⁶ The missile was a vital part of his concept of operations for the RAAF's new bomber, which he envisaged making precision 'rapier-like' strikes against high-value targets. In the event, when the F-111s arrived in Australia in 1973 (after Hancock's retirement) armed only with iron bombs, he was both surprised and deeply disappointed.²⁴⁷



Air Marshal Sir Valston Hancock: 'Rapier-like' strikes. RHS.

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That was in the future. Meanwhile, throughout the 1960s the Air Board continued to investigate the use of smart weapons, not only for its bombers but also its Mirages and the planned Lockheed P3 Orion maritime reconnaissance/strike aircraft. Missiles considered included the television-guided Walleye, the anti-radar Martel AS37, the long-range television-guided Martel AJ168, and the television-guided Maverick AGM-65.²⁴⁸

GOING SOLO

The decisive moment in the end of the Cold War did not come until 1989, with the destruction of the Berlin Wall. Well before then, however, concessions had been made to the shifting patterns of international relations. For the RAAF, 1972 was something of a watershed, as it marked the end of more than two decades of fighting overseas against the spread of communism. No. 2 Squadron's Canberras and No. 9 Squadron's Iroquois had left Vietnam in 1971, while No. 35 Squadron's Caribou, which in 1964 had been first in, were in 1972 last out.

For several years the United States and Great Britain had been sending signals that they no longer would necessarily act as great and powerful friends, that in many circumstances allies would now be expected to fend for themselves. Australia's withdrawal from Vietnam while the Americans were still heavily committed was a sign that the message had been received. Clearly, significant changes in attitudes to national security would be necessary. In particular, borrowed ideas were likely to become devalued currency, if indeed they had ever had genuine worth.

NOTES TO CHAPTER FIVE

1 See Watt, *The Evolution of Australian Foreign Policy*, pp 163-6.

2 AA, CRS A5954, Box 1626. The Defence Committee consisted of Sir Frederick Shedden, Air Marshal Jones, Lieutenant General S.F. Rowell and Vice-Admiral J.A Collins. Background on ANZAM is presented in Millar, *Australia's Defence*, pp 69—76.

3 See Millar, *Australia in Peace and War*, pp 242-9.

4 See Watt, *op. cit.*, pp 117-42 for general details on ANZUS. For a recent review of the treaty, see P. Dorling, *The Origins of the Anzus Treaty: A Reconsideration*, Flinders Politics Monograph No 4, Flinders University, 1989.

5 NATO: the North Atlantic Treaty Organisation, founded in 1949; CENTO: the Central Treaty Organisation, developed in 1955 and based on the Baghdad Pact; and SEATO: the South East Asia Treaty Organisation (also known as the Manila Pact), founded in 1954.

6 AA, CRS A5954, Box 1636.

7 *loc. cit.*

8 See 'Sino-Communist Air Power Becomes Major Threat', in *Aircraft*, July 1952, pp 30,42.

9 AA, CRS A5954, Box 1636.

10 *loc. cit.*

11 AA.CRSA5954, Box 1626.

12 *loc. cit.* qv RHS, Air Board Agendum 11991, 12-9-51.

13 See PRO, Air 8/1459; Air 8/1617; and RHS, Air Board Agendum 12319, 28-4-52.

14 RHS, Air Board Agendum 12503, 28-5-55; and 12685, 31-10-57.

15 RHS, Report by Staff Representatives of CINCPAC and FEAFF (RAF) on Bilateral Air Discussions at Pearl Harbor, 25/30-7-55.

16 Archives and Historical Studies Branch (AHSB), CRS A7941, File M27, 2/1950 and 2/1957.

17 RHS, Air Board Agendum 12423, 3-5-54.

18 *loc. cit.*

19 Air Vice-Marshal J.H. Flemming, Interview, Canberra, 27-8-90.

20 The squadron flew its first missions in Korea on 2 July 1950 escorting US aircraft on bombing and medevac tasks. Odgers, *Across the Parallel*, pp 27-35.

21 O'Neill, *Australia in the Korean War 1950-53, Vol II, Combat Operations*, p 316. qv Odgers, *Across the Parallel, passim*.

- 22 Air Marshal J.W. Newham, Interview, Canberra, 6-9-90; Flemming, Interview, qv O'Neill, op. cit., p407.
- 23 O'Neill, *Australia in the Korean War 1950-53, Vol I, Strategy and Diplomacy*, p 111; O'Neill, *Combat Operations*, p 316. qv McNamara, Interview ; and Flemming, Interview.
- 24 O'Neill, *Strategy and Diplomacy*, pp 149-51.
- 25 O'Neill, *Combat Operations*, pp 357-8. There was some suggestion that with perseverance (e.g. by modifying tactics and trying to limit combat engagements to the Meteor's most favourable performance envelope), the Meteor would have been adequate in the air superiority role. That must be doubtful, as technologically it was a generation behind the MiG-15 and the F-86. qv Jones, *From Private to Air Marshal*, pp 135-6.
- 26 Flemming, Interview.
- 27 O'Neill, *Combat Operations*, pp 407-8.
- 28 Armitage & Mason, *Air Power in the Nuclear Age*, pp 43-4.
- 29 loc. cit.
- 30 Rees, *Korea: The Limited War*, pp 49-50; Stewart (ed.), *Airpower: The Decisive Force in Korea*, pp 28, 283; and Armitage & Mason, op. cit., pp 43-4.
- 31 Momyer, *Air Power in Three Wars*, pp 3-5. qv O'Neill, *Combat Operations*, pp 57-9, 314, 321.
- 32 Stephens & O'Loughlin, *The Decisive Factor: Air Power Doctrine by Air Vice-Marshal H.N. Wrigley*, p 6.
- 33 While No. 35 Squadron had only seven aircraft in South Vietnam, it carried 2.5 per cent of all passengers. For that and other statistics, see 'RAAF Caribous', in *RAF Quarterly*, Summer 1972, pp 133-6; qv Odgers, *Mission Vietnam*.
- 34 See Homer, *SAS: Phantoms of the Jungle*, pp 206, 221, 243, 389. qv McAulay, *The Battle of Long Tan*, pp 82-7.
- 35 William Turley has described the air war as 'a strategy in search of reason': see Turley, *The Second Indochina War*, pp 87-96.
- 36 Kolko, *Vietnam: Anatomy of a War, 1940-1975*, p 190. Kolko describes other problems with the air war on pp 165, 181, 188-92, 358, 365-6.
- 37 See Kohn & Harahan (eds), *Air Interdiction in World War II, Korea and Vietnam*.
- 38 Armitage & Mason, op. cit., pp 111-3; and Kohn & Harahan, op. cit., pp 58-86.
- 39 For a good account of the latter action, see McAulay, op. cit., pp 82-7.
- 40 OAH, 1006789, Linebacker II and Air Power, The 11-Day Air Campaign, June 1973. qv Kissinger, *The White House Years*, pp 1446-61. For a contrary view, see E.H. Tilford, 'Setup: Why and How the US Air Force Lost in Vietnam', in *Armed Forces and Society*, Spring, 1991, pp 327-42.
- 41 APSC, Department of the Air Force, *Control of the Air and US National Security: The Case for the F-22*, 1991, p 4.
- 42 Kohn & Harahan, op. cit., pp 66-8. qv *The Pentagon Papers*, as published by the *New York Times*, New York, 1971, p 408. Momyer, *Air Power in Three Wars*, pp 28-9, describes how in November 1968, against the advice of each of the US Joint Chiefs of Staff, President Johnson ordered a halt to the bombing of North Vietnam. The North Vietnamese immediately began a massive resupply of their forces in the South. Johnson's decision was taken for political reasons, but militarily was a disaster.
- 43 Summers, *On Strategy: A Critical Analysis of the Vietnam War*, esp. pp 63-90.
- 44 M.T. Owens, 'Desert Storm and the Renaissance in Military Doctrine', in *Strategic Review*, Spring 1991, pp 5-6.
- 45 See Frankland, *The Bombing Offensive Against Germany*, pp 108-9; and Maclsaac, *The United States Strategic Bombing Survey*, pp xvi-xviii.
- 46 *The Air Power Manual*, p 24; *Air Power Doctrine*, p 95; *Basic Aerospace Doctrine of the United States Air Force* (1990 draft), pp 2-3, 3-3.
- 47 The conduct of the bombing campaign against the North clearly did not, for example, satisfy the planning criteria stated in USAF AFP 200-17, Principles of Air Targeting, 11-10-78.
- 48 APSC, Department of Defense, *Conduct of the Persian Gulf Conflict: An Interim Report to Congress*, July 1991, pp 1-4/1-5.
- 49 See Kolko, op. cit., pp 188-98, for comment on 'The Strategy of Technology and Firepower'.
- 50 See 'The Tale of Two Bridges', in *Air War— Vietnam*, pp 1-96. The second bridge was the Paul Doumer, against which similar results were achieved.
- 51 Odgers, *The RAAF: An Illustrated History*, p 136. qv George Odgers, 'With the RAAF in Malaya', in *Aircraft*, August 1951, pp 19-20, 40.
- 52 The comment is attributed to a General Clutterbuck, a 'leading authority on counter-insurgency' who served in Malaya during 1956-58. Quoted in Armitage & Mason, op. cit., p 68.

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- 53 The term 'peripheral conflict' is used to describe low-intensity fighting as opposed to widespread conventional warfare. It can include guerilla warfare, insurgencies and civil uprisings.
- 54 For the best account of the siege of Dien Bien Phu, see Fall, *Hell in a Very Small Place*.
- 55 Mark Lorell, 'Air Power in Peripheral Conflict: Lessons from the French Experience', in Vallance (ed.), *Air Power: Collected Essays on Doctrine*, Bracknell, 1990.
- 56 PRO, Air 8/1629.
- 57 loc. cit.
- 58 loc. cit.
- 59 Any air strike or supply drop made within the preceding 28 days and 10 miles of a kill, capture or surrender was counted as having contributed to the success of ground forces. PRO, Air 8/1629.
- 60 The most detailed account of the air campaign in Malaya is presented in RAF, *The Malayan Emergency 1948-1960*.
- 61 CAustin (*Sydney Morning Herald*), in the discussion period following the paper by John McCarthy, 'Air Power as History: Looking Backwards to Looking Forward', in Stephens (ed.), *Smaller But Larger: Conventional Air Power into the 21st Century*, pp 31-2.
- 62 *RAAF News*, June 1986, p i.
- 63 Kim Beazley, *Press Release*, No 175/86, 20-11-86.
- 64 Newham, Interview; and Air Vice-Marshal B.H. Collings, Interview, Canberra, 18-9-90.
- 65 See Evans, *A Fatal Rivalry*, pp 113-22.
- 66 RHS, Air Board Agendum 12567, 31-1-56.
- 67 AA, CRS AA1969/100, 18/1/Air.
- 68 RHS, Air Board Agendum 12749, 19-6-58.
- 69 RHS, Air Board Agendum 12567, 31-1-56.
- 70 loc. cit.
- 71 RHS, Air Board Agendum 12567, 9-10-57. Townley's note was dated 21-9-56.
- 72 McNamara, Interview; Evans, Interview. In 1956 McNamara was a squadron leader and Evans a flight lieutenant.
- 73 RHS, Air Board Agendum 12844, 11-1-61. Emphasis added.
- 74 RHS, Air Board Agendum 13000, 21-6-63.
- 75 Air Commodore R.A. Scott, Interview, Canberra, 21-3-91. Scott played the central role during the development of the RAAF's operational helicopter force during the 1960s. He formed No. 9 Squadron in 1962-65, and was its first commanding officer when it deployed to Vietnam.
- 76 Scott, Interview.
- 77 APSC, Department of Air, *Report of the Evaluation Team on a Strike/Reconnaissance Aircraft for the RAAF* (hereafter The Hancock Report).
- 78 Scott, Interview; and Air Commodore B.I. Lane, Interview, London, 9-11-90.
- 79 Frost, *A History of the Royal Australian Air Force College* (Unpublished Manuscript), pp 3-15/16. Hancock was then the Air Member for Personnel and Hannah the Director-General of Personnel.
- 80 *RAAF News*, June 1968, p 3.
- 81 See McNamara, Interview; Scott, Interview; and Lane, Interview.
- 82 *The Air Power Manual*, pp 35-6.
- 83 *ibid*, pp 32-3.
- 84 *ibid*, pp 35-6.
- 85 For a contemporary view on this, see Wing Commander B.L. Kavanagh, 'One-a-Penny, Two-a-Penny...', in *Defence Force Journal*, No 76, May/June 1989, pp 3-10.
- 86 AWM, AWM 121, DMO&P File 161/A/5, Letter, Wilton to Murdoch, 23-8-65. Wilton sent an information copy of the letter to the Chief of the Defence Force Staff, Air Chief Marshal Scherger. For the background to the proposed increased Australian commitment, see Ian McNeill, 'The Australian Army and the Vietnam War', in Pierce, Grey & Doyle (eds), *Vietnam Days*, pp 33-4.
- 87 AWM, AWM 121, DMO&P File 161/A/5, Letter, Murdoch to Wilton, 18-9-65.
- 88 Scott, Interview.
- 89 Letter, Scott to Minister for Defence K-CBeazley, 28-11-88; Scott, Interview.
- 90 AWM, AWM 121, DMO&P File 161/A/5, Letter, Wilton to Murdoch, 30-9-65. Wilton was referring to the second batch of aircraft, which were bought for army support: see RHS, Air Board Agendum 13000, 21-6-63.
- 91 *RAAF News*, April 1966, p 6.
- 92 RHS, Department of Air Organisation Directives 9/66, 18-4-66; and 11/66, 6-5-66. Emphasis added.
- 93 Scott, Interview, qv Odgers, *Mission Vietnam*, p 26.

- 94 RHS, Commanding Officer's Report, No. 9 Squadron, June 1966. qv Scott, Interview.
- 95 McAulay, op. cit., pp 16-17.
- 96 O'Neill, *Vietnam Task*. O'Neill was a member of No. 5 RAR.
- 97 RHS, Commanding Officer's Report, No. 9 Squadron, June 1966. qv Scott, Interview; and Odgers, *Mission Vietnam*, p 26.
- 98 No. 9 Squadron's problems are mentioned in McAulay, op. cit., pp 16-20, 159-160; Homer, *Australian Higher Command in the Vietnam War*, p 19; and Homer, *SAS: Phantoms of the Jungle*, p 182. That is not to suggest either of those authors presents a biased view; on the contrary, both have praised the RAAF's performance once the early problems were overcome.
- 99 Scott, Interview.
- 100 Air Commodore H.D. Marsh, Letter to Author, 21-5-91. Marsh was Task Force Air Support Officer in Vietnam from April 1967 to October 1967. qv Scott, Interview; and Lane, Interview.
- 101 McNeill, op. cit., pp 34, 57-8.
- 102 RHS, Commanding Officer's Report, No 9 Squadron, November 1966. qv Scott, Letter to Minister for Defence K.C.Beazley, 28-11-88. The US Army lost twice as many helicopters in accidents as it did in combat.
- 103 Scott, Interview.
- 104 DISPREC (Discharged Personnel Records — Air Force), Personal File, Group Captain P.F. Raw.
- 105 Marsh, Letter to Author, 21-5-91.
- 106 RHS, Commanding Officer's Report, No. 9 Squadron, July 1966. McAulay, op. cit., p 18, describes an incident which justified Scott's comment.
- 107 RHS, Commanding Officers' Report, No. 9 Squadron, August 1966. qv McAulay, op. cit., p 17.
- 108 Homer, *Australian Higher Command in the Vietnam War*, p 19.
- 109 RHS, Commanding Officer's Reports, No. 9 Squadron, June to September 1966. Scott denies his unit was ever grounded, a statement supported by Air Commodore Lane. Scott, Interview; Lane, Interview.
- 110 Lane, Interview. A good account of the mission is contained in McAulay, op. cit., pp 82-7.
- 111 McAulay, op. cit., pp 159—60. qv Scott, Interview; Lane, Interview.
- 112 Paul La Forest 'The Battle of Long Tan', *The Canberra Times*, 17-8-91.
- 113 McAulay, op. cit., pp 41, 62, 68-9.
- 114 RHS, Air Board Agendum 12286, 11-12-51.
- 115 RHS, Air Board Agendum 12315, 3-9-52; and 12375, 20-5-53.
- 116 Rayner, op. cit., pp 110-11.
- 117 'Royal Commission Needed', in *Aircraft*, August 1946.
- 118 PRO, Air 8/1661. Menzies' remarks were made to the UK High Commissioner in Australia (Telegram, 5-7-51); and White's in a letter to his UK counterpart, Secretary of State for Air the Rt Hon Arthur Henderson (19-1-51). White resigned from his post as Minister for Air in May 1951 and was appointed High Commissioner in London.
- 119 *ibid*, Telegram, UK High Commissioner to Commonwealth Relations Office, 5-7-51.
- 120 *ibid*, Letters from Slessor to Secretary of State for Air (Henderson), 9-3-51 and 29-6-51. qv PRO, Air 20/9174.
- 121 PRO, Air 20/9174.
- 122 Hardman was described by Slessor as 'the outstanding candidate' for the RAAF post. PRO, Air 20/9174.
- 123 PRO, Air 8/1661.
- 124 RHS, Air Board Agendum 12375, 20-5-53.
- 125 AA, CRS A5954, Box 1509; RHS, Review of the Command Structure of the RAAF, 30-10-52.
- 126 RHS, Air Board Agendum 12375, 27-5-53.
- 127 AA, CRS AA1969/100, Box 183, 3/33/Air.
- 128 APSC, RAF Manual AP 1300, *Operations*. RAAF records do not show when the AP 1300 was adopted, but interviews with retired senior officers indicate that its year of issue (1957) is the most likely.
- 129 RAF Air Historical Branch, RAF, AP 1300, *Operations*.
- 130 Rowland, Interview; McNamara, Interview; Newham, Interview.
- 131 RAF, AP 1300, *Operations*, p 23.
- 132 Rowland, Interview; McNamara, Interview; Newham, Interview.
- 133 Read, Interview; Rowland, Interview; McNamara, Interview. The argument for a balanced air force was also put effectively by Air Vice-Marshal Scherger in an article written when he was DCAS: see 'Strategy of the RAAF in War', in *Aircraft*, April 1951, pp 29, 58.

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- 134 AHSB, CRSA7941.L4, Pt1.
- 135 AA, CRS A5954, Box 2131.
- 136 loc. cit
- 137 RHS, Air Board Agendum 12605,16-8-56.
- 138 RHS, Air Board Agendum 12605, 30-1-58. qv Frost, op. cit., p 4-5.
- 139 'The RAAF College', in *RAF Quarterly*, Vol 5, No 1 January 1953, pp 81-5. Air Vice-Marshal R.E. Frost recalls leaving the college with a 'reasonable' knowledge of air power and the basic philosophies of such classical strategic thinkers as Clausewitz, Douhet and Mitchell. Air Vice-Marshal R.E. Frost, Interview, Canberra, 26-9-90.
- 140 RHS, Unit History, RAAF College, 1961; and RHS, Air Board Agendum 13090, 27-11-64.
- 141 Mr W. Gravell, Interview, Melbourne, 31-10-89. Gravell was Deputy Warden and Acting Warden at the RAAF College and Academy from 1949 to 1976. He also taught the subject 'The History of War', qv Group Captain MJ. Rawlinson, Interview, Point Cook, 1-11-89. Rawlinson was the academy's Senior Lecturer in Defence Studies in 1976-77.
- 142 Air Commodore Ian M. Westmore, Discussion, Canberra, 20-9-90; Rawlinson, Interview.
- 143 RHS, Air Board Submission 10/70, 3-2-70. The exception was the one or two cadets each year who belonged to the academy but completed engineering degrees off campus. See Frost, op. cit., pp 7-7/8.
- 144 See the comments made by the committee which enquired into die possible establishment of a tri-Service academy (which later took form as the Australian Defence Force Academy in Canberra in 1986): RHS, Air Board Submission 17/68, 8-3-68.
- 145 *RAAF News*, July 1968, Article by John A. Sharwood.
- 146 *RAAF News*, September 1968, Article by Professor Maurice Brearley.
- 147 RHS, Air Board Agendum 13090, 27-11-64. The balance in the college/academy course was a topic of continuing debate for the entire life of the institution: see Frost, op. cit., pp 5-4, 5-6, 5-8, 9-2/3, 9-7/8.
- 148 Frost, Interview; Rawlinson, Interview; Schubert, Interview. Rawlinson has compared die education at Point Cook unfavourably with that provided by the Army at Duntroon. In his opinion, the RAAF acted like a 'technocracy' which did not encourage cadets to read, think and write on the social sciences generally or air power specifically.
- 149 See pp 144 above.
- 150 The committee headed by Professor Sir Leslie Martin which enquired into the need for a tri-Service academy criticised the narrow education offered at Point Cook, suggesting it was 'not wholly suited to the needs of the RAAF'. RHS, Air Board Submission 17/68, 8-3-68. ADFA, which replaced the single Service colleges at Point Cook, Duntroon and Jervis Bay, offered degrees in Arts, Science and Engineering.
- 151 The 11-2 *Shturmovik* ground attack aircraft was one of the war's most successful combat machines, with about 35 000 being built. Soviet sources claim it played a decisive role in such critical battles as Kursk and Stalingrad. See Taylor, *Combat Aircraft of the World*, pp 571—4.
- 152 AA, CRS A5954, Box 1842; and CRS A1196, 1/501/693.
- 153 RHS, Air Board Agendum 12353, 30-1-53.
- 154 loc. cit.
- 155 RHS, Air Board Agendum 12425, 3-5-54 and 6-4-55.
- 156 Later Air Marshal Sir Alister Murdoch, CAS from 1-6-65 to 31-12-69.
- 157 Other members of the team were Group Captain B.A. Eaton, Group Captain E.Hey, Mr D.G. Humphries, Mr J. Hanford Stevens, Mr N.W. Hodgson, and Mr I.B. Fleming. See APSC, RAAF, 7954 *Aircraft Mission: Report on Investigations in the United Kingdom and North America*, Parts 1 and 2 (hereafter The Murdoch Report).
- 158 RHS, Air Board Agendum 12511, 1-7-55.
- 159 APSC, The Murdoch Report.
- 160 RHS, Air Board Agendum 12877, 27-9-60.
- 161 APSC, The Hancock Report.
- 162 *RAAF News*, May 1965, p 2.
- 163 RHS, Air Board Agendum 12572, 16-8-57.
- 164 B.Lambeth, 'Trends in Air Power: New Systems, Old Platforms?', in Stephens, *Smaller But Larger*, p 143. The fighters were the F-100 through to the F-106 (there was no F-103).
- 165 From 1953 until 1962-63 (when the US became actively involved in Vietnam and started seeking Australian support), the Australian defence budget as a percentage of GNP was reduced each year. P. Robinson, 'Australia: The New South-East Asian Power', in *RAF Quarterly*, Vol 10, No 2, Summer 1970, p 106.

- 166 For RAF discussion on the Sandys' paper before it was released, see PRO, Air 8/2157. qv T.C.G. James, 'The Impact of the Sandys' Defence Policy on the RAF', in RAF Historical Society, *Proceedings*, Issue No 4, September 1988, pp 9-34.
- 167 AA, CRS AA1969/100, Box 152, 16/1 /10/Air.
- 168 loc. cit.
- 169 RHS, Air Board Agendum 12646, 8-4-57.
- 170 RHS, Air Board Agendum 12772, 5-11-58.
- 171 RHS, Air Board Agendum 12646, 8-4-57.
- 172 The Bloodhound Mk 1 surface-to-air missile system entered RAAF service with No. 30 Squadron in November 1962.
- 173 RHS, Air Board Agendum 12814, 10-7-59.
- 174 RHS, Air Board Submission 10/67, 23-2-67.
- 175 RHS, Air Board Agendum 13073, 27-9-64.
- 176 RHS, Air Board Submission 27/71, 8-4-71.
- 177 AA, CRS A5954, Box 1842.
- 178 RHS, Air Board Agendum 12353, 30-1-53.
- 179 AA, CRS A7938, CAS File 105; NLA, Transcript of Interview with Air Marshal Sir John McCauley, 18-9-73; and RHS, Air Board Agendum 12353, 30-1-53. The intention was to try to sell locally made aircraft overseas, with New Zealand, India, Pakistan, Indonesia and the United States mentioned as possible customers.
- 180 See his biography, Rayner, *Scherger, passim*.
- 181 AA, CRS A7938, CAS File 105.
- 182 loc. cit.
- 183 *ibid*, 15-2-60.
- 184 loc. cit. Australian costs came to 67.5 per cent of the total, overseas costs to 32.5 per cent. The breakdown of local content was: raw materials 53.6 per cent; Finished parts 76.6 per cent; assemblies and sub-assemblies 100 per cent; and proprietary and embodiment loan equipment 4.8 per cent. The latter category represented about half of the total expenditure and a 'very large proportion' of items to be replaced in servicing.
- 185 RHS, Air Board Submission 60/67, 6-10-67.
- 186 AA, CRS A7938, CAS File 105.
- 187 loc. cit.
- 188 RHS, Air Board Agendum 12868, 29-7-60.
- 189 loc. cit. The Air Board favoured CAC as the prime contractor for the production of RAAF aircraft.
- 190 RHS, Air Board Submission 80/71, 13-8-71.
- 191 AA, CRS A7938, CAS File 105.
- 192 loc. cit. At the peak of the Mirage/Macchi program in 1967, CAC had employed 3572 people. By July 1971 that had fallen to 2200 and was forecast to be down to 1900 by February 1972.
- 193 AA, CRS A7938, CAS File 105.
- 194 The first known tests of nuclear weapons in those five countries were: the USA 1945; the USSR 1949; the UK 1952; France 1960; and China 1964.
- 195 Bellamy, *Australia in the Nuclear Age*, pp 81-2.
- 196 *CPD*, 19-9-57, pp 794-801, esp. p 798; qv *CPD*, 4-4-57, pp 571-9.
- 197 RHS, Air Board Agendum 12787, 12-4-59.
- 198 AHSB, CRS A7942, File N78. qv AA, CRS AA1969/100, Box 158, 65/6/Air.
- 199 loc. cit.
- 200 PRO, Air 8/2188. The one kiloton bombs Scherger wanted were categorised as 'tactical': by comparison, the 'strategic' bombs dropped on Hiroshima and Nagasaki were 20 kilotons.
- 201 *ibid*, 2-1-58.
- 202 PRO, Air 8/2188.
- 203 *ibid*, 13-6-58.
- 204 *ibid*, 21-4-58.
- 205 *ibid*, 10-9-58. The latter 'hypothetical' question was brought to Prime Minister Macmillan's attention.
- 206 RHS, Air Board Agendum 12930, 18-10-61.
- 207 DAFP, DGPP File 1282.
- 208 Rayner, *op. cit.*, p 166.
- 209 *The Australian*, 30-6-75. Also in the group were journalist Denis Warner, former CNS Vice-Admiral Sir Alan McNicoll, and Brigadier F.P. Serong.

Chapter Five

- 210 NATAR, RG 218 (US Joint Chiefs of Staff), JCS Geographic Files 1954-56, Box 10, Draft Memo, Chairman JCS to Australian Ambassador, 20-7-55; and PRO, Air 8/2152.
- 211 Douhet, *Command of the Air*, pp 117-120.
- 212 See, for example, John McCarthy, 'Air Power as History: Looking Backwards to Looking Forward', in Stephens, *Smaller But Larger*, pp 23-9.
- 213 Hardman was keen for the RAAF to acquire V-Bombers. See McCarthy, *Defence in Transition*, pp 20-1.
- 214 *RAAF News*, September 1964, p 2. For a similar opinion, see Air Marshal Murdoch, quoted in *RAAF News*, October 1968, p 4.
- 215 *RAAF News*, May 1965, p 1.
- 216 *RAAF News*, September 1966, p 2. The aircraft the RAAF finally acquired was the F-111C, not the 'A'.
- 217 RHS, Air Board Submission 10/67, 23-2-67.
- 218 RHS, Air Board Agendum 12511, 1-7-55. qv APSC, The Murdoch Report, Part 1, p 14. The actual reference to nuclear weapons was to a 'special' bomb.
- 219 APSC, The Murdoch Report, Part 1, p 45.
- 220 PRO, Air 8/2188. During a visit to Europe before assuming the post of CAS in 1954, McCauley had become convinced that the RAAF's first priority had to be an air superiority fighter: NLA, Transcript of Interview with Air Marshal Sir John McCauley, 18-9-73.
- 221 RHS, Air Board Agendum 12814, 10-7-59.
- 222 AA, CRS AA1969/100, Box 158, 65/6/Air; and Evans, Interview.
- 223 AA, CRS AA1969/100, Box 158, 65/6/Air.
- 224 RHS, Air Board Agendum 12814, 10-7-59. Emphasis in original.
- 225 RHS, Air Board Agendum 12787, 12-4-59. qv AA, CRS A7942, CAS File C151.
- 226 RHS, Air Board Agendum 12930, 18-10-61.
- 227 Hanno Weisbrod, 'Australia's Decision to Buy the F-111', in the *Australian Quarterly*, Vol 41, No 2, June 1969, pp 7-27.
- 228 APSC, The Hancock Report.
- 229 See Weisbrod, op. cit., pp 10-11.
- 230 The Hancock Report, p 33.
- 231 RHS, Air Board Agendum 13017, 24-8-63; qv 13033, 19-10-63.
- 232 Weisbrod, op. cit., pp 16-22; qv Hancock, Letter to Author, 11-4-90, pp 7-9. Menzies' largely uninformative account of the affair is presented in Menzies, *The Measure of the Years*, pp 77-80.
- 233 RHS, Air Board Agendum 13033, 19-10-63. At the time the USAF had about 800 B-47s in its inventory, but was planning to phase them out by 1968.
- 234 See The Murdoch Report, Part 1.
- 235 RHS, Air Board Agendum 13034, 24-1-64.
- 236 For a brief account, see Odgers, *The RAAF: An Illustrated History*, pp 166-73.
- 237 Rowland, Interview.
- 238 RHS, Air Board Submission 69/69, 30-5-69.
- 239 RHS, Air Board Submission 10/67, 23-2-67.
- 240 RHS, Air Board Submission 69/69, 30-5-69.
- 241 The RAAF hoped to buy Phantoms in addition to F-111s, to use in the close air support role. RHS, Air Board Agendum 13046, 10-4-64, and Air Board Submission 60/72, 3-8-72.
- 242 See Saward, *Bomber Harris*, esp. pp 176-200.
- 243 Other technologies, such as Head-Up Displays and continuously computed impact point systems, have made the use of free-falling bombs much more accurate: see Benjamin S. Lambeth, 'Future Air Power Developments', in *Ball Air Power...*, p 85. However, those systems do not confer the genuine precision of PGMs.
- 244 During the 1991 Gulf War, about 90 per cent of PGMs hit their targets: see USAF Chief of Staff General Merrill A. McPeak, quoted in *Jane's Defence Weekly*, 6-4-91, p 549. For comment on the concept of precision strike, see Alan Stephens, 'The Case for Surgical Strike Capability' in *Asia-Pacific Defence Reporter*, July 1990, pp 19-20.
- 245 RHS, Air Board Agendum 12732, 11-6-58.
- 246 Hancock, Interview; qv The Hancock Report, p 34. The AGM-12 Bullpup became operational with the USAF in 1959. It was optically guided via a radio link. Its warhead was either HE (250 lbs or 1000 lbs) or nuclear; it had a range of 11-17 kilometres; and a speed of Mach 2.0. *Jane's Weapon Systems* (15th edn), London, 1984-85, p 176.
- 247 Hancock, Interview.
- 248 RHS, Air Board Agendum 13073, 27-9-64; and Air Board Submission 10/67, 23-2-67.

CHAPTER
— Six —



*PLACING THE AIR FORCE ON A
SOUND CONCEPTUAL BASIS
1973-1991*

Australian foreign policy since federation in 1901 has been distinguished by its reactive nature. It should scarcely be surprising, therefore, that the shift towards a more independent international outlook which occurred around the start of the 1970s was driven primarily by a number of external events. In order those were: Britain's decision to withdraw its defence forces from east of Suez (announced in 1967 and to be completed by the early 1970s); the Guam or 'Nixon' Doctrine of 1969-70, which indicated that the allies of the United States would have to assume more responsibility for their own defence; the successful application in 1971 of the United Kingdom to join the European Economic Community; and the defeat of the Western alliance in Indo-China in 1975. Each of those events was an unmistakable signal that the days of always looking to a 'great and powerful friend' for security were, if not numbered, at least being placed more on a user-pays basis.

Coinciding with those pressures was the election of the Whitlam Labor government in November 1972. After 23 years of continuous rule by the comparatively conservative Liberal/Country Party Coalition — its leader for most of that time, R.G. Menzies, once described himself as 'British to [his] boot-heels'¹ — Whitlam's administration was eager to establish its independent, reformist credentials. Among other things, the new government quickly stated its opposition to the war in Vietnam and the existence of ADF garrisons overseas, questioned the presence in Australia of significant American defence installations, and became one of the first Western bloc countries to recognise the PRC.²

A CONCEPT OF OPERATIONS: DEFENDING THE AIR/SEA GAP

An indication of the new government's security outlook was given by Defence Minister Lance Barnard in a major speech to the House of Representatives on 22 August 1973. Barnard fundamentally redefined Australia's strategic circumstances, which he stated were so favourable that Australia was unlikely to come under strategic pressure or military threat for 15 years.³ His assessment was based in part on a report from the Defence Committee, which had advised him that Australia was one of the most secure countries in the world.⁴ Barnard felt sufficiently confident to claim that Australia would no longer consider itself a junior partner' whose defence posture was largely determined by the policies of powerful allies. While alliances and cooperation would be maintained, it was time for Australia to become more self-reliant.

Notwithstanding Barnard's justifiable confidence in Australia's broad strategic circumstances, his emphasis on self-reliance made necessary the preparation of contingency plans for defending the country. In that context, senior ministers responsible for national

security were alarmed to discover that there had never been a government study of the specific requirements for defending continental Australia.⁵ The subject had, of course, been addressed in 1925 by the then Air Commodore Richard Williams, who had proposed a strategy based on defending the air/sea gap with air power, but Williams had been working in an environment hostile to airmen and his plan had been ignored. As far as Prime Minister Whitlam and his colleagues were concerned in 1973, basic questions remained unanswered: how was Australia to be defended?; what capabilities were needed or were no longer necessary?; where should priorities be placed?; was the logistic and infrastructure support adequate?⁶ Barnard ordered a complete review of those and associated questions.

A hierarchy of strategic guidance, defence policy and force structure papers had been prepared within official Defence circles for many years, but the process was uncoordinated and suffered from the failure of defence planners to establish an authoritative link between broad strategic guidance and the specific requirements of the armed forces for force structure planning.⁷ During the days of forward defence that had not been much of a problem, as the imperative had been simply to develop forces which could work easily with British and American units. Now, with the shift to self-reliance, far more was needed. If Australia was not to flounder in a sea of strategic uncertainty, its planners had to bridge the gap between broad strategic guidance and action. A concept of operations for the defence of continental Australia — as opposed to some overseas garrison like Singapore, the Middle East or Malaysia — had to be developed.

From the 1940s, Australia's security planners had produced a series of guidance papers known variously as the *Strategic Basis*, the *Strategic Basis of Australia's Defence Policy*, *Australia's Strategic Analysis and Defence Policy Objectives*, and *Australia's Strategic Outlook*.⁸ Those papers presented guidance on such matters as intelligence and threat assessments, planning concepts, and defence policy objectives and capability requirements.⁹ They were complemented by a document titled *The Environment of Future Australian Military Operations* (EFAMO), which Desmond Ball has described as 'the most valuable piece of Australian strategic documentation from the point of view of force structure planning'.¹⁰ EFAMO was specifically intended to bridge the gap between general assessments of the environment and the particular force structure requirements of the military Services. Produced in 1971, it was allowed to lapse, and did not retain its relevance beyond the 1970s.

Some of the answers Barnard wanted were provided in another series of studies known as the *Defence of Australia*. While the initial such study released in March 1974 was flawed by its reluctance to examine continental defence in detail, it nevertheless raised some valuable concepts.¹¹ The paper also contributed in an oblique way to the preparation several years later of the RAAF's first officially endorsed concept of operations. Responsibility for drafting the original *Defence of Australia* rested primarily with the Assistant Secretary Plans and Policy in the Department of Defence, Mr R.N. Hamilton. Hamilton was assisted by Captain R.D. Gray, RAN, and Group Captain (later Air Vice-Marshal) R.E. Frost.¹² Issues examined by the group included nuclear deterrence, the relevance of offensive action and containment operations, and the significance of Australia's natural defensive barrier, the air/sea gap. Several years later when Frost became involved in the formulation of the RAAF's concept of operations, he was able to draw on his experience from the *Defence of Australia* study.

Despite the number and extent of the various reviews, the overall process was uncoordinated. Defence planning consequently was characterised by several 'quite debilitating inadequacies'.¹³ Two in particular hindered the logical development of the ADF. First, there was no clear concept of how Australia was to be defended. Desmond Ball forcefully highlighted the problems that caused by posing a series of rhetorical questions in 1981.¹⁴ Under what circumstances could Australia rely on the United States? How far did the notion of self-reliance extend? Should Australia rely on a maritime or continental defence strategy (each with distinctively different force structure implications)? Was there a

place for comparatively radical strategies such as nuclear weapons or mass civil resistance? Plainly, planning would continue to flounder until those issues were thoroughly addressed. The second planning 'inadequacy' seems to have been a consequence of the first. In the absence of a coherent 'defence of Australia' strategy, the Department of Defence adopted a force development methodology based on the concept of a 'core force', under which the ADF consisted of a range of 'core' capabilities which could be used as expansion bases if and when a need for more precise capabilities became evident.

An analogy might be drawn between the notion of a core force and the AP 1300's doctrine of a 'balanced' air force, with each representing something of an each-way bet in the face of intellectual uncertainty. However, while in Australia's circumstances the balanced air force was a defensible concept, RAAF planners considered the idea of a core force intellectually derelict.¹⁵ The notion was inimical to rational force structure planning, as its inherent vagueness provided a vehicle for every vested interest in the armed Services to justify its existence on the simple (and, given the philosophy of the core force, entirely reasonable) argument that a particular capability had to be kept extant against the possibility that it might be needed some time in the future. Problems also arose from the assumption that the warning time needed to expand a capability — which for technologically advanced equipment like submarines and aircraft might be in the order of a decade — would be adequate.¹⁶ The debilitating nature of the concept as a planning tool was exposed, presumably unwittingly, by a senior Defence official during a parliamentary inquiry in 1978, when he described the core force as 'almost a null concept...core force is just another pair of portmanteau words which can if necessary be defined accurately, but I think...it is unnecessary to do so'.¹⁷ Air Commodore K. Tongue believes that to some extent the concept was an expedient to justify inaction.¹⁸ Desmond Ball made the same point but expressed it differently; as he drily observed, 'for analytical purposes', a much more precise definition of the concept was needed.¹⁹

That precision was not evident in the defence policy of the Liberal/National government which replaced the Labor Party in 1975.²⁰ The major public statement for the period, the 1976 White Paper tabled by Defence Minister DJ. Killen, acknowledged the need for greater defence self-reliance, but failed to present a coherent strategy for achieving that objective. The best it could offer was the vague observation that Australia needed to maintain a substantial force-in-being which was capable of timely expansion as 'insurance against uncertainty'.²¹

In 1977 Air Commodore R.E. Frost assumed the post of Director-General Operational Requirements for the RAAF, having just returned from a year at the Royal College of Defence Studies (RCDS) in London. While at RCDS Frost had written a thesis on a force structure methodology for Australia. Motivated by, *inter alia*, his experience on the *Defence of Australia* study and his dislike of the core force concept, Frost abridged his RCDS paper and circulated it within the RAAF for discussion.²² At about the same time, other influential RAAF thinkers including Air Commodore S.D. Evans and group captains K. Tongue, W. Connaughton and H.K. Parker were applying themselves to the related question of developing an Air Force concept of operations.²³

It is noteworthy but scarcely surprising that the RAAF's planning started from the enduring determinants of Australia's strategic circumstances identified by Sir Richard Williams half a century previously: geography, population, infrastructure and the economy. Frost's discussion paper brought together several central ideas which those addressing the problem generally accepted. It identified four options for the defence of Australia: deterrence with conventional weapons, pre-emption, attrition and repulsion. After assessing the relative merits of each, Frost concluded that 'repulsion', which rested primarily on defending Australia in the air/sea gap, was the best option.²⁴

The process of developing the 'repulsion' concept helped RAAF planners refine their ideas. In itself, however, the strategy was incomplete, as its essentially defensive posture was contrary to the very essence of classical air power theory, in which the 'inherently offensive' nature of the aircraft was dominant. The missing element was provided by Air Vice-Marshal S.D. Evans. Throughout the 1970s Evans had progressively been the RAAF's Director of Plans, Director-General Plans and Policy, and Chief of Operations, and had been perhaps the most dominant influence on Air Force thinking.²⁵ Like a number of his RAAF contemporaries, Evans was concerned by the policy vacuum into which the ADF had drifted as a result of relying on others for decades, and then being saddled with the intellectually stultifying core force concept. During a trip to Malaysia in an RAAF Orion in July 1977, Evans took the various Air Force planning papers as his in-flight reading, and personally drafted the RAAF's concept of operations.²⁶

While Evans' strategic thinking also focused on the air/sea gap, it did so from a perspective which reflected the full spectrum of air power capabilities. Thus, instead of 'repulsion', Evans proposed a strategy he described as 'anti-lodgment'.²⁷ In his judgment, Australia's meagre defence resources would make it difficult to dislodge an invading force; consequently, the *prevention* of a lodgment had to assume 'superseding importance'.²⁸

The 'prevention' of lodgment was a critical doctrinal distinction. Without that distinction, Evans' concept of operations could have been interpreted, like previous papers, as largely defensive. Exactly where an attempted lodgment would be 'prevented' was, of course, the key. The fact was that the strategy was not one which limited action to one's own beaches or immediate littoral. In the RAAF's opinion, the best strategy was one which deterred aggression, an outlook which demanded the capability to mount offensive strike operations.²⁹ As Air Marshal J.W. Newham argued at a public conference in 1986 during which he outlined the RAAF's strategic thinking, 'defensive action may prevent defeat, but wars can be won only by offensive action'.³⁰ Specifically, under the anti-lodgment strategy, in the first instance an enemy should be defeated in his mounting and staging bases, and failing that, during the transit of the air/sea gap.³¹ The strategy thus reflected the Air Force's continuing belief in deterrence by retaining the right to take the initiative.

The anti-lodgment strategy also flagged the significance of the island chain to the north-west of the continent, as the RAAF believed that any attack against Australia would probably come through those territories. That assessment was not related to any particular country, but rather to the realities of geography. The subsequent endorsement of the strategy by the CAS, Air Marshal N.P. McNamara, meant that for the first time in its history the RAAF had a formally approved plan of action for the defence of Australia.³²

There was a strong relationship between the anti-lodgment strategy and the force structure the Air Force was trying to establish in the late 1970s. If the strategy was to be effective, four capabilities at least were essential. Those were: first, to repel any attempted lodgment, a strike force capable of applying a high concentration of accurately delivered fire power into a relatively small marshalling or landing zone; second, an effective air defence system to protect not only those maritime strike forces, but also any ADF ground forces involved in an associated battle zone; third, transport aircraft to deploy and concentrate forces rapidly in the battle zone; and finally, a modern, wide-area surveillance system which could effectively monitor events in Australia's area of interest.³³

With highly capable aircraft like the F-111, C-130 and P3 already in service and approval granted for a new fighter and Boeing 707 long-range transports, the necessary connection between thought and action had been established. That connection was reinforced when, because of the central importance of surveillance to its concept, the RAAF gave its support to the continued development of the Australian Jindalee long-range over-the-horizon radar (OTHR) and advocated the acquisition of new tactical air defence radars, Airborne Early Warning and Control (AEW&C) aircraft, balloon-borne or 'gap filling' radars for low-level



Air Marshal S.D. Evans: A concept of operations: the 'anti-lodgment' strategy. RHS.

early warning, and a suitable infrastructure, including additional air bases, across the breadth of the continent's north.³⁴ In the Air Staffs judgment, organising air power along those broad lines would give the RAAF an operational capability more suited to Australia's unique geography and circumstances than had ever previously existed.³⁵ Additionally, the proposed deployment of forces and build-up of the infrastructure in the north of the continent would facilitate a far more flexible and effective response to the kinds of low-level threats which were starting to assume prominence in defence planning.

The concept of operations paper was a land-mark in RAAF strategic thinking. Not only was it the first such paper but, with minor amendments, it has also retained its relevance.³⁶ Additionally, higher level defence planning has moved towards the RAAF outlook, although not always from an apparently rational basis. Applying a somewhat obscure logic, in 1980 Prime Minister Malcolm Fraser translated the Soviet invasion of Afghanistan into a threat to Australia. In response to the invasion, Fraser announced plans to strengthen the ADF. As far as the RAAF was concerned, its capacity to conduct surveillance flights in the Indian Ocean region was to be increased, while the strike capabilities of the F-111s and P-3s were to be improved enormously by fitting the aircraft with precision guided munitions.³⁷ Within weeks, Defence Minister Killen also announced the government's intention to acquire an air-to-air refuelling capability for the (yet to be ordered) new fighters, and plans to build a new air base near Derby.³⁸ If Fraser's threat assessment was puzzling, the force developments he authorised were precisely what the RAAF wanted.

A more reasoned methodology was applied in the two most important documents in Australian defence planning during the 1980s, the 1986 *Review of Australia's Defence Capabilities*³⁹ (known as the Dobb Review after its author), and the 1987 White Paper, *The Defence of Australia*,⁴⁰ (which to a large degree was derived from the Dobb Review). Neither document presented any significant original strategic thinking, as each essentially picked up and built on the idea of defending Australia primarily in the air/sea gap to the north and north-west. The significance of the reports lay in their attempt to apply a coherent methodology and rigour not always evident in Australian defence planning. Importantly, of course, the White Paper also represented government policy.

A defence bureaucrat and academic, Paul Dobb, was appointed by Defence Minister K.C. Beazley in 1985 to review Australia's defence capabilities because strategists within the ADF and the Department of Defence had been unable to agree on defence policy.⁴¹ Consciously or otherwise, Dobb's concept of operations for a 'self-reliant' ADF paralleled that of the RAAF's.⁴² Dobb proposed a strategy of 'denial', the key to which was Australian domination of the air/sea gap surrounding the continent through a system of interlocking protective barriers. The RAAF's main contribution to Dobb's essentially defensive strategy would be maritime strike and reconnaissance, air defence and airlift.⁴³ In that respect, Air Marshal Williams was receiving belated, *de facto* recognition 60 years after his similar proposal had foundered on Imperial and inter-Service shoals. Dobb also defined three levels of conflict for 'analytical purposes', primarily to assist with force structure deliberations: low level, escalated low level, and more substantial conflict. None was considered likely in the foreseeable future, but the first two were assessed as the more credible, given existing regional capabilities. Those so-called 'credible contingencies' covered activities ranging from 'low level harassment and raids through to more concentrated conflict, but well below the level of an attempt to lodge substantial forces in Australia'.⁴⁴

Dobb's strategy of denial and his threat assessment created a doctrinal challenge for the RAAF. By emphasising a defensive strategy and low-level contingencies, Dobb raised doubts, at least in some Air Force minds, about the RAAF's *raison d'être*, especially in relation to independent strike operations.⁴⁵ That concern seemed justified. Dobb had questioned the utility of the RAAF's strategic strike and interdiction forces in dealing with the most likely (low-level) threats he perceived, and it was with apparent reluctance that he had recorded his 'inclination' to recommend the retention of the fleet of F-111 bombers.⁴⁶

Successive drafts of Dibb's review had been circulated to each of the Services. It was perhaps surprising, therefore, that the CAS, Air Marshal J.W. Newham, initially responded positively to the published version, stating that its strategic appreciation provided a sound basis upon which to build the RAAF's force structure. Newham expressed his satisfaction with Dibb's 'support for [the] RAAF's concept of operations and [his]...recognition of the vital contribution air power makes in the defence of Australia'.⁴⁷ However, within a month the CAS had shifted his public position and was criticising Dibb's limited 'understanding of the application of air power', which in turn had, in Newham's opinion, led to some 'debatable judgments' on priorities.⁴⁸ In particular, Newham was disturbed by Dibb's attitude towards strategic strike. The CAS reiterated the RAAF's belief that, regardless of the scale of hostilities, it was essential for the ADF to have the option of striking an enemy force at its source.

There were other proposals in the review which were regarded by some RAAF leaders as further evidence of Dibb's inadequate understanding of air power. One of the more obvious was his recommendation that of the three squadrons of F/A-18 fighters which were on order, two should specialise in the air-to-air role and the third in air-to-ground operations.⁴⁹ In Air Marshal S.D. Evans' opinion, that recommendation was indicative of a 'lack of professional military knowledge'.⁵⁰ Drawing on air power doctrine, Evans questioned why Australia would buy what was arguably the best multi-role aircraft in the world and then restrict its use to single roles. As he noted, if that were to happen, the ADF would compromise its capacity to 'concentrate a large force at the critical time and place — the essence of the art of warfare'. Similarly, Air Marshal Newham was unhappy with Dibb's 'over-optimistic' support for the developmental Jindalee over-the-horizon-radar (which the RAAF supported, but not at the possible expense of the AEW&C aircraft which were high on the RAAF's acquisition list), and his suggestion that, in time, the ownership of 'tactical' helicopters might be transferred from the RAAF to the Army.⁵¹

There was also the perennial matter of deterrence. While it had never been well defined in the past by the RAAF, the 'strategy' had for decades been unquestioningly associated with the Air Force's strategic strike force. In an excellent summary of the topic, the Dibb Review acknowledged the usefulness of deterrence as a general defence strategy, but argued that it was insufficiently flexible to serve as Australia's prime planning methodology.⁵² Specifically, Dibb felt that the long-range strike assets which were the priority for a deterrence strategy might not necessarily be those most needed for the more likely low-level contingencies; in other words, the concept could distort the force structure. That was a judgment which appeared not to appreciate the flexibility inherent in air power. The essence of Dibb's paper was his strategy of denial. A 'priority requirement' for the successful prosecution of that strategy, regardless of the level of conflict, was air and naval units with the capacity to destroy enemy forces in the air/sea gap.⁵³ The RAAF assets essential for that task — the F-111, the P-3 and the F/A-18 — were precisely those which would be employed for 'deterrence'; that is, the fear that formally endorsing deterrence might distort the preferred force structure was misplaced, at least as far as air power was concerned.

Nevertheless, Dibb's comments on deterrence were timely, as they encouraged the RAAF for the first time to examine the concept seriously. A review of the theory was included in a monograph on concepts and issues in Australian defence written by the Director-General of Military Studies, Air Commodore N.F. Ashworth, in 1986.⁵⁴ Among other things, Ashworth stressed the distinction between offensive deterrence and defensive deterrence, with the former dependent on the threat of a serious counter blow against an aggressor, and the latter on being able to offer such resistance as to make an attack unacceptably costly. Interestingly, he described defensive deterrence as a strategy of 'denial'. Ashworth later expressed his disappointment at the complete lack of interest shown in his work by the Department of Defence and the three single Services.⁵⁵ About a year later, Wing Commander D.C. Chipman published an article which also examined deterrence in relation

to Australia.⁵⁶ Chipman concluded that Australia was incapable of applying offensive deterrence — which was likely to take the form of a threat either to invade or bomb cities with nuclear weapons — but could embrace defensive deterrence, as its threat of preventing an enemy from achieving his objective was both psychologically credible and practically achievable for the ADF. Chipman's experience during the research for his article was similar to Ashworth's, as he found that a comprehensive review of Australian literature threw little light on the subject.⁵⁷ Still, his article at least drew a response — a letter to the editor from Air Commodore Ashworth.⁵⁸

Chipman had been motivated to write his article partly because of his concern that unless the RAAF articulated a role for its strike force beyond the word 'deterrence', it would continue to be plagued by the kinds of problems evident in the Dibb Review, whose author had found it difficult to envisage a place for strike and interdiction, and especially the F-111s, in his 'credible' contingencies.⁵⁹ The RAAF's Strike/Reconnaissance Group was aware of the doctrinal challenge posed by Dibb and Chipman, and had been working to match concepts with capabilities to resolve the question. In 1991, two senior officers from the group, Air Commodore B.D. Searle and Group Captain P.J. Criss, presented a response. Searle argued that, contrary to Dibb's belief, the F-111s could play an important role in both low-level and escalated low-level contingencies, while still remaining the region's most potent long-range strike force.⁶⁰ His strategy rested on the so-called 'demonstration effect' and was valid against any level of aggression. By the precise use of one or two guided weapons, the RAAF's F-111s were capable of either making a decisive blow against a lesser developed country, or mounting a demonstration raid to deter hostile action. The keys to the success of the strategy were target selection (preferably high value and unlikely to cause unintended casualties), a suitable platform, and PGMs to achieve 'surgical strike' accuracy.⁶¹ Group Captain Criss subsequently applied Searle's concept to the specific case of a small enemy raiding party engaged in low-intensity action in the remote reaches of Australia. Criss told a major conference on air power that once such a raiding party had been detected, the F-111 force had the technology to 'deal with it using a single weapon', a response he inferred would be far more cost effective than the ground operations favoured by the White Paper.⁶²

The Strike/Reconnaissance Group's idea of using surgical strike as a means of more precisely defining the deterrent capabilities of the F-111 built on Air Marshal Sir Valston Hancock's concept from the 1960s of 'rapier like' strikes, and a series of related Air Staff papers.⁶³ As previous sections of this book have argued, as long as the RAAF's aircraft continued to drop free-falling, conventional bombs, the strategy of deterrence was unlikely to survive rational examination. There was now consensus that if the RAAF were to 'deter', its strike force needed a demonstrable level of performance, or at least potential.⁶⁴ The deterrence credibility of a small, non-nuclear air force with limited numbers of strike aircraft also depended on the ability of those assets to overfly targets repeatedly, with a high chance of survival and mission success. In the RAAF's view, modern attack platforms like the F-111 and the F/A-18, fitted with a precision-guidance weapons system and armed with PGMs, would satisfy those criteria.⁶⁵

The Searle/Criss response to the Dibb Review as it affected the F-111s took five years to emerge. In the meantime, the CAS when the review was published in 1986, Air Marshal J.W. Newham, had to deal with the unease it created. Newham reassured his Service that Air Force views on the 'doctrinal differences' between Dibb and the RAAF would be taken into account during preparation of the pending Defence White Paper, of which Dibb's review was the precursor.⁶⁶ That was fair; the White Paper was to be the definitive policy statement. Still, the RAAF's reaction to the Dibb Review raises an intriguing thought. If Dibb's view of the role of offensive air power in the defence of Australia was correct, then the RAAF had some serious work to do on its doctrine. If, on the other hand, Dibb's position was incorrect, as alleged by some RAAF leaders, why was that so? Dibb was one of the most senior and influential defence analysts in the country. It would be reasonable to suggest that if his

knowledge of the essential capabilities of one of the three forms of combat power was inadequate, the RAAF was at least partly to blame, particularly as it had been given the opportunity to comment on the drafts of Dibb's review. If the Air Force did not educate the decision makers about air power, it was unlikely anyone else would.

While the Dibb Review was generally well received, its strategy of denial was strongly criticised as being excessively defensive.⁶⁷ The White Paper tabled by Defence Minister K.C. Beazley in March 1987 made no mention of denial, instead presenting as its centrepiece a strategy of 'defence in depth'.⁶⁸ That strategy was not especially well explained, but might be described as 'denial' plus the option to make long-range offensive strikes. Its resemblance to the RAAF's anti-lodgment concept of operations was obvious. Like denial, defence in depth was predicated on tiers of capabilities which, in the main, gave priority to defeating enemy forces in the air/sea gap. However, unlike denial, it also acknowledged that, while political constraints might inhibit the use of strike forces at lower levels of conflict, those capabilities nevertheless represented a 'useful option' which should be retained.⁶⁹ Consequently, the White Paper approved in principle a major refurbishment of the F-111 fleet, intended to keep the aircraft in service for about another 20 years.

Overall, the White Paper presented a far more positive outlook for the Air Force than had the Dibb Review. In fact, in between receiving Dibb's review and tabling the White Paper, Minister Beazley had stated that air power, 'defined in the broadest sense', could provide the strategic and technological solution which Australia's geography demanded.⁷⁰ Presumably because of that judgment, the White Paper contained other favourable assessments for the RAAF regarding air-to-air refuelling, AEW&C aircraft, modern weapons systems and the northern infrastructure. The 'doctrinal differences' referred to by Air Marshal Newham a year previously seemed to have been resolved.

Yet the doubts persisted. Final approval for the refurbishment of the F-111s was not given for several years after the White Paper was tabled and, according to Air Marshal S.D. Evans, even then the decision was opposed by the Army.⁷¹ Evans' belief that, after 70 years, many Australian defence planners still do not understand, or have not come to terms with, the capabilities of air power, has been confirmed in general terms by Australia's leading strategic scholar, Desmond Ball. According to Ball, the most critical conceptual deficiency in Australian defence planning remains the failure of strategists to develop adequate concepts for the offensive employment of the ADF beyond the air/sea gap.⁷² In making that judgment, Ball recognised the F-111s as the most important force element.

THE LIMITS OF SELF-RELIANCE

The 1987 White Paper represented a more methodical approach to defence planning than many previous efforts. In at least one respect, however, it created a legacy of major policy confusion. The problem was the paper's claim that Australia's defence policy was to become more self-reliant.⁷³ By its nature, 'self-reliance' is a notion which is always likely to be popular. However, exactly what it means was not made especially clear in 1987, nor has it been since. An analogy can be drawn between self-reliance and deterrence. While the intent to implement each of the concepts is a necessary first step, and in itself signifies some sort of security posture, neither deterrence nor self-reliance has genuine credibility if unsupported by resources. Merely stating a policy does not give it substance. For example, as previous sections of this book have argued, Australia's so-called deterrent force of Canberra and F-111 bombers was credible only at the psychological level until the F-111s eventually were armed with suitable weapons.

The White Paper did say that self-reliance was set firmly within the framework of Australia's alliances, and that the term did not mean 'self-sufficiency'.⁷⁴ Those obscure caveats raise disturbing images of the core force concept.⁷⁵ Just as that concept was too vague to serve as

an effective planning methodology, so too casual references to a 'policy' of self-reliance invite imprecise planning, as the broad nature of self-reliance, like that of the core force, encourages the acquisition or retention of unnecessary or unaffordable capabilities. It was not surprising, therefore, that the White Paper left key force structuring questions unanswered. For example, given that the prime aim of the strategy of defence in depth is the defence of the air/sea gap, how self-reliant should the necessary maritime surveillance and strike forces be? At what stage does the support of the 'framework of alliances' become critical? If self-reliance does not mean self-sufficiency, which supplies can Australia afford not to manufacture or stockpile? Without answers to those and similar questions, the policy of self-reliance is likely to lead only to the distortion of the ADF's force structure.

The fundamental problem with the policy has been tacitly acknowledged by several ministers and the CDF, even while they have continued to promote the idea as a cornerstone of Australian defence planning.⁷⁶ A year after tabling the White Paper, its architect, Defence Minister K.C. Beazley, stated that Australia's policy of self-reliance was achievable only with American support.⁷⁷ An equally puzzling definition was provided in a book by the Minister for Foreign Affairs and Trade, Senator Gareth Evans, who stated that the policy 'enables us to defend ourselves from within our own resources', and then a paragraph later admitted that without American support 'Australia would find it difficult to sustain a defence posture quite as self-reliant as we would like it to be'.⁷⁸ As the kind of support Australia needs was listed by Evans as intelligence, technology, resupply and training, his qualification was something of an understatement. There should be no misunderstanding the extent to which the White Paper's strategy of defence in depth depends on the United States. The alliance is essential.

'Self-reliance' was also described in contradictory terms by the CDF, General PC. Gration, in 1991. Addressing a conference of the Royal United Services Institute, General Gration presented a case for the amalgamation of the Australian and New Zealand defence forces.⁷⁹ Gration suggested that, driven by financial constraints and common interests, each country might forgo specific capabilities which would be provided by the other.⁸⁰ He acknowledged that his proposal could impinge on sovereignty, but suggested that the logic was compelling. That may be so, and the proposal may also be Australia's best defence option, but the end result would be far removed from 'self-reliance'. Should amalgamation occur, the decisions on which country assumed responsibility for which capabilities would profoundly affect single Service thinking, joint force structure planning, and the ADF's independent ability to prevent an aggressor attacking Australia from its air and sea approaches.

The fact is that the resource pressures which have forced Australia and New Zealand to consider defence amalgamation have increasingly made most members of the Western alliance largely, if not entirely, dependent on American support for most levels of conflict.⁸¹ Following the Gulf War, the Permanent Under-Secretary of the United Kingdom Ministry of Defence, Sir Michael Quinlan, stated that in the future, even countries as powerful as Britain probably would not be able to meet a threat from a 'heavy malefactor' without the assistance of the United States.⁸² The complexities of developing and maintaining the necessary infrastructure have simply become too great. Quinlan's observation exposes the increasing frailty of the policy of defence self-reliance and thus highlights the importance of rigorous and relevant force structure planning. That is the point for the ADF and the RAAF.

From an Air Force perspective, disturbing signs are already evident, as long-term discontinuities seem to be emerging between Australia's nominal strategy of defence in depth and the ADF's force structure. For example, for many years Australia has spent about half a billion dollars annually maintaining an Army Reserve which in 1990 was described by an authoritative report from the Auditor-General's office as 'significantly deficient', 'inadequate', and in need of 'major review'.⁸³ While a major review published in 1991 announced the government's intention to form a new 'Ready Reserve' numbering about

3200, the conventional reserve was to be maintained at its existing strength and with few operational changes.⁸⁴ Similarly, in 1991, about 5 billion dollars was committed to the acquisition of 10 or so Australian-built Anzac class destroyers, which were to be commissioned with minimal anti-aircraft weapons systems and serve in a Defence Force which cannot afford an aircraft carrier to provide organic air defence.⁸⁵ Experience from the Falklands War and the Gulf War suggests that in most levels of conflict those ships will be extremely vulnerable.⁸⁶ At the same time as those very large sums of money were being spent on strategically questionable forces, equipment deficiencies seriously inhibited the RAAF's ability to defend the air/sea gap, the function described as 'the first aim' of defence self-reliance.⁸⁷

According to the White Paper, the ADF must be able, *inter alia*, to track and target an adversary in its area of direct military interest. As far as tracking is concerned, senior Air Force officers have stated that, until the RAAF acquires AEW&C aircraft, its ability to perform that task will be constrained.⁸⁸ For that reason, Chief of the Air Staff Air Marshal R.G. Funnell in 1990 identified an AEW&C capability as the first equipment priority, not simply for the RAAF, but for the ADF. Yet while the importance of AEW&C aircraft has been continually acknowledged in defence circles from at least 1976,⁸⁹ by 1991 there was still no firm commitment to fund the capability. The second half of the equation, the targeting of adversaries, has also been adversely affected by inadequate resource allocation. It is clear from the Dibb Review and the 1991 *Force Structure Review* that the ADF's stockholdings of the necessary advanced weapons and components — like the Harpoon anti-shiping missile, stand-off strike weapons, air defence missiles and laser guidance kits — are extremely limited,⁹⁰ as is Australia's capability to maintain, let alone manufacture, such items.⁹¹ According to Air Marshal S.D. Evans, the holdings of PGMs for the RAAF are insufficient for even one day of intensive operations.⁹² In the event that resupply from the sole source — the United States — did not eventuate during a conflict, the RAAF's (and indeed the ADF's) ability to defend the air/sea gap against escalated threats would be highly problematical.

The limits of self-reliance have already been acknowledged in that area of perennial concern for the RAAF's leaders, the local aircraft industry. Just as the subject had occupied Williams in the 1920s, Jones in the 1940s and Scherger in the 1960s, so it remained on the agenda in the 1970s and 1980s, as studies into the need for an indigenous capability continued. The main discussion paper for a 1972 review was prepared by the RAAF's Technical Services Branch and endorsed by the Army and Navy.⁹³ That document stated yet again the importance of fostering a local capability, as had similar papers since the RAAF's earliest years. The familiar arguments were raised. Advocates of the local industry presented the case for sustaining design expertise so that modifications and new systems could be developed in Australia for foreign-designed aircraft. Numerous successes of that policy were cited, including the local conversion of 43 Mirage III-O-F aircraft to the more versatile III-O-A version; the design and fitment of armour plating and a nitrogen purging fuel system for the Canberra bombers for their operations in Vietnam; the design of a 'superior' 14 ply tyre for the Mirage; the redesign of the Lincoln aircraft nose section for the maritime reconnaissance role; and the redesign of the lubrication system to the main fuel regulator in the Atar engine.⁹⁴

In addition to that redesign and modification work, the Australian industry had also enjoyed some success in designing and constructing the Winjeel basic trainer in the 1950s and the twin-engined Nomad utility transport in the 1970s. However, those programs involved relatively low costs and technology. For a variety of reasons (not the least of which was mismanagement by the RAAF), an attempt during the 1980s to produce a more advanced indigenous trainer to replace the Winjeel turned into a fiasco.⁹⁵ That experience and the increasing complexity of modern combat aircraft sounded a warning to the notion of a self-reliant industry.

The limits on local production which had been brought to CAC's attention by Defence Minister Gorton in 1971⁹⁶ had in fact been reiterated by one of his successors, DJ. Killen, in 1978, a year before the ill-fated project to replace the Winjeel was announced. Addressing Parliament on the proposed manufacturing arrangements for the Tactical Fighter Force (TFF), Killen had stated that the total local design and production of an advanced strike aircraft was no longer feasible, and that in future the Australian industry would have to concentrate on maintaining, repairing and modifying its military aircraft.⁹⁷ Had he foreseen the outcome of the Winjeel replacement project, Killen might have extended the government's policy to include advanced training aircraft.

Killen's statement, which signified an important change of attitude towards local design and construction, had been developed largely in response to the challenge of the TFF project. In the mid 1970s members of the TFF Office had reached several important conclusions regarding the manufacturing program they were drafting. First, local design was not an option. Second, it had become evident that the basic components of an aircraft — its airframes and engine/s — were going to remain in service for a very long time, much longer than had been the case in the past. Finally, the RAAF was now in the business of acquiring not simply an aircraft, but a weapons system; that is, a much wider spectrum of defence industries could be involved in the program. Consequently, it was decided that priority should be given to the local production of a large number of spare parts to *support* the airframe, engine and systems.⁹⁸ About 50 major technologies in which Australian manufacturers might participate were identified, ranging from actuators for the fly-by-wire control system to the canopy.

Three main objectives were sought from the local industry participation. First, the program had to generate an Australian capacity to design and incorporate changes to whichever fighter was eventually selected; second, spare parts had to be manufactured across a wide range of technologies; and finally, local industry had to be involved in depot level (that is, major) maintenance work, both to support the RAAF and develop and sustain a civilian workforce. A key element of the local production strategy was an offset program, in which Australian skills would be partly supported by manufacturing components of the TFF for export.⁹⁹ The strategy developed for the TFF was endorsed in the 1987 White Paper and was an intelligent compromise given the financial and technological demands involved. At the same time, it again illustrated the extent of the RAAF's dependence on the United States. Despite the impressive contribution made by the local industry to the F/A-18 program, the total Australian content in each aircraft and its systems was about 15 per cent.

The imperatives of resource allocation unquestionably will bear down even more forcibly on RAAF planners over the next 10 years. The force structure detailed in the 1987 White Paper was predicated on funding within the order of 2.6 per cent to 3.0 per cent of GDP.¹⁰⁰ Instead, allocations as a percentage of GDP since 1987 have been 2.5, 2.3, 2.3 and 2.2.¹⁰¹ The result has been a shortfall in the funding considered necessary to establish the proposed force structure of between about 3 billion and 10 billion dollars.¹⁰² While the 1991 *Force Structure Review* stated that the thrust of the White Paper could be maintained through the 1990s by paying for the planned capital expenditures largely through personnel reductions, it also warned that should financial allocations fail to maintain at least zero real growth during the next decade, the strategy of defence in depth could not be realised.¹⁰³ The continuing absence from the force structure of AEW&C aircraft suggests that situation already exists.

A critical test for RAAF planners will come when negotiations start on acquiring the next strike aircraft.¹⁰⁴ The *Force Structure Review* stated that because there is at present no affordable aircraft with the F-111's capabilities in prospect, it is likely that the F-111 and the F/A-18 will be replaced by a single type.¹⁰⁵ Achieving even that compromise is likely to demand innovative thinking, given that the current generation USAF strike aircraft (the F-117A) costs about 74 million dollars per copy, and the next generation fighter is likely to

cost about one hundred million dollars per copy and the bomber one billion dollars.¹⁰⁶ One of the RAF's leading air power analysts, Group Captain A.G.B. Vallance, has suggested that in the not too distant future there will be two kinds of air forces: those which have access to high technology and can afford it, and those which cannot.¹⁰⁷ Exactly how those kinds of resource-related pressures can be resolved will be one of the greatest challenges RAAF leaders have faced since 1921.

MULTI-ROLE AIRCRAFT AND FORCE MULTIPLIERS

One response the RAAF is certain to pursue is that of trying to do more with less. As the following incident from the 1991 Gulf War demonstrated, the prospects for air power achieving that objective appear favourable. During the war, four United States Navy F/A-18s on a bombing mission against an airfield were attacked by two Iraqi MiG-21s. Although loaded with 8000 lbs of bombs, two of the F/A-18s quickly switched from the air-to-ground to the air-to-air mode and shot down both MiGs. They then reverted to the ground attack mode and successfully completed their task.¹⁰⁸ That advocate from the 1930s of 'ubiquity of purpose' as an over-riding maxim of force structure planning, Sir Edward Ellington, could scarcely have asked for more.

By 1979 the combination of the RAAF's concept of operations and the capabilities of modern aircraft had made Ellington's entreaty both necessary and possible. If the demands of the anti-lodgment strategy for both offence and defence were to be met, structuring a force with 'cross role capabilities' had to be the RAAF's priority. Because the numbers of bombers would always be limited, those aircraft would have to be supplemented in the strike role by other force elements, primarily those from the fighter and maritime groups. The aircraft procured for those groups therefore required a good strike capability.¹⁰⁹ Enhancing that capability would also, of course, lend credibility to the RAAF's deterrence posture.

In 1968 the RAAF had started re-equipping its maritime reconnaissance squadrons with the Lockheed P3 Orion. Some years later, in keeping with the policy of acquiring advanced weapons, approval was given to arm the P3s with the highly effective AGM-84 Harpoon anti-shiping missile. That program was completed in 1981. The P3 did not have the high public profile of the F-111, but until the latter type was also cleared to use the Harpoon in May 1988, the Orion was the most potent maritime strike aircraft in the RAAF's inventory, and the weapon system most suited to defending the air/sea gap. The P3 nevertheless remained limited by its performance — it was developed from a civil airliner, the Lockheed Electra — and unsuitability for land strike. If the RAAF was to make the most of the multi-role technologies which emerged strongly in the early 1970s, and the F-111s were to be supplemented in the land strike role, the RAAF would have to look to whichever fighter was eventually selected to replace the Mirage.

The TFF selection was the RAAF's most important acquisition program since the F-111. Before that selection process began, however, the manned aircraft versus missiles debate was raised again, with some consideration being given to defending vital assets with surface-to-air missiles.¹¹⁰ The debate was brief, as the notion that missiles would one day replace aircraft was no longer in vogue. SAMs were considered relatively inflexible and poor value for money, as their comparatively short range and static siting critically reduced their firing envelope. Further, missiles could not incorporate the 'human logic' represented by the manned fighter in a challenging electronic warfare environment. RAAF planners concluded that the defence in depth which could be achieved with improved early warning and control systems and modern manned interceptors offered the best chance of defending Australia's major target systems.

Planning for a fighter to replace the Mirage began formally in 1971 when an Air Staff Requirement for the TFF was drafted. Roles specified were air superiority, interdiction of

combat areas, close air support, and tactical reconnaissance and battlefield surveillance.¹¹¹ Because enemy fighters the TFF might have to face in its primary role were likely to be of the Soviet Fishbed/Fitter/Foxbat category, high performance was essential. A low-level intercept and kill capability against bombers of the Badger and Blinder classes was also mandatory. The proposed weapons fitment included unspecified air-to-ground guided missiles and guided bombs. An interesting omission from the 1971 list of roles was maritime strike. At the time, the RAAF's concept of operations had not been conceived, the F-111s had not been delivered, and the P3s had not been fitted with Harpoon. It was only later in the decade that the concept of using the TFF to supplement the maritime strike forces emerged.

The description 'tactical' fighter was noteworthy. According to the Air Staff, the term came into general use in Western air forces during the 1960s to describe aircraft which could perform a number of roles without modification or addition to the basic machine and its systems.¹¹² Any multi-role capability the RAAF's fighters had possessed in the past had been developed after an aircraft had entered service. For example, the Sabre and Mirage had both been bought primarily for the air superiority role and had subsequently been modified by the RAAF for ground attack. However, improvements in aircraft and weapons systems since then made it possible to include a significant ground attack capability in the initial specifications for an air superiority fighter. In a sense, the TFF was the modern equivalent of the general purpose aircraft of the 1930s, although technical progress had given the concept more force. The project definition study for the TFF accordingly focused on ubiquity of purpose, with the basic issue being that of whether the RAAF should seek a single, multi-role fighter, or two separate aircraft, one of which would be used for air superiority and the other for ground attack. The Air Staff's initial preference was for a multi-role aircraft.

A TFF evaluation team travelled overseas in March 1973 to examine four aircraft types: the French F1/M53 Mirage, the Swedish 37 AU Viggen, and the American P530-5 Cobra and F-15 Eagle. The team's broad objectives were to investigate the operational, technical and industrial aspects of each of the contenders, which had to meet the needs of both the RAAF and the Australian aircraft industry.¹¹³ Team members concluded that only the F-15 met or exceeded the RAAF's requirements in the major areas, with its performance in the primary role of air superiority being clearly better than the others. In the event, none of those four aircraft was selected, although the P530's aerodynamic shape and engine were subsequently incorporated in the Northrop YF-17, from which in turn the eventual winner, the F/A-18 Hornet, was developed.

One of the more interesting comments in the team's 100-page report came in a postscript added by the leader, Air Vice-Marshal F.S. Robey. Robey noted that if it was necessary to place an immediate order to meet a 'real air combat threat situation', the only logical choice would be the F-15, as second best would simply not be good enough, especially for a small air force.¹¹⁴ However, as Robey pointed out, the RAAF was not in that situation, and there was no pressing operational need to replace the Mirage. Despite his preference for the F-15, Robey noted that the final cost of the aircraft was still unclear. He therefore recommended deferring the selection for two years as that would not compromise national security and might help avoid a situation 'reminiscent of the F-111 experience'. Robey's recommendation was accepted.

Four years later there were still doubts whether the RAAF should opt for a one or two aircraft solution. After another evaluation of contenders the Tactical Fighter Project Office again recommended that additional studies were necessary before a selection could be made.¹¹⁵ In the time since Robey's report was written, the McDonnell Douglas F-18A (later the F/A-18) had entered calculations, but it was not sufficiently developed for the office confidently to accept the manufacturer's performance claims. However, the attraction of ubiquity of purpose remained strong. The Project Office noted that of all the aircraft it had evaluated, the F-18A came closest to being an effective multi-role machine, scoring highly in the air-to-

air role and very highly in the air-to-surface role. With the RAAF's concept of operations taking shape, the latter role had now assumed increased significance. Defence Minister D J. Killen advised Parliament that the TFF would be expected to supplement existing aircraft in carrying out interdiction, anti-shipping, tactical reconnaissance and close air support missions.¹¹⁶

At the time Killen made his statement, the RAAF had revised its list of contenders to the F-15, F-16, F-18A, F-18L, the Tornado and Mirage 2000. Later that was refined to the F-16 and F/A-18. Inevitably there were disagreements. The director of the project during 1977, fighter pilot Air Vice-Marshal J.H. Flemming, had pressed strongly for the aircraft with the best air-to-air performance, the F-15.¹¹⁷ However, supported by the Chief of the Air Staff, Air Marshal N.P. McNamara, and Air Vice-Marshal S.D. Evans — who were described by Flemming as part of a 'bomber' lobby— the F/A-18 was finally chosen, with the announcement being made in October 1981. The over-riding factor in that choice was the F/A-18's exceptional flexibility and versatility.¹¹⁸ McNamara has since stated that the selection of the F/A-18 should mark only the beginning of the impact of genuine multi-role aircraft on Australian air power; in his opinion, the future of the RAAF lies in the further development and application of the concept.

The application of the concept is in fact already evident in other RAAF aircraft. For example, reference has been made to the formidable maritime strike capability conferred on the P3 Orions through the fitment of the Harpoon missile. When the first P3s arrived in Australia, their anti-surface attack role was restricted to lightly armed surface vessels and patrol boats. The addition of Harpoon extended that role to major surface combatants.¹¹⁹ Even greater versatility has been developed with the F-111. Ordered almost 30 years ago as a long-range strategic strike aircraft, the F-111 can now, if necessary, go on alert in a low-level contingency armed typically with two 500 lb laser-guided bombs, two Harpoon missiles, and two Sidewinder air-to-air missiles. As the Commander of the RAAF's Strike/Reconnaissance Group, Air Commodore B.D. Searle, has stated, that configuration would allow a single aircraft to respond to land, sea and benign air threats during one mission.¹²⁰

Those examples represent only the early phase of multi-role systems. Far more radical developments appear probable, as the USAF's experience with the C-130 Hercules indicates. For the past 35 years the C-130 has been the West's most popular, and best, general purpose transport aircraft. Its transformation into the potent AC-130 gunship, complete with air-to-ground missiles,¹²¹ suggests that air power strategists and aircraft designers are only just starting to explore the possibilities of matching ostensibly limited platforms with advanced weapons systems. Should intense budgetary pressures bear down on the ADF, it is not inconceivable that in about 20 years the RAAF could consist of only two operational aircraft types: an F/A-18/F-111 replacement for control of the air, strike/interdiction, reconnaissance and close air support; and a C-130 type for patrol and reconnaissance, AAR, AEW&C, airlift and limited gunship duties.

The emergence of multi-role aircraft as a major factor in air power thinking has been paralleled by the development of other 'force multipliers'. Air Vice-Marshal R.A. Mason has suggested that while Lord Trenchard would not have recognised the term 'force multiplier', he was familiar with the concept: 'to expand the effectiveness of man and machine without increasing the numbers of either; in that way lies economy'.¹²² Multi-role aircraft are one force multiplier. Others listed by Mason include air-to-air refuelling; PGMs; airborne early warning aircraft; wide-bodied aircraft; real time, secure, data link communications; and maintenance practices which produce a high percentage of serviceable aircraft.¹²³ RAAF thinking has comprehended the significance of the concept. PGMs were first sought in 1958; air-to-air refuelling since at least 1976;¹²⁴ and early warning and control aircraft since at least 1978.¹²⁵ Several former chiefs of the air staff have stated that high serviceability rates are the best force multiplier of all, while some have extended that notion to include highly trained and motivated personnel.¹²⁶ The RAAF's positive attitude towards multi-role aircraft and

force multipliers has placed it at the forefront of contemporary air power thinking, as similar sentiments have been expressed by leading Soviet, British and American airmen.¹²⁷

Two final observations on force multiplication are worth making. First, as the quote from Trenchard illustrates, there is nothing new about the idea. It is one more example of the recurring theme in air power doctrine of technology finally catching up with ideas. The second observation also addresses a recurring theme, namely the connection between doctrine and politics. In this case, air-to-air refuelling provides the setting.

The question of distance is ever constant in Australian defence planning. Consequently, air-to-air refuelling (AAR) has enormous implications for operational concepts. Once Boeing 707 transport aircraft entered the RAAF inventory in 1979, it was inevitable that the RAAF would want to apply the principle of force multiplication by modifying them for AAR. Air Force strategists believed that the increased range its strike aircraft would gain from AAR would substantially strengthen the ADF's deterrence posture. Additionally, the flexibility it conferred would make it far more difficult for an opponent to predict the RAAF's disposition and reaction capabilities.¹²⁸ The argument appeared compelling. Yet when the RAAF's first modified Boeing 707 tanker finally appeared in April 1991, it could only refuel the F/A-18. Australia's best strike weapon, the F-111, had been ignored. Describing the Air Force's struggle to get in-flight refuelling as 'one of the unsung sagas of post-war defence planning', journalist Frank Cranston suggested that the F-111s had been excluded for political reasons.¹²⁹ According to Cranston, it was feared in some quarters that the extra 'reach' the F-111 fleet would get from AAR might make others in the region perceive the RAAF as 'aggressive'. Cranston's statement that AAR had been supported by all of the Service chiefs for some years implied that if there were in fact resistance, it had come from political and/or Defence bureaucrat sources. The incident is informative not in any judgmental sense, but rather as a practical illustration of the possible politics of doctrine.

REORGANISING FOR CHANGE

The kinds of pressures detailed in preceding sections of this chapter inevitably led to changes in the RAAF's organisation and personnel management practices. New challenges demanded new arrangements and skills. Throughout the 1980s the organisational changes which were made not only reflected shifts in Air Force and ADF thinking, but also seemed likely themselves to generate significant shifts in attitudes in the future. Several of the new initiatives promised nothing less than a dramatic culture change in the RAAF's intellectual process.

As part of a wider restructuring of ADF command arrangements in 1985-86, the single Service operational commands (Maritime, Field Force and Operational Commands) were abolished and replaced by three 'environmental' joint force commands, a change intended to facilitate joint operations. Under the old arrangements, the RAAF's AOC Operational Command had been responsible solely to the CAS. With Operational Command Tenamed Air Command and the AOC known as the Air Commander Australia, his line of responsibility was divided. Now, the Air Commander was directly responsible to the CDF for the planning and conduct of air operations, and the provision of combat-ready forces, while he remained responsible to the CAS for the supervision, coordination and collective training of RAAF combat forces. CAS, on the other hand, was responsible for providing the Air Commander with the necessary administrative and logistic support.

With its clear division of operational and administrative functions, the new system carried overtones of the organisation which facilitated the notorious Jones/Bostock dispute during World War II. This time, however, the superior officer to the CAS and the Air Commander — CDF — was an Australian, not an American (MacArthur and Kenney), and CAS held a higher rank than the Air Commander. Still, the arrangement appeared untidy in theory at

least. While the CAS retained his authority and political status through his place as head of his Service and a member of the chiefs of staff committee, he (together with the CGS and CNS) had been excluded from the immediate operational level decision-making process.

The transformation of Operational Command into Air Command had been carried out at the direction of HQADF. By contrast, it was an Air Force initiative to reorganise Air Commands' combat groups in 1987, with the objective of improving command responsiveness, flexibility and expertise.¹³⁰ Problems with the way in which RAAF units were grouped had been identified 10 years previously by an Organisation Review Committee headed by Air Vice-Marshal N.P. McNamara, who had described some of the command and control arrangements as light weight and *ad hoc*, a description still considered applicable by some senior commanders in 1986. Under the old arrangements the senior officer at a base was responsible not only for, say, transport or fighter operations, but also a host of 'important but peripheral tasks' like logistics, catering and accommodation. The intention was to divest the commanders of those peripheral tasks and allow them to concentrate on the practical and intellectual aspects of operating aircraft. The CAS, Air Marshal Funnell, identified as one of the essential outcomes of the reorganisation the development of better operational and tactical level doctrine.¹³¹

A trial reorganisation was implemented in February 1987, substantially by rearranging existing resources, and involved the formation of groups and wings and the functional alignment of units within wings. Groups were formed as follows: Tactical Fighter Group; Maritime Patrol Group; Strike/Reconnaissance Group; Air Lift Group; and Tactical Transport Group.¹³² The group structure had two main features. First, it placed like role elements under the one commander. Second, it made the group commander the principal staff officer to the Air Commander for the particular force element, removing layers of headquarters staff. Thus, the group commanders in theory at least had to operate on a 'broader and higher policy [doctrine] plane' than had previously been the case.¹³³ The trial reorganisation was approved and formalised on 1 June 1988.

With Operational Command now Air Command and the new groups in place, attention almost inevitably turned to the RAAF's other functional command. Support Command had been formed in 1959 by the amalgamation of Training and Maintenance Commands. In keeping with the classic bureaucratic tradition of reinventing the wheel, a Training Study Group headed by an air commodore had been formed in January 1972 to examine the merits of removing the training function from Support Command and creating a separate Training Command.¹³⁴ Issues considered by the study group were the scope and importance of the training function, the control and coordination of training between the commands, the division between basic and post-graduate training, and the desired balance between training and operational establishments. The group found no evidence that the RAAF's training function would be conducted more effectively if a separate command were re-established.¹³⁵ Their recommendation to retain the *status quo* was accepted by the Air Board.

That recommendation was overturned in 1989 as part of an ADF-wide drive for more effective command and planning, and greater efficiency.¹³⁶ A feature of that initiative was the devolution of selected responsibilities from Defence Headquarters in Canberra to a number of regional centres.¹³⁷ In the RAAF's case, that included reorganising the supply and engineering staffs at Air Force Office and transferring some of their functions to Headquarters Support Command, a decision which in turn made it logical to divide Support Command into two separate commands, Logistics Command and Training Command. That reorganisation took effect on 1 November 1989. The Air Force thus had reverted to the original functional command arrangements instituted by Sir Donald Hardman in 1953. Also as part of the 1989 reorganisation, the Executive component at Air Force Office was rationalised and reduced to the Office of the CAS and three divisions: Deputy Chief of the Air Staff, Personnel and Materiel.¹³⁸ DCAS Division supports current and future RAAF

FIGURE 6.1

THE RAAF STRATEGIC PLAN, 1991

THE RAAF MISSION

To conduct effective strategic and tactical air operations as an independent, joint or combined force in the pursuit of Australia's defence and national interests

RAAF OBJECTIVES

- Preparedness
- Operational Excellence
- Improved Productivity
- Personnel Development
- Improved Community Relations
- Improved International Defence Relations

RAAF VALUES

- Competence
- Dedication
- Team-work
- Respect for People

Source: RAAF, *Towards 2010: The RAAF Strategic Plan 1991*, February 1991, pp 1-7.

requirements, determines priorities and monitors policy, programs and resources; while the functions of the latter two divisions are self-evident.

While those institutionally important changes were in train, Air Marshal Funnell made an interesting observation regarding attitudes in the ADF. The CAS noted that the 1980s had been a decade of rapid and irrevocable change. He did not believe that was a transitory phenomenon; on the contrary, in his opinion, change had become the norm and was likely to be the *sine qua non* of a successful organisation.¹³⁹ That raised a considerable challenge, as in Funnell's judgment military organisations and personnel often found it difficult to accept change. Against that background, the reorganisation of Air Force Office, the functional commands and the combat groups was accompanied by the introduction of new personnel management practices which promised to have far-reaching effects on Air Force attitudes. Two in particular which could be described as radical deserve mention.

The first was the introduction in the late 1980s of a management system known as 'RAAFQ' — RAAF Quality — designed actively to involve every member of the Air Force in the continuing improvement of the organisation's efficiency and effectiveness.¹⁴⁰ RAAFQ is

described as both a philosophy and set of guiding principles, which seeks more effective outcomes through process involvement. An individual's involvement with the program starts during initial training and continues throughout his or her career. At the risk of simplification, RAAFQ is a means of encouraging excellence at every level of service delivery. Most significantly, it formalises the involvement of every member in analysing, challenging and changing the organisation's work practices and, consequently, its decision-making outcomes. That might be considered a radical, even revolutionary, step in a military organisation. By the same token, it seems probable that RAAFQ will eventually promote (presumably beneficial) substantial changes to Air Force attitudes. The program has already been credited with generating significant productivity increases in some units.¹⁴¹

The second initiative encouraging a much wider involvement of individuals in shaping RAAF ideas was the preparation and distribution in 1991 of a strategic plan.¹⁴² Sent to all officers and warrant officers, the booklet titled *Towards 2010: The RAAF Strategic Plan 1991* was the first such publication in the Air Force's history. It provided the RAAF's managers with a detailed summary of their Service's mission, objectives, values, organisation and plans, as a means of helping them anticipate and deal with change (see Figure 6.1). All recipients of the booklet were urged by the CAS to study and discuss its contents.¹⁴³

SWIFT INTUITION: THE RULING CLASS

RAAFQ and the strategic plan were directed at the Air Force in general. Consequently, the intellectual benefits which might reasonably be expected to flow on from those initiatives should not come from any one specialist group. That is as it should be. Nevertheless, any major shift in attitudes will have to be led by the small group which traditionally dominates air forces, the pilots. No examination of RAAF attitudes would be complete without comment on the intellectual role played by its ruling class.

From its formation in 1921, the RAAF's senior executive — the Chief of the Air Staff — has always been a pilot,¹⁴⁴ a practice established by the RAF's first CAS, Sir Hugh Trenchard. It is a practice which, in the RAAF, was given legal status from 1927 to 1976 through Air Force Regulation 25. No exceptions were made. Air Marshal J.A. Rowland, for example, was one of the RAAF's most notable pilots when he was selected as CAS in 1975, with a distinguished wartime and test-flying career to his credit. However, since 1947 Rowland had been a member of the Engineering Branch, and so had to transfer to the General Duties (that is, the aircrew) Branch before assuming the RAAF's top job. Although the legal requirement for the CAS to be a pilot was repealed by the Defence Reorganisation Act of 1975 (which took effect in February 1976), each of the four chiefs since then has held the qualification.

During the life of the RAAF College/Academy from 1948 to 1985, the overwhelming majority of those who entered to be trained as the Air Force's future leaders were expected to graduate as pilots, a situation which changed only with the establishment of the tri-Service Australian Defence Force Academy in 1986. Until the appointments in 1990 of Air Vice-Marshal W. Collins as AOC Logistics Command and Air Commodore K.R. Blakers as AOC Training Command, no officer other than a pilot had ever headed one of the RAAF's senior commands.¹⁴⁵ Operational groups and squadrons almost invariably have been commanded by pilots, although in the late 1980s there was a slight trend away from that, with navigators being appointed to lead the maritime patrol wing and several operational flying squadrons.

Placing the control of the RAAF almost solely in the hands of pilots has severely limited the organisation's intellectual base. In September 1991 the Permanent Air Force officer establishment of 3518 included 754 pilots; that is, about 80 per cent of the RAAF's managers were to some extent excluded from the organisation's central decision-making network. That discrimination can be partly justified. It is difficult to argue against the domination of pilots and, to a lesser degree, other categories of the General Duties Branch,¹⁴⁶ at the working level

of RAAF operations. Air forces are fundamentally different from armies and navies as their warrior class is restricted to a very small group, namely, those who fly.¹⁴⁷ Combat and operational experience is almost exclusively the preserve of that small group, and military forces do exist to fight wars. Nevertheless, the question which must be answered is whether the extension of the operational-level domination through to most other activities has served the RAAF well.

Evidence has emerged throughout this book that at the practical level of fighting and operational training, the RAAF has been an organisation of the highest quality. Equally, however, numerous instances have been cited of serious intellectual failings at the higher strategic and political levels at critical times in the RAAF's history. Examples are the inability of Jones and Bostock to develop a strategic doctrine during World War II, the missed opportunities for senior command experience in World War II and Korea, the politically inept and doctrinally unsound attitude towards army support flying during the 1950s and 1960s, No. 9 Squadron's problems in Vietnam in mid 1966, and the complete absence of officially endorsed Australian air power doctrine from 1921 to 1990.

With the notable exceptions of Air Marshals S.D. Evans and R.G. Funnell, none of Australia's senior airmen has made a major written contribution to the air power debate.¹⁴⁸ When Group Captain D J. Schubert and Wing Commander P.J. Criss published a book on Australian air power in 1990, they were the first aircrew members of the Permanent Air Force to do so for over 50 years.¹⁴⁹ It seems no coincidence but rather startling that their predecessor was the RAAF's *first* notable air power chronicler, Air Vice-Marshal H.N. Wrigley, who in 1935 published a book on No. 3 Squadron's experiences during the Great War.¹⁵⁰ Sir Richard Williams' autobiography is a major contribution to RAAF history, especially the politics of the inter-war years, but one looks in vain for comment on doctrine and strategy.¹⁵¹ Similarly, the autobiographies of Sir George Jones and Sir Valston Hancock, while valuable additions to a slim collection, give little indication of their authors' doctrinal thinking.¹⁵² Since the *Defence Force Journal* was introduced as the journal of the Australian profession of arms in November 1976, only 15 of the 626 published articles have dealt with air power strategy, doctrine or tactics, and of those 15 articles, only one was written by an air rank officer.¹⁵³

The line explored above might be considered unfair — chiefs of the air staff and their senior colleagues are, after all, appointed in the first instance to run air forces, not write books and journal articles. It is also the case that military officers record their ideas, policies and plans in official documents which generally are not open to the public. Thus, the reports on the aircraft procurement missions led by Air Marshals Murdoch and Hancock which have been cited in this book are excellent indicators of the professional outlook and thinking of those two important RAAF figures¹⁵⁴ but because they were highly classified for over 25 years, the quality of the attitudes they represent has not been widely appreciated.

It is, of course, that latter observation which is at the heart of the matter. To return to the very first point made in this book, an organisation can only be as good as its ideas, which themselves must be formalised, codified and widely understood. Nowhere has the importance of that process, as it affects the RAAF, been better expressed than in a report on ADF command arrangements prepared in 1987 by an Army officer, Brigadier J.S. Baker.¹⁵⁵ Baker's brief did not call for him specifically to comment on air power doctrine. However, in addressing the question of the command of air assets in joint operations, he found it necessary to introduce an historical perspective. It was the advent of air power, Baker stated, which was the greatest complicating factor in present-day ADF command arrangements, as it was air alone which had given rise to the 'inexorable trend towards joint operations'.¹⁵⁶ Unfortunately, however, in Baker's judgment, the proper use of air power in contemporary conflict was not well understood. In a telling passage, Baker sheeted home the blame for that failing on past generations of air force leaders:

In part Air Forces are themselves to blame for any dearth of understanding. There are few scholars adding to the strategic debate; there is little written doctrine...It is the growing recognition of the central importance of air which fuels the discussions of ownership of assets. The only long-term remedy is for [the RAAF] to provide exemplary support in all its forms; to itself understand the importance of its contribution to success in all forms of operations. Of any of the Services, it is Air Force which requires the greatest body of corporate knowledge of all forms of operations on land, sea or in the air. *In turn it must educate others in the effective use of air assets.*¹⁵⁷

At one and the same time, Baker had presented with admirable clarity and brevity the justification for the RAAF's independent existence, while identifying the essential cause of its continuing identity crisis. Quite simply, its ruling class had failed to develop and promote an Australian air power doctrine.

The findings of a survey into RAAF air power education commissioned by Air Marshal Funnell in 1989 confirmed Brigadier Baker's assessment of the RAAF's strategic scholarship.¹⁵⁸ Conducted by Air Commodore I.M. Westmore, the survey stands as an indictment of generations of RAAF pilots. Westmore advised the CAS that, to the extent that air power doctrine was taught to officers in the RAAF, it was *ad hoc*, largely superficial, and unrelated to career progression, endorsed doctrine or common references. No attempt had been made to educate enlisted ranks. The RAAF's failure to educate its people in their organisation's *raison d'etre* was believed to be largely responsible for friction between rank levels and employment categories, while at the higher levels of Service politics it was assessed as a prime cause of the Air Force's (perceived) inability to influence its destiny. In his central conclusion, Westmore stated that the 'malaise' within the RAAF was 'universally' attributed to the lack of an air power education system.¹⁵⁹ In summary, over the past 20 years at least, RAAF air power education had been largely ineffective. No amount of compelling classified reports locked away in safes, or manifest technical competence, could compensate for that fundamental intellectual failure. If the basics of air power were not taught or studied in any depth in the RAAF itself, how could the Air Force's leaders expect to inform and convince those outside their organisation?

Practical evidence of Westmore's findings, and a striking illustration of the doctrinal grave the RAAF had dug for itself, was presented in the news releases in which Minister for Defence K.C. Beazley and Chief of the Defence Force General Sir Phillip Bennett announced their decision to transfer ownership of the Blackhawk helicopters from the Air Force to the Army in 1986.¹⁶⁰ Unlike the relatively primitive Iroquois which it was to replace, the Blackhawk was an advanced weapons system with capabilities far exceeding those of previous ADF helicopters. Its potential to contribute to a variety of military activities was considerable. While the Blackhawk had been ordered primarily to shift troops, Minister Beazley correctly described it in his press release as a multi-role aircraft. Consequently, for the Minister then to state, as he did, that such a versatile asset would be used 'solely within the ground warfare environment' flew in the face of 50 years of air power thinking. General Bennett compounded the Minister's doctrinal sin with his extraordinary suggestion that the Blackhawk was not being acquired as a contribution to Australian air power and that as the Army was now going to operate the battlefield helicopter, the RAAF would be able to concentrate on providing the 'essentials' of air power.

Perhaps journalist Jack Waterford's suggestion that the Blackhawk decision was taken more on the basis of inter-Service politics than a rational assessment of the ADF's overall needs and potential explained the Minister's and the CDF's comments.¹⁶¹ However, even if that were the case, the fact that both men were still prepared to make those public pronouncements indicated that either their knowledge of air power doctrine was poor — perhaps excusable for a politician, but not for a CDF — or they had decided that air power doctrine carried little authority.

Exactly why airmen have been reluctant to codify their thoughts has not been positively established. The most widely quoted theory is one suggested by the American historian Frank Futrell, who has argued that military aviation tends to attract men of a practical rather than a philosophical bent.¹⁶² Futrell also noted that air force doctrinal thinking has not been systematically recorded, and that airmen have developed an oral rather than a written tradition. Those observations seem validated by the allied air forces' experiences in Korea and Vietnam, where on each occasion doctrine from previous wars had to be relearned. Futrell's assessment has been endorsed by Air Marshal Funnell¹⁶³ and supported by Chris Coulthard-Clark's definitive study of the RAAF between the wars, which indicated that in those years at least intellectual achievement was largely dismissed by many pilots who 'valued little beyond flying ability'.¹⁶⁴

The Director of the USAF's Air Power Research Institute, Colonel Dennis Drew, expanded Futrell's thesis in an essay published in 1990. While Drew was describing the USAF experience, his observations were relevant to other Western air forces. He described airmen as a 'relatively inarticulate lot', a factor which he believed was a major cause of the air power 'doctrinal dilemma'.¹⁶⁵ In Drew's opinion, there were two reasons for that dilemma. First, airmen were fascinated with technology, an understandable attitude but one which focused attention on the practical at the expense of the theoretical. Second, he suggested that the overwhelming technical superiority which American airmen almost always enjoyed in war largely removed the need to develop sophisticated ideas. Eventually, victory would come simply from marshalling superior forces and applying them against the enemy.

In the case of the RAAF, perhaps two additional factors could be added. For the first 50 years of its existence the RAAF was essentially a dependent organisation, borrowing ideas, strategies and doctrine. Unless an individual was especially motivated, there seemed little need to question the *status quo*. Second, there appears to have been an unproductive hierarchy of status in force. A major report on officer education and training prepared in 1979 noted a tendency for graduates from pilot and navigator courses to consider themselves aircrew first and RAAF officers second, an attitude which would seem likely to promote a narrow outlook rather than a broad professional commitment and ethos.¹⁶⁶ Further, within those two aircrew groupings there were entrenched intellectually stifling attitudes, as pilots in particular were inclined to limit their thinking to their flying specialisation, such as fighter or bomber operations.¹⁶⁷

The poor standard of air power education and the narrow outlook of the General Duties Branch suggests that many RAAF pilots believed that the ability to fly an aeroplane brought with it an intuitive knowledge of air power doctrine. Unfortunately that was not the case. Writing in 1928, Giulio Douhet had claimed that the war in the air was the true war of movement, in which swift intuition, swifter decision and even swifter execution were needed.¹⁶⁸ While Douhet may have been correct in terms of fighting, as far as thinking was concerned the RAAF may have profited from less intuition and more rigour.

In recent years steps have been taken to broaden the RAAF's executive base and, therefore, the quality of its thinking. Perhaps symbolically, Air Marshal Rowland's transfer from the Engineer Branch to the General Duties Branch when he became CAS in 1975 preceded by several months the appointment by the Air Board of a working party to study the introduction into the RAAF of a General List.¹⁶⁹ At the time there were seven specialist branches in the Air Force: General Duties, Engineer, Equipment, Medical, Accountant, Special Duties and Chaplains.¹⁷⁰ Under the General List concept, all officers above a stipulated rank would no longer belong to their branch, but would become members of a pool from which those senior appointments which did not require a specialist background would be filled. In proposing the review, the then Air Member for Personnel, Air Vice-Marshal J.C.Jordan, commented that to his knowledge there had never been a critical study of the existing system to see if it best met the RAAF's requirements.

The formal results of that review are not available, but it did not lead to any changes. Although the inflexibility of the branch structure continued to attract criticism, it was not until 1988 that the General List concept was endorsed.¹⁷¹ The eventual acceptance of the idea was based on a simple premise: the RAAF would benefit if, as far as possible, senior posts were filled by 'the best man for the job'. A General List incorporating all officers of the rank of air commodore and above was in force by 1989 and had been expanded to include group captains by 1990.¹⁷²

The introduction of the General List was paralleled by changes to conditions of employment which created greater opportunities in the ADF for women. That attitudinal change was, however, driven more by the philosophical commitment of the Labor government of Gough Whitlam than by any perceived need by the military to broaden its intellectual base. In December 1974 Prime Minister Whitlam and Defence Minister L.H. Barnard agreed that it was a basic right for women to accept and hold public office on equal terms with men.¹⁷³ Changes which consequently were introduced for females in the ADF included the following: employment on active service (but not combat duty), the abolition of female staffing ceilings, similar disciplinary regulations, common rank titles for officers, the expansion of career structures and the integration of the WRAAF and the RAAFNS into the RAAF. The RAAF was the pace setter. By 1990 it was graduating female pilots and had opened up 87 per cent of its total positions to women, compared to 60 per cent in the RAN and 19 per cent in theARA.¹⁷⁴

PLACING THE RAAF ON A SOUND CONCEPTUAL BASIS

Notwithstanding Air Commodore Westmore's damning conclusion regarding the sorry state of air power education and knowledge in the RAAF in 1989, progress had been made during the 1970s and early 1980s. It was, however, slow and uncoordinated. Following a major review of the officer education and training system in 1979, a new system was introduced to take an individual through from recruitment to the RAAF's senior single Service qualification, the Command and Staff College course.¹⁷⁵ While that was an important change to the Air Force's education system, the report on which it was based was notable for its failure to mention the terms 'air power' and 'doctrine' in 70 pages. As they progressed through the various levels of the new system, students were required to study air operations as part of a subject titled 'operations management'. The emphasis, though, was largely practical and contemporary, and was not the same thing as examining the RAAF's theoretical *raison d'être* and the basis of air power. Attempts to raise the standing of professional military education at the RAAF Academy saw the introduction in 1976 of a Graduate Diploma of Military Aviation, which incorporated air power and was taken in the fourth year of studies, following completion of the science degree. However, the diploma was dropped for the final four years of the academy's existence. At the Command and Staff College, air power was finally receiving thorough attention by the middle of the 1980s, although as attendance at that course does not occur until the mid career mark for most officers, one could question the timing.

Other valuable initiatives to enhance the exchange of ideas were taken outside the formal education system. In 1975 Air Marshal J.A. Rowland introduced an annual CAS symposium,¹⁷⁶ while in 1989 Air Marshal Funnell personally conducted the first senior officers' study period. The CAS symposiums have tended to concentrate on higher management issues, while the senior officers' study periods have been concerned primarily with national defence policy, strategy and air power. Perhaps the most important educational initiative was the decision taken in 1971 to send one or two officers annually to the USAF Air War College to complete a comprehensive program of air power studies. Through that program, the RAAF began to develop for the first time a group of scholars with a deep

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theoretical and practical knowledge of air power. It seems no coincidence that the officer primarily responsible for the development of doctrine in the RAAF, Air Marshal R.G. Funnell, and two of the three principal authors of the first air power manual, Group Captains B.L. Kavanagh and DJ. Schubert, were all graduates of the Air War College. Funnell in fact was the first, in 1972.

As noted previously, the development in the late 1970s of a formal concept of operations was a landmark in RAAF strategic thinking. However, the lack of a strong, indigenous doctrinal statement still caused problems. In November 1978 a paper prepared by the Directorate of Air Force Plans noted that the paucity of information for long-term planning had attracted adverse comment in recent years.¹⁷⁷ Much of that information was supposed to be available in a classified publication known as Air Staff Plans and Policy (ASD) 235, which ostensibly presented Air Force Office policy for the full range of RAAF operational activities. In reality, ASD 235's shortcomings were a source of constant irritation to its users. As part of a review of planning documents conducted in 1979, Air Commodore R.E. Frost was invited to comment on ASD 235's usefulness and content. Frost advised that, contrary to its stated purpose, the publication was of little use in the development of operational concepts.¹⁷⁸ In Frost's opinion, ASD 235 was flawed because it reflected only RAAF policy, which in most cases was unreferenced to higher level policy or doctrine. Other respondents levelled similar criticisms, as well as noting that the document almost invariably was out of date. There was also considerable disagreement and some confusion over what exactly it should contain.

The essential problem with ASD 235 and, indeed, RAAF higher level planning generally, was identified by the Director-General Plans and Policy, Air Commodore D.G. Cameron, in March 1983. During the preparation of a paper on the future goals of the RAAF, Cameron found that the lack of an authoritative document detailing the doctrines of air power in an Australian context inhibited effective planning.¹⁷⁹ Cameron concluded that indigenous doctrine should form the basis of the RAAF's contribution to Australia's military strategy, as well as providing the foundation of the Air Force's concept of operations. Without that doctrine there was a serious gap in the planning process. Joint Service publications could not fill the gap, as they were not only directed more towards joint tactical and procedural matters, but also tended to assume the theories underlying single Service operations and policies. In any case, it was professionally desirable for the RAAF to take the lead in developing air power theories for the ADF. Finally, Cameron wrote, the Air Force needed a single source of authoritative doctrinal guidance to circulate to all staff.

Cameron accordingly recommended to the Chief of Air Force Development, Air Vice-Marshal Funnell, that an RAAF doctrine manual should be drafted. Two main uses were envisaged. First, as the definitive exposition on Australian air power, the manual would become a text book for junior officers. Second, and 'more importantly', it would be the core guiding document for Air Force planning. Because of the importance of those functions, it would be essential for the manual to be intellectually authoritative and be capable of withstanding criticism. Cameron's proposal was strongly supported by Funnell and the CAS, Air Marshal S.D. Evans.

A writing team comprising the Director of Air Force Development, Group Captain P.M. Grigg, and two Air Force Reserve officers, Wing Commander W.R. Fisher and Wing Commander R.W. Howe, was formed in June 1983. An early outline of the manual proposed two parts. The first was to examine strategy and air power under chapter headings such as survey of strategic thought, air power and strategy, principles of war, Australia's geopolitical situation, air power in the defence of Australia, and concepts of operations. Part Two was to address air operations under three main categories: major air tasks (strategic strike, air defence, maritime and transport); support activities (logistics and administration); and combat support activities (such as EW and AEW&C). The intention was to have the manual completed and distributed by July 1984.

The writing team soon encountered a myriad of problems. There was little analysis they could draw on relating to strategy, doctrine and command and control as they applied to past Australian military activities in general and air activities in particular. Overall strategic guidance was vague. The Defence Force Capabilities Papers were little more than programming documents. There was no Defence Force concept of operations. And the RAAF concept of operations was relatively new and untested.¹⁸⁰ By December the team was struggling. Too many people had become involved, and their well-intentioned suggestions seemed only to create semantic and conceptual confusion and disagreement. Air Commodore Cameron tried to refocus the project with the astute observation that perhaps insufficient attention had been paid to the basic features of the AP 1300 which, while outdated for the RAAF, was nevertheless a good theoretical model. Cameron noted the emphasis the AP 1300 placed on the *study* of war, rather than simply reprinting a selection of views of eminent commentators, which seemed to be the RAAF team's approach. He also pointed to the 'delicate blend' of historical information in the AP 1300, which he suggested not only encouraged broader research but also was both readable and stimulating. By contrast, he found the RAAF writing team's outline esoteric and argumentative.

The project had in fact lost its way and was on borrowed time. Coincidentally, the final word on the project file came from Air Vice-Marshal Funnell who, four years later as CAS, was to provide the essential impetus and support for the successful completion of the RAAF's first air power manual. In January 1984, however, as acting CAS, Funnell expressed serious reservations about the writing team's interpretation of strategy.¹⁸¹ Several draft chapters were subsequently prepared but had little impact. Some months later when Air Marshal Evans retired and Funnell was posted, the project simply ran out of steam.

Air Marshal Funnell became Chief of the Air Staff in July 1987 and immediately reactivated the air power project.¹⁸² Funnell was motivated by four factors. First, he held a long-standing wish to place the operations and activities of the RAAF on a sound conceptual base.¹⁸³ Second, he believed that the role of air power in Australia's defence was undervalued and poorly understood, a situation inimical to national security.¹⁸⁴ Third, and largely as a consequence of the first two factors, in Funnell's opinion there were forces at work which could relegate the place of air power in national security to no more than a supporting role. In mid 1987 there was, he wrote, a 'real danger' that the RAAF's operational assets would be divided up and placed under the operational control of the Navy and Army.¹⁸⁵ He believed that would be 'disastrous' for the employment of air power, as expertise and the concentration of forces would be seriously diminished. Finally, Funnell had a deep intellectual interest in military history, strategy and doctrine. He had built a reputation as a highly regarded military scholar, regularly speaking and publishing in his field.¹⁸⁶ That academic background was complemented by his experience as an F-111 squadron commander and pilot.

Funnell's academic and practical experience had led him to conclude that there was too much reliance in Australian defence thinking on European and American models, and that there was a long overdue need for distinctively Australian ideas to be developed.¹⁸⁷ For example, referring to the RAAF's reliance on numerous USAF concepts, Funnell pointed out that the RAAF had 22 000 people and a few hundred aircraft, while the USAF had 600 000 people and thousands of aircraft. Further, the Americans had a nuclear capability and a global role, while the RAAF was non-nuclear and essentially regional. Those were major differences. As he noted, Australians needed to do some 'serious thinking' about how best to use their small force.

Funnell attacked the problem of placing the RAAF on a sound conceptual basis on two fronts. He tasked his Director-General Plans and Policy, Air Commodore G.W. Neil, with writing air force doctrine. Neil and his staff were to be assisted by a group of senior officers who would meet and discuss the issues informally. Stating that the need to define and

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articulate the RAAF's intellectual basis was the most important challenge facing the Air Force, the CAS instructed Personnel Branch to give the manning of Neil's directorate the highest priority.¹⁸⁸ Funnell stressed to Neil the importance of establishing a process for the continuing development of doctrine; whatever the team came up with had to be supported by a system of continual review and revision.¹⁸⁹ At the same time, Funnell directed two Australian officers who were students at the USAF Air War College, Wing Commanders D J. Schubert and P.J. Criss, to work together developing operational concepts for small, non-nuclear air forces like Australia's. Schubert and Criss subsequently published their work — which won the Air War College's most prestigious research award for 1987-88 — as a book, titled *The Leading Edge: Air Power in Australia's Unique Environment*. As has been noted previously, it was the first book dealing with air power doctrine published by permanent RAAF officers for 50 years. Schubert was later to become one of the principal authors of *The Air Power Manual*, while Criss was to make a major contribution to operational doctrine as a commander in the RAAF's Strike/Reconnaissance Group.

Predictably, politics soon impinged on the work of Air Commodore Neil's writing team. The release of the Policy Information Paper *The Defence of Australia* in March 1987 and the active role taken by Defence Minister K.C. Beazley had reinvigorated the defence debate following a decade of intellectually moribund defence ministers.¹⁹⁰ In the now-lively atmosphere, the perennial inter-Service power struggle over the ownership of air assets inevitably arose. That struggle was kindled by the Blackhawk decision announced only months before the release of the White Paper. Thus, in an early discussion paper, Air Commodore Neil noted his concern that the other two Services were seeking greater control of Air Force operational assets.¹⁹¹ Neil suggested that in fact the reverse should apply. Because of air power's unique characteristics and pervasive nature, logically airmen should control most military operations. He acknowledged that promoting that argument might fuel the fires of inter-Service rivalry, but observed philosophically that the flames seemed about to engulf the Air Force anyway. If the RAAF did not get its intellectual house in order, then, in Neil's view, there was a genuine danger that the long-standing, vested opposition to the RAAF could result in the misuse of air power, and decrease Australia's defence capabilities. As Neil drily noted, the issue was neither new nor without emotion. In the circumstances, he concluded, the only course for the RAAF was to consolidate its thinking and argue its case logically from the basic principles of war and national strategic guidance.

Not surprisingly, Air Commodore Neil's team felt obliged to deal first with the question of the 'equal and independent' place of air forces in the military family. In its first discussion paper, his group accordingly spoke of the 'indivisibility' of air power, a quality which the paper implied was inherent in air power. That concept was vigorously challenged by Air Commodore I.M. Westmore in a review of the paper. As Westmore pointed out, air power was not inherently indivisible. The United States, for example, maintained four separate, very powerful air forces (the USAF, the Navy, the Army and the Marines), while even Australia had three. Indivisibility was a means, not an end, to the efficient application of air power.¹⁹² The real issue for a small defence force, Westmore argued, was *unity of effort*, so that, when necessary, the maximum force could be concentrated in time and space, for either the support of other combat forces or independent air operations. It was the essential requirement to concentrate which, in a force with limited assets, underpinned the principle of the 'unity' of air power.

Westmore's important doctrinal point was expanded in a complementary discussion paper prepared by Air Headquarters.¹⁹³ Noting that, as a relative newcomer on the military stage, air power did not have the intellectual backing of centuries of strategic thought and theory, Air Headquarters suggested that the effective use of the air weapon in contemporary conflict was still not understood. Air Headquarters identified concentration of force and economy of effort as the two principles of war most applicable to air power. Those principles could be observed, it was argued, only by adherence to two basic command and control tenets. First,



Air Marshal FLG. Funnell: Placing the RAAF on a sound conceptual basis. RAAF.

because (in Australia's case) there almost invariably would be insufficient air assets to meet all demands, air forces should be controlled at the highest practicable level. Second, the application of air power was a highly specialised business. Modern aircraft and air weapons systems were complex, versatile and flexible and could bring enormous firepower to bear; further, those effects could be enhanced through the expert matching of crews, asset capabilities and tasks. Air Headquarters consequently argued that the control of air assets should be vested only in a commander with a deep understanding of air power and its application.

In September 1987 Wing Commander B.L. Kavanagh arrived in Air Commodore Neil's Directorate following graduation from the USAF Air War College and assumed prime responsibility for writing doctrine. At that time, Wing Commander Schubert, who had been tentatively identified to work with Kavanagh, was still in the United States at the Air War College. Schubert's research supervisor wrote to Air Marshal Funnell suggesting that Schubert's posting to the college be extended by a year to allow him to develop further his work on Australian air power. In his response, Funnell acknowledged the merit of the proposal, but refused the request because of the importance he placed on the national and political dimensions of doctrine. Funnell believed Schubert would benefit more by returning to Australia, where he and Kavanagh had direct access to policy makers and strategists within the Australian Defence Force.¹⁹⁴

At the conclusion of his Air War College course, Schubert joined Kavanagh as the second member of a full-time doctrine writing team. Air Marshal Funnell made the two directly responsible to him and, in order to insulate them from the day-to-day demands of Air Force Office, relocated them to the relative isolation of the RAAF's Canberra air base. Now called the 'CAS Project Team', Kavanagh and Schubert were given six instructions. They were to write an Australian air power manual, stimulate thinking about air power and air forces, institute a process for developing that thinking, make it understood, apply it, and ensure it remained appropriate.¹⁹⁵ Later they were joined by a third principal doctrine author, Wing Commander G. Waters.

Getting the writing team in place represented only one half of Funnell's immediate strategy for educating his own Service, the Defence Force and the broader community. He had also decided that a centre for air power studies was essential if the longer term objectives he had given Schubert and Kavanagh were to be realised. At an AOC's symposium in September 1988 the Commandant of the RAAF College, Group Captain MJ. Rawlinson, had proposed the establishment of a centre for the study of air power within the Department of History at ADFA.¹⁹⁶ Rawlinson's proposal was strongly supported but, because of the wide range of activities envisaged, Air Marshal Funnell decided that for the first few years at least the centre should remain within the RAAF. An embryo centre already existed in the form of the CAS Project Team. In September 1989 Group Captain B.D. O'Loughlin was posted in as Director, and joined Schubert, Kavanagh and Waters as the first members of the RAAF Air Power Studies Centre (APSC). Command of the APSC was retained by the CAS, who stated that the decision to establish the centre reflected his determination to 'raise the level of the RAAF's professional understanding of its real business — air power'.¹⁹⁷

Writing in the 1920s, Henry Wrigley had lamented the lack of a 'thinking department' to assist those involved in 'air fighting' to develop concepts and strategies.¹⁹⁸ Sixty years later, that department finally existed. Three key tasks were allocated to the Air Power Studies Centre: to advise on air power studies, doctrine and policy; to develop and maintain RAAF air power doctrine; and to coordinate and sponsor training and syllabus development.¹⁹⁹ A full list of the centre's functions, roles and tasks is at Figure 6.2.

FIGURE 6.2

*FUNCTION, ROLES AND TASKS OF
THE RAAF Air POWER STUDIES CENTRE
JULY 1989*

- The function of the RAAF APSC is to be the Centre of RAAF air power studies and doctrine
- The role of the APSC is to analyse, develop and coordinate RAAF air power studies and doctrine for CAS and the RAAF
- The tasks of the APSC are as follows:
 - advise on air power studies, doctrine, and policy implications
 - study developments in air power world-wide
 - develop and maintain RAAF air power doctrine
 - conduct approved research in air power doctrine
 - coordinate, where necessary, approved research in air power doctrine on behalf of the RAAF
 - conduct and sponsor briefings, seminars, lectures and study periods on air power studies and doctrine
 - coordinate and sponsor training, provide training and syllabus development advice on appropriate air power studies
 - sponsor RAAFSC in establishing a library and resource centre for the study of air power
 - sponsor appropriate establishments for the production of publications, training aids and audio-visual materials relevant to air power studies
 - sponsor and recommend RAAF fellowships for studies in air power and doctrine
 - sponsor the production and maintenance of a written history of the RAAF, including its air power doctrine, traditions, organisation and roles
 - promote the study, discussion and analysis of air power within the RAAF and associated organisations, such as the Air Training Corps and the RAAF Association
 - develop and maintain close liaison on air power topics with sister and allied Services, as well as appropriate Australian and foreign research and educational institutions

Source: APSC, 3/1 /Air, Draft Air Force Organisation Directive 7/89, Formation of the RAAF Air Power Studies Centre, July 1989.

By the time the APSC was formed, Schubert, Kavanagh and Waters had established the philosophical framework for the draft RAAF air power manual. That framework was presented in two articles which appeared in successive editions of the *Defence Force Journal* in 1989: 'The RAAF Writes its Doctrine' and 'One-a-Penny, Two-a-Penny ...'.^{2(K)} As its title indicates, the latter article was concerned with the sensitive issue of the 'unity' of air power.

Chapter Six

Kavanagh argued that a small country like Australia simply could not afford to 'penny packet' its limited number of highly valuable air power assets and that unity of command was essential if the ability to concentrate the maximum force at the critical place and time were to be achieved. The earlier article addressed a range of issues, including the nature and relevance of doctrine, and joint and single Service considerations. A feature of the article was the analogy of the doctrinal 'still' which the authors used to illustrate the doctrinal process. They argued that doctrine is developed from the distillation of relatively permanent basic principles which arise primarily from combat experience, and innovative ideas. The outcome of the interaction between principles and innovations could be regarded as 'pure' doctrine. However, because doctrine did not exist in a vacuum, the intellectual distillation process had to be modified by the external additives of a nation's defence policy and enduring geostrategic circumstances.²⁰¹ Schubert and Kavanagh also recognised that the output from their doctrinal still could be further modified by a defence force's structure, as the relationship between concepts and capabilities flows both ways; that is, ideas must be supported by hardware, while a force's existing hardware must influence current thinking.

The writing team made the point that air power doctrine comprehends far more than its final manifestation of an aircraft taking off on a mission. Good doctrine, they argued, should reflect the full range of air force activities and, in turn, should influence every level of planning in the Air Force: the employment and support of aircraft, the determination of future capabilities, the selection of equipment and the training of all personnel. In sum, an indigenous doctrine should give all members of the RAAF a common appreciation of why their Service existed and how air power could best be used to defend Australia.

Other important doctrinal concepts were established through an iterative set of discussion papers coordinated by Air Commodore I.M. Westmore.²⁰² The final version of that paper defined, *inter alia*, the positive attributes of air power, its limitations, and air force maxims. Two of the more important issues it resolved related to the concept of air campaigns and 'over-arching' doctrine. Contributors to the process eventually concluded that there are three separate and distinctive air campaigns which can be waged: strategic strike (later renamed air bombardment), control of the air, and support for surface forces. Those campaigns in turn are responsive to three over-arching doctrinal principles: air forces can either exercise air power independently or contribute to surface campaigns; all air campaigns must contribute to the achievement of national objectives through a coordinated military strategy; and while air campaigns can be pursued separately, each is mutually supportive of other air and surface campaigns.

As well as developing the conceptual framework for air power doctrine, the Air Power Studies Centre needed to establish the place of single Service doctrine within a defence environment which strongly emphasised joint operations. In the opinion of the Air Power Studies Centre, valid joint doctrine could only be developed from a foundation of single Service expertise. Thus, if the ADF were to get its joint doctrine right, it was essential for each of the Services to reason correctly and coherently.²⁰³ The APSC's conclusion was endorsed by the Deputy Chief of the Air Staff, Air Vice-Marshal E.A. Radford, in a paper to HQADF commenting on the notion of a hierarchy of doctrine. Radford noted that joint doctrine is logically grounded in single Service doctrine, but dismissed as a *non sequitur* any suggestion that the relationship established a hierarchy.²⁰⁴ He acknowledged that the development *process* was hierarchical, but otherwise doctrines had to be equal and complementary, as both single Service and joint doctrines were concerned with specific environments.

Against that background, the first edition of *The Air Power Manual* was published by the APSC in August 1990.²⁰⁵ Containing 273 pages, the manual was divided into three parts. Part One addressed the general aspects of war and air power, and included comment on the nature of air power, the air campaigns, maxims of air power, and a hierarchy of application. Part Two

dealt with the Australian approach to war, which not only presented an Australian perspective of the topics from Part One, but also addressed in detail the different air operations, missions and tasks. Part Three, which Air Marshal Funnell described as perhaps the most important in the long term, established the process for the continual review and amendment of doctrine.²⁰⁶ The list of chapter titles at Figure 6.3 summarises the manual's contents and structure.

FIGURE 6.3

SUMMARY OF CONTENTS
AAP 1000, THE AIR POWER MANUAL, 1990

PART 1

CHAPTER

1. War
2. Air Power

PART 2

3. The Australian Approach to War
4. Air Power in Australia
5. Counter Air Operations
6. Independent Strike Operations
7. Aerial Reconnaissance, Surveillance and Electronic Warfare
8. Airlift Operations
9. Combat Support Operations
10. Sustainment Operations
11. Cooperation

PART 3

12. The Doctrine Process

Source: RAAF, AAP 1000, *The Air Power Manual*, APSC, Fairbairn, 1990.

The manual's philosophical basis reflected the project team's earlier articles and discussion papers. Three distinct air campaigns were identified: control of the air, air bombardment, and air support for combat forces.²⁰⁷ Control of the air was the prime campaign. Four maxims underpinned the execution of those campaigns: concurrent campaigns, unity,

independence and balance. The concept of 'concurrent campaigns' described air power's ability to prosecute two or more of the three campaigns simultaneously, perhaps using the same assets, a quality the authors considered fundamental to the effective employment of air power. Because of the imperatives to marshal scarce resources, achieve economies of scale and apply the right amount of power at the right time and place, 'unity' was the second maxim. The manual stressed that unity did not mean indivisibility, acknowledging that in many armed forces air power was divided. Rather, the justification for the maxim was effectiveness and efficiency, largely through the ability to concentrate force. The third maxim of 'independence' recognised that air power has a legitimate, independent role in combat operations, and that if the full potential of the air weapon is to be realised, an independent organisation is essential to foster specialisation and expertise. Finally, the manual argued that an air force needed 'balance', in which the force structure was shaped to achieve specific capabilities. That definition differed from the thinking of the 1950s and 1960s, when a balanced air force was one with the capability to undertake any task, largely regardless of the national strategic outlook. The manual concluded the section on maxims with the advice that if the maxims were not observed, military effectiveness would decrease.

Complementing the maxims were six 'RAAF imperatives', which could be regarded as principles of air power employment, and which were selected to meet the special characteristics of the RAAF — a medium-sized, modern, highly trained, conventionally armed air force, defending a vast area with limited resources. Given those characteristics, the following imperatives were identified: command (to be at the highest practicable level and by a specialist), qualitative edge, attrition management, centre of gravity ('RAAF air power is best applied when matched offensively against an adversary's centre while defending its own'), timing, and preparedness.²⁰⁸

Copies of *The Air Power Manual* were distributed to every RAAF officer, ADF training establishments, libraries, universities, regional and allied air forces, and other outlets for public information. An abridged version for the less enthusiastic reader was planned. Some knowledge of air power as presented in the manual was to become a prerequisite for graduation from a wide variety of RAAF courses, ranging from recruits to the Command and Staff Course.²⁰⁹

The initial response to the manual was highly favourable, with positive comments coming from, *inter alia*, the Governor-General, the Minister for Defence, the Chief of the Defence Force, and Australia's leading strategic scholar, Desmond Ball.²¹⁰ Numerous requests for the volume were received from overseas air forces, while during visits to neighbouring countries to discuss doctrine, staff from the APSC found their work had generated considerable interest. In some circles, however, the reaction was less enthusiastic. There were indications that the long-standing predilection of the Army and the Navy to resist the development of independent air power still existed. Seven months after the manual's release it had not been read by either the ADF's Maritime Commander (Rear Admiral K.A. Doolan) or Land Commander (Major General M.P. Blake), an extraordinary situation given the joint responsibilities of those two commands.²¹¹ Its section on maritime air operations was criticised by Commodore W.S.G. Bateman, the Head of the RAN's Strategic Studies Project (the RAN equivalent of the APSC) for its allegedly narrow outlook.²¹² Bateman's own narrow use of historical material to support some of his criticism suggested his position was less than objective.²¹³ A review of the manual by prominent defence commentator and former RAN officer Michael O'Connor suggested that the (perceived) emphasis RAAF doctrine placed on independent air bombardment was an 'illegitimate fantasy'.²¹⁴

The extent to which the RAAF considers those kinds of attitudes valid should be evident in future editions of the manual.

NOTES TO CHAPTER SIX

- 1 Quoted in Millar, *Australia in Peace and War*, p 188.
- 2 For a summary of foreign and defence policy during the Whitlam years, see *ibid*, pp 405-21.
- 3 *CPD*, 22-8-73, pp 237-45.
- 4 *RAAF News*, November 1973, p 1.
- 5 Ball, *The Politics of Defence Decision Making in Australia: The Strategic Background*, Reference Paper No 93, p 19.
- 6 Ball, *The Politics...*, p 19.
- 7 *ibid*, p 16.
- 8 Leaked details from later versions of some of those highly confidential documents were published in the early 1980s in the *National Times*: see 'The Russell Hill Papers', 12/18-8-83; and 'The Strat Basis Papers', 30-3-84 to 5th 1-84. *qv* Ball, *The Politics...*, pp 3-25, and The Dibb Review, pp 24-8.
- 9 The Dibb Review, pp 27-8.
- 10 Ball, *The Politics...*, p 18.
- 11 *ibid*, p 20. *qv* The Dibb Review, p 25.
- 12 Frost, Interview. Frost was a member of the joint planning staff in the Department of Defence from December 1971 to December 1974.
- 13 Desmond Ball, *Methodology for Australian Defence Force Development*, Reference Paper No 62, Canberra, SDSC, ANU, February 1981, pp 1-4.
- 14 *ibid*, pp 2-3.
- 15 Evans, Interview; Frost, Interview; Air Commodore KTongue, Interview, Kurrajong Heights, 17-4-91.
- 16 For discussion on problems with warning times, see Babbage, *Rethinking Australia's Defence*, pp 85-90; and Evans, *A Fatal Rivalry*, pp 70-2, 160. For a more sanguine view, see The Hon K.C. Beazley, 'Thinking Defence: Key Concepts in Australian Defence Planning', in *Australian Outlook*, August 1988, pp 71-6.
- 17 The definition of the concept was given by Mr C.F. Cawsey, First Assistant Secretary, Force Development and Analysis Division, Department of Defence, during an inquiry by the Parliamentary Joint Committee on Foreign Affairs and Defence, 9-11-78. Quoted in Ball, *Methodology...*, p4.
- 18 Tongue, Interview.
- 19 Ball, *Methodology...*, p 4. For a defence of the core force concept, see The Dibb Review, pp 34—5.
- 20 The Country Party changed its name to the National Party on 6-4-74.
- 21 *Australian Defence*, Presented to Parliament by the Hon DJ. Killen, November 1976, esp. pp 12-13.
- 22 APSC, Force Structure Derivation —An Alternative, DGOR-AF Paper, June 1977.
- 23 Evans, Interview; Tongue, Interview; Air Vice-Marshal H.K. Parker, Interview, Canberra, 18-10-90.
- 24 APSC, Force Structure Derivation —An Alternative, DGOR-AF Paper, June 1977, p 4.
- 25 Newham, Interview.
- 26 Evans, Interview.
- 27 After his retirement, Air Marshal Evans became a Visiting Fellow at the Australian National University's Strategic and Defence Studies Centre. During that time he wrote a working paper which in effect is the RAAF's concept of operations. See Evans, *Air Operations in Northern Australia*, Working Paper No 101.
- 28 DAFP, DGOP Folder 1944, RAAF Concept of Operations, September/October 1979.
- 29 RHS, Chief of Air Staff Advisory Committee (CASAC) Submission 34/79, 1-8-79.
- 30 Air Marshal J.W. Newham, 'Air Power in the Defence of Australia', in Ball, *Air Power...*, pp 138-9.
- 31 DAFP, AF 86-13234.
- 32 Evans, Interview; Newham, Interview.
- 33 APSC, Force Structure Derivation —An Alternative, DGOR-AF Paper, June 1977.
- 34 RHS, CASAC Submissions 15/77, 18-3-77; 34/79, 1-8-79; and CASAC Minute 40/77, 12-5-77.
- 35 RHS, CASAC Submission 34/79, 1-8-79.
- 36 The continuity in RAAF planning since the late 1970s is evident in DAFP, DGOP Folder 1944.
- 37 *RAAF News*, March 1980, p1.
- 38 *RAAF News*, April 1980, p1.
- 39 The Dibb Review.
- 40 Policy Information Paper, *The Defence of Australia, 1987*, Presented to Parliament by the Minister for Defence, the Hon K.C. Beazley, March 1987 (hereafter The 1987 White Paper).
- 41 The Dibb Review, p 28.

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- 42 Air Marshal S.D. Evans has written that he discussed the RAAF concept with Dibb 'long before' the latter was appointed to carry out his review for Minister Beazley. Evans, *A Fatal Rivalry*, p 70.
- 43 The Dibb Review, pp 50-1.
- 44 *ibid*, pp 52-5.
- 45 DAFP.AF 86-16116.
- 46 The Dibb Review, pp 120-2; qvpp 66-7.
- 47 *RAAF News*, July 1986, p 8.
- 48 *RAAF News*, August 1986, p 21. qv Newham, Interview; and Evans, Interview.
- 49 The Dibb Review, p 133.
- 50 Evans, *A Fatal Rivalry*, p 79; qv Newham, Interview.
- 51 *RAAF News*, August 1986, p 21.
- 52 The Dibb Review, pp 35-6.
- 53 *ibid*, p 51.
- 54 APSC, Ashworth, *The Defence of Australia: Concepts and Issues*, pp 56-60.
- 55 Air Commodore N.E Ashworth, Letter to Author, 11-6-91.
- 56 Wing Commander D.C. Chipman, 'Deterrence and Australia', in *The Yolla*, 1987-88, pp 6-9.
- 57 Group Captain D.C. Chipman, Letter to Author, 28-5-91.
- 58 See *The Yolla*, Vol 2, No 13, 1989, p 25.
- 59 Chipman, Letter to Author, 28-5-91; The Dibb Review, pp 66-7, 120-2.
- 60 APSC, Air Commodore B.D. Searle, Brief on the Employment of the SRF [Strike Reconnaissance Force] in Low and Escalated Low Level Contingencies, 1991. The F-111's utility in higher level contingencies was not at question.
- 61 *loc. cit.* qv DAFP, AF 88-3850; and Alan Stephens, 'The Case for Surgical Strike Capability', in *Asia-Pacific Defence Reporter*, July 1990, pp 19-20. There is, of course, an important underlying assumption in the concept; namely, that a demonstration attack will in fact deter, rather than precipitate an escalation of hostilities.
- 62 Group Captain P.J. Criss, in the discussion following the paper by Brigadier P.L. McGuinness, 'Air Power in the Air/Land Environment', in Stephens, *Smaller But Larger*, pp 196-7; The 1987 White Paper, p 53. The idea of using surgical strike as a major option in low-intensity conflict is also attracting support in the United States: see *Inside the Pentagon*, 30-3-90, p 8.
- 63 See p 154 above; and DAFP, AF 88-3850.
- 64 DAFP, AF 88-3850.
- 65 The key to the F-111's strike capability against land targets is the Pave Tack precision guidance system, fitted retrospectively in the 1980s.
- 66 *RAAF News*, August 1986, p 21.
- 67 For debate on the Dibb Review, see Babbage, *Looking Beyond the Dibb Report*, Working Paper No 110; Mack, *Defence Versus Offence: The Dibb Report and its Critics*, Working Paper No 14; and Desmond Ball, 'The Future of Air Power in the Defence of Australia', in Ball, *Air Power...*, pp 619-49.
- 68 The 1987 White Paper, pp 31-2.
- 69 *ibid*, p 41. Official support for offensive operations was also given in a brief but important comment on deterrence contained in a major policy statement made by the Minister for Foreign Affairs and Trade in December 1989: see *Australia's Regional Security*, Ministerial Statement by Senator Gareth Evans, 1989, pp 17-18.
- 70 The Hon Kim C. Beazley, 'Australian Defence Policy', in Ball, *Air Power...*, pp 3-15.
- 71 Air Marshal S.D. Evans, 'Almost a Tiger', in *The Bulletin*, 18-6-91, pp 38-40.
- 72 Desmond Ball, 'Air Power in the Regional Balance: Maintaining the Peace in South-East Asia', in Stephens, *Smaller But Larger*, pp 41, 59.
- 73 The 1987 White Paper, pp vii-x. qv Senator the Hon Robert Ray, 'Australia and the Gulf War', *News Release*, 6-2-91.
- 74 The 1987 White Paper, ppvii.x.
- 75 See p 165 above.
- 76 Support for the strategic outlook presented in The Dibb Review and The 1987 White Paper was expressed in *Australia's Strategic Planning in the 1990s* and The 1991 Force Structure Review; by Senator the Hon Robert Ray, 'Australia and the Gulf War', *News Release*, 6-2-91; and General P.C. Gration, Address to RUSI Seminar, 'The ADF in the Region of the Future', Canberra, 28-9-91.
- 77 The Hon K.C. Beazley, 'Thinking Defence...', pp 71-6;

- 78 Gareth Evans (and Bruce Grant), 'The Building of A Safer, Fairer World, in the *Canberra Times*, 2-11-91, p 12. The article was an extract from the book *Australia's Foreign Relations: In the World of the 1990s*, Melbourne, 1991.
- 79 General P.C.Gration, Address to RUSI Seminar, 'The ADF in the Region of the Future', Canberra, 28-9-91; qv 'Radical Plan for Aust-NZ Defence Force', in the *Canberra Times*, 29-9-91, p 1.
- 80 By the time General Gration made his proposal, the idea of amalgamation or 'complementarity' had been under examination in New Zealand for some time. See *The Defence of New Zealand 1991*, A Policy Paper.
- 81 American resupply was essential not only during the 1991 Gulf War, but also, for example, to Israel during the 1973 Yom Kippur War, and to the United Kingdom during the 1982 Falklands War. See Armitage & Mason, *Air Power in the Nuclear Age*, pp 129-33; and Eddy, Linklater & Gillman, *The Falklands War*, p 194.
- 82 Sir Michael Quinlan, Address to RUSI Seminar, Canberra, 28-9-91.
- 83 The Auditor-General, Audit Report No 3, 1990-91, *Department of Defence, Australia's Army Reserve*, Canberra, 1990. In November 1991, a parliamentary enquiry concluded that the Army Reserve was 'generally ineffective in meeting its readiness objectives in allocated roles': Parliament of the Commonwealth of Australia, Joint Committee on Foreign Affairs, Defence and Trade, *The Australian Defence Force Reserves*, p 113.
- 84 The 1991 Force Structure Review, pp 4, 22.
- 85 *ibid*, pp 19-20.
- 86 Armitage & Mason, *op. cit.*, pp 129-33, 227-39; and Eddy et al, *op. cit.*, pp 160-8, 205-8. The prominent US naval analyst Norman Friedman has stated that, in an environment of air launched, stand-off anti-shipping missiles, surface vessels without fleet air defence 'will die — badly'. Conference on *Naval Power in the Pacific: Towards the Year 2000*, ADSC, Canberra, 13-14 May 1991.
- 87 The 1987 White Paper, pvii. qv 91-95, The Defence Corporate Plan, 1991, p 11.
- 88 Air Marshal R.G.Funnell, 'Per Ardua Ad Astra', in *Defense and Foreign Affairs*, October 1990, pp 40-1, 68; qv Air Vice-Marshal B.H. Collings, 'Missing Links in Our Air Defence System', in *Aircraft*, July 1989, pp 54-5.
- 89 For comments from 1976, see Ross Babbage, 'The Implications of Changing Technology for the Future of Manned Tactical Aircraft', in Ball, *The Future of Tactical Airpower in the Defence of Australia*, pp 25-50; qv comments by Defence Minister D.J. Killen endorsing the importance of AEW&C aircraft, *CPD*, 2-3-78, p 342. For recent comment, see The 1991 Force Structure Review, pp 6, 11.
- 90 The Dibb Review, pp 96-8; and The 1991 Force Structure Review, pp 2, 4, 28. qv Parliament of the Commonwealth of Australia, Joint Committee of Public Accounts, *Aspects of Defence Equipment Support: Spares and Ammunition*, 1986.
- 91 Group Captain R.J. Killeen, Interview, Canberra, 15-4-91; and Mr P. Ekins, Interview, 3-5-91 and 20-5-91. Killeen was President of the Australian Ordnance Council from February 1990 to April 1991; Ekins, as a wing commander, was involved in RAAF weapons operational requirements and acquisition from 1978 to 1982. qv David Lague, 'Gulf Experience Belies Self-Reliance Hope', *Financial Review*, 14-11-91, p 17.
- 92 Quoted in Desmond Ball, 'The Future of Air Power in the Defence of Australia', in Ball, *Air Power...*, p 638.
- 93 RHS, Air Board Submission 34/72, 12-5-72.
- 94 DAFF, AF 86-34626.
- 95 For an authoritative account of the Basic Pilot Trainer Aircraft Project, see The Parliament of the Commonwealth of Australia, Joint Committee of Public Accounts, Report 243, *Review of Defence Project Management*. Vol 2, p 145 of that report described the project as 'one of the least successful' of the 16 Defence projects the committee examined.
- 96 See pp 146-7 above.
- 97 *CPD*, 7-4-78, pp 1223-5.
- 98 For the detail of this policy, see R.M. Stanier, 'The F/A-18 Hornet Industry Program', in *Journal of the Royal United Services Institute of Australia*, Vol 11, No 1, August 1990, pp 23-33.
- 99 The 1987 White Paper, p 80.
- 100 *ibid*, pi 12.
- 101 Department of Defence, *Defence Reports, 1987-88, 1988-89, 1989-90*. The 1990-91 figures are estimates.
- 102 Graeme Cheeseman, 'Australia's Defence: White Paper in the Red', in *Australian Journal of International Affairs*, Vol 44, No 2, 1991, p 103.

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- 103 The 1991 Force Structure Review, pp 6, 46.
- 104 See John Stackhouse, 'Bottoming the Barrel', in *The Bulletin*, 23-7-91, pp 78-9. Stackhouse states that because of present expenditure commitments, a 'real cost crunch' will come in 2007, when both the new strike aircraft and new major surface naval vessels will be needed. Stackhouse's assessment made no allowance for the AEW&C aircraft which RAAF planners already believe are essential.
- 105 The 1991 Force Structure Review, p 28.
- 106 The cost of the F-1 17A is from N. Munro & B. Opall, 'War Boosts F-117A, USAF Says', in *Defense News*, 15-4-91, p 1. Data used for the indicative costs of the F-22 and B-2 are from Department of the [US] Air Force, *Control of the Air and US National Security: The Case for the F-22*, 1991; and *The Case for the B-2*, 1991. qv Lambeth, 'Trends in Air Power...', in Stephens, *Smaller But Larger*, p 129.
- 107 Group Captain A.G.B. Vallance, in the discussion following Lambeth, 'Trends in Air Power...', in Stephens, *Smaller But Larger*, pp 149-50.
- 108 *Jane's Defence Weekly*, 15-6-91.
- 109 RHS, CASAC Submissions 52/77, 4-8-77; 53/77, 26-8-77; and 34/79, 1-8-79.
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CHAPTER
— SEVEN—



CHALLENGES AND OPPORTUNITIES

At the start of the last decade of the 20th century, the international outlook is at once both promising and uncertain. The sudden collapse of communism in Eastern Europe and the dramatic rapprochement between the United States and Russia has been one of the most important events of the century. In the long term, the prospects for a major and lasting relaxation of tensions at the global level seem excellent. That prospect has already generated demands for a 'peace dividend', to which both the East and the West have responded by committing themselves to huge cuts in defence forces.¹ The short to medium-term security outlook, is, however, far less sanguine. A large number of brutal regional wars continues, driven by racial, economic and atavistic discontent. Long-standing disputes like those in the Middle East sometimes appear intractable. The probable spread of nuclear weapons remains a cause for concern, although in the immediate future the proliferation of ballistic missiles presents a greater danger.² To add a final ingredient to the complex set of factors facing strategic planners, Martin van Creveld has argued that most future conflicts will be low intensity: that is, they are likely to occur in less developed countries; involve as combatants (at least on one side) irregular forces, guerrillas, terrorists, civilians, or even women and children; and largely exclude high technology.³ Van Creveld further complicated the issue for Australian strategists by subsequently suggesting that Australia may be immune from low-intensity conflict,⁴ a notion which not only contradicted his major thesis, but was also at odds with the emphasis placed on low-level contingencies in the ADF's endorsed strategic guidance, the 1987 Defence White Paper.⁵

The RAAF's early response to the dynamics of change seems to have been one of trying to do more with less, of seeking security cost effectiveness through high-quality training, equipment and personnel; and developing an organisation which can respond to change.⁶ More has been achieved in the past 15 years to place the RAAF on a sound conceptual basis than in the previous 55 years. *The Air Power Manual* and the concept of operations represent landmarks in RAAF and Australian defence thinking. Air power education has been formalised at all levels of training. Through the offices of the APSC and the USAF Air War College the RAAF has, for the first time, a corps of professionally educated air power scholars. And the introduction of the General List and RAAFQ are likely to expand the organisation's intellectual outlook radically.

As far as future operational concepts and force structure planning are concerned, some of the experiences of the 1991 Gulf War appear significant. Several commentators, including Australia's Minister for Defence, cautioned airmen against overreacting to their success in that conflict.⁷ Those warnings were timely, as there are fundamental differences between the geostrategic circumstances in the Middle East and the Asia Pacific Region. Nevertheless, some of the findings of the post-war analysis appear to have enduring and universal relevance.

It is clear that perhaps for the first time in history, air power effectively won a war, a conclusion reached not only by airmen, but also the United States government and a number of independent researchers.⁸ Perhaps the most provocative response to the Gulf War emerged from the former Soviet Union. During the 1980s the Soviet General Staff had developed a concept of global air/space warfare which, its originators believed, could make victory in conventional war possible without either a large ground offensive or the occupation of territory, thus making conventional armies redundant. Some Russian experts consider that the success of the Coalition air forces in the Gulf affirmed that concept.⁹

Many factors contributed to air power's success in the Gulf War, but three were especially important for RAAF doctrine. Those factors were summarised by the Commander of the USAF's Air University, Lieutenant General Charles G. Boyd, in a speech made at an Australian conference shortly after the Gulf War.¹⁰ First, Boyd suggested that the quality versus quantity debate had finally been put to rest. Technology works and, in the Gulf War at least, saved lives on both sides. The exceptionally high availability rates of advanced equipment like the F-117A were complemented by the war-winning effectiveness of such technologies as night vision equipment, space-based surveillance and navigation systems, and electronic warfare measures.¹¹ Second, he suggested that low-observable technology (that is, Stealth) is 'here to stay', a conclusion which has profound implications for defensive strategies, counter-measures and force structuring generally.¹² Finally, Boyd noted the dramatic impact of precision guided munitions in terms of damage, accuracy, the size of a force needed to achieve a particular objective, and the reduction in unintended casualties.

Given that successive official defence planning documents have stressed the importance of high technology in providing a solution to Australia's enduring defence problem of a vast area, small population and small budget,¹³ Boyd's observations are enormously important. No country in Australia's geostrategic circumstances can sensibly ignore the flexibility, versatility, and ability to conduct surveillance and concentrate firepower accurately over long distances demonstrated by the Coalition air forces. Those are qualities relevant to any level of threat assessment.

On the other hand, technology can be a two-edged sword, as the case of the F-117A Stealth fighter demonstrates. Stealth technology currently is dominant over the battlefield and, according to some American sources, is likely to remain so for many years.¹⁴ Indeed, former USAF Chief of Staff General MJ. Dugan has suggested that the combination of Stealth aircraft and stand-off air-to-ground missiles may make major naval surface combatants obsolete.¹⁵ However, with each F-117A costing about 74 million dollars, the question arises: can Australia afford that technology, and can it *not* afford it? That question, in both a specific and general sense, will have to be confronted within the next five or so years, when planning should begin to replace the RAAF's F-111s and F/A-18s with a single type.¹⁶ Stealth technology may also raise an intriguing doctrinal challenge. The place of control of the air as the prime air campaign has been an article of air power faith since the Great War. If aircraft designers continue to develop strike aircraft which are very difficult to track and target, that tenet may have to change. At the least, emphasis would have to be placed on offensive counter-air operations (that is, destroying an enemy's air force on the ground) at the expense of defensive operations (as in the Battle of Britain).

In the light of that possible doctrinal challenge, it is ironic that some commentators believe the Gulf War marked a renaissance in military doctrine.¹⁷ Considerable work on air power doctrine had in fact been underway in a number of countries before the war, as the collapse of the Warsaw Pact had prompted the USAF, the RAF and the air forces of Germany, the Netherlands and Norway actively to examine their basic concepts.¹⁸ While the RAAF did not participate in the war, the similarity of its doctrine to that of the USAF and the RAF suggests it should benefit from any intellectual authority which may follow.¹⁹

The experiences of the Gulf War also indicate that Trenchard's controversial concept from the 1920s, 'substitution', could once again emerge as the most keenly debated topic in defence circles. It is noteworthy that in the initial stages of Operation Desert Shield (which preceded the Gulf War), it was air power which the Coalition first deployed to the Middle East; while, when dissatisfaction arose over Saddam Hussein's apparent refusal to comply with United Nations' directives following Iraq's defeat, it was again air power which the Coalition threatened to send back to the Gulf as the means of enforcing compliance.²⁰ In each crisis, air power was substituted for the old Imperial strategy of gunboat diplomacy.

The concept of substitution could be taken further. As the promised massive defence cuts start to take effect in the next five years, the fight between the Services for resources is likely to be intense. Indeed, in the United States, it has already been described as a 'turf war'.²¹ If the defence debate in Australia is rational, RAAF planners should start from a strong position. The 1987 White Paper has formalised Sir Richard Williams' strategic assessment that the best place to defend Australia is in the air/sea gap to the north, an outlook which favours the use of air power in all its forms. Further, the development of force multipliers such as air-to-air refuelling, PGMs and multi-role aircraft seems certain not only to confer a quantum leap in air force capabilities, but also to broaden the potential to substitute air power for land or sea power. It now seems pointless for a modern air force to draw a distinction between tactical and strategic air power.²² With the growing capacity of air forces to sustain a presence and protect large areas, the next generation of aircraft can be expected to intrude further into traditional naval roles such as long-range patrol, surveillance and escort. An aircraft may not perform those tasks as well as a surface vessel, but it will provide a reasonable capability and relatively high survivability, while not losing any of its unique primary effectiveness. For small nations with constrained budgets, such considerations should assume central importance.

Defence planning has never been easy in Australia, dominated as it has been by foreign powers, political expediency, vested interests, inter-Service rivalry and limited funds. There is no reason to believe the challenge will become any less formidable in the future, given the uncertain international outlook and the pressures to reduce funding and force structures. Whether or not air power assumes the degree of prominence in Australian defence planning that circumstances suggest it should will depend in no small part on the RAAF's ability to articulate its fundamental beliefs. In that context, the fact that the Air Force has done more in the past 15 years to place its activities on a sound conceptual basis than it did in the preceding 55 years is significant. It is also one of the Service's more notable achievements. If great challenges also represent great opportunities, then RAAF thinkers have never been better placed to develop and promote air power strategies and make a constructive and innovative contribution to national security.

NOTES TO CHAPTER SEVEN

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- 21 See 'Planned Defence Overhaul Sparks New Military Turf War', in *Dallas Morning News*, 17-6-90, p 13; and 'Tight Budgets Mean Services Now Openly Fighting for Other's Cash', in *Defense Week*, 2-7-90, pp 12-13.
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