The eagle and the albatross : Australian aerial maritime operations 1921-1971

Author:
Wilson, David Joseph

Publication Date:
2003

DOI:
https://doi.org/10.26190/unsworks/17992

UNIVERSITY COLLEGE

UNIVERSITY OF NEW SOUTH WALES

DEFENCE FORCE ACADEMY

THE EAGLE AND THE ALBATROSS

AUSTRALIAN AERIAL MARITIME OPERATIONS 1921-1971

DAVID JOSEPH WILSON

STUDENT NUMBER 9196522

A THESIS PREPARED IN REQUIREMENT FOR THE DEGREE OF

DOCTOR OF PHILOSOPHY

2003

1 hereby declare that this submission is my own work and to the best of my knowledge it contains no material previously published or written by another person, nor material which is a substantial extent has been accepted for the award of any degree or diploma at UNSW or any other educational institution, except where due acknowledgment is made in the thesis. Any contribution made to the research by others, with whom 1 have worked at UNSW or elsewhere, is explicitly acknowledged in the thesis.

1 also declare that the intellectual content of this thesis is the product of my own work, except to the extent that assistance from others in the project's design and conception or in style, presentation and linguistic expression 'Is acknowledged.

David Wilson

September 2003

ABSTRACT

The aim of this thesis is to examine the relationship between the Royal Australian Air Force (RAAF) and the Royal Australian Navy (RAN) regarding the operation of aircraft from ships of the RAN and from RAAF shore bases. The effects of the separate intellectual development of maritime doctrine in the RAAF and RAN, and the efforts of the two Australian services to transfer theory into practice will be considered in the pre- (and post) World War II period, with due consideration of the experience of the services in both wars. The thesis will also discuss the problems that were faced by the RAAF and RAN to develop mutually acceptable operational procedures to enable the efficient use of aircraft in a maritime setting. The influence and effect on RAAF and RAN doctrine and equipment procurement, as a result of the special relationships that developed between the Air Force and Navy of Australia and Britain will be critically examined. A similar approach to the post war US/Australian relationship, and its effect on the Australian services, will also be critically examined. The thesis being propounded is that the development of a unique Australian maritime policy was retarded due to a combination of the relationship with Britain and the United States, lack of suitable equipment, lack of clear operational concepts in both the RAAF and RAN and the parochial attitude of the most senior commanders of both Services.

The study has been based on Department of Navy, Department of Air and Department of Defence documents held in the National Archives of Australia in Canberra and Melbourne. In addition, relevant documents from the Admiralty and Air Ministry related to the development of naval aviation on RAN vessels during World

War I, the attitude of the RAF toward the deployment of RAAF units to Singapore, and the negotiations that resulted in the procurement of HMA Ships *Sydney* and *Melbourne,* have been perused. Wartime operational records of the RAAF have been examined to obtain data to enable a critical study to be made of the RAAF anti-submarine campaign, torpedo bomber operations and the maritime campaign undertaken from bases in North Western Area during World War II. The influence of the commander of the United States 5th Air Force has also been incorporated in the discussion.

The research uncovered procedural and operational variations between the two Services, the diversion of key elements from Australian command and the priority given to the American line of advance that resulted in Australian operations being given a secondary, supportive, status.

A conclusion reached as a result of this research has been that the development of a unique Australian maritime aerial capability was restricted by the requirement of Britain to deploy flying units to Singapore in 1940. Similarly, the pressure exerted on the RAN by the Admiralty to purchase the Light Fleet Carriers in the late 1940s was more in the interests of the RN and British foreign policy than that of the RAN. Overall, the relationship with the Britain and the United States masked the real weakness in Australia's maritime operations and retarded its development.

ACKNOWLEDGEMENTS

This work could not have been completed without the help and guidance of Professor Peter Dennis and Doctor John Reeves of the Department of History, University College, Australian Defence Force Academy. For there assistance in supplying information and details of available sources, I acknowledge the debt owed to:

Captain (Ret) Noritaka Kitazawa, Military History Department, National Institute for Defence Studies, Tokyo, for his guidance on English language sources on Japanese naval operations during the Second World War; Theodore J. Williams, Emeritus Professor of Engineering and Director Emeritus, Purdure Laboratory for Applied Industrial Course, Purdue University, West Lafayette, Indiana, for access to his own records on the wartime operations of the USAAC 380th Bombardment Group from northern Australia; Ted Goodrich for putting me in contact with Professor Williams and other sources in the United States; David Swift. Gay Hogan, John Pepper, Megan Perry and John Fenton of the National Australian Archives staff in Canberra and Melbourne; the Staff of the Public Record Office, Kew, London and Mr Sebastian Cox of the Air Historical Branch (RAF). Ministry of Defence. Mr J.H. Taylor of Carrington New South Wales, for his personal reminiscences of 71 Squadron operations from Lowood Queensland and Coffs Harbour, New South Wales; Bob Nicholls for his guidance into Admiralty records in the Public Record Office, London; David Stevens and Joe Straczeck of RAN Historical Section, Department of Defence, for advice regarding appropriate naval records. For Section 22 memories I acknowledge Wing Commander Peter Smith (Ret), Harry Lainson, Dick Dakyne, Bob Nash, Ted Dellet, Lindsay Apted and Les Kingross. Mark Clayton and Bob Geale

from the Naval Aviation Museum at Nowra assisted in obtaining data on FAA operations.

Also to my good friends Mike and Wendy Byrne for their hospitality during a study trip to the United Kingdom.

INTRODUCTION

Geography is, and always will be, an important consideration in the defence of Australia. Australia is an island continent, approximately the size of the continental United States of America or of Europe. Therefore the defence of Australia is intrinsically a matter of maritime defence. This study will attempt to analyse differing attitudes towards weapon systems development and operational employment in the broad spectrum of maritime operations - the defence of Australia's maritime traffic and offensive action against enemy maritime forces and land forces dependant on that enemy maritime force. The centre of the argument will be a critical discussion of the crucial role played by both naval and land-based aerial forces in the defence of Australia.

The focus of this thesis is on the development of air power doctrine and concepts of maritime aerial operations within the Royal Australian Air Force (RAAF) and the Royal Australian Navy (RAN). The assertions made by air power theorists and advocates such as Giulio Douhet, Hugh Trenchard and William Mitchell are not directly applicable to the personal intellectual development of the RAAF and RAN officers who participated in the development of maritime air power in Australia. The effect of these international advocates was indirectly institutionalised as both Australian services were influenced by their respective 'mother' organisations, the Royal Air Force (RAF) and Royal Navy (RN), for doctrinal and procedural guidance. Similarly, the approach taken to the naval concept of operations is not the Mahanian view of battlefleet command or the maritime logistical approach of Sir Julian Corbett, but rather a study limited to naval air power within the overall concept of unitary air power, whether sea or land based, commanded by naval or air force professionals, and

the nexus between ground-based and ship-based aircraft, in a unique Australian context.

This study is from the Australian perspective of a nation of a large, relatively isolated, geographic area that has traditionally looked to Europe for its intellectual and cultural inspiration.

The main theme of this investigation is that although the maritime defence of Australia has always been, and remains, paramount, it has suffered due to the inability of the hierarchy of the RAN and the RAAF to translate the coherent Australian maritime policy that was developed during the period 1921-1975 into operational reality in the Australian region. This failure was arguably due to the overwhelming influence of the 'mother' Services in the United Kingdom, and these attitudes affected operational thinking in Australia. However, to understand the relationship between the services, the global strategic influences that were current during the 50-year period of this study must be briefly outlined.

Pre-federation colonial Australia was dependant on Great Britain for her defence, and contributed to British forces operating in the Sudan and as a participant in the system of empire-wide security in South Africa during the Boer War. Although colonies such as New South Wales, Victoria, Queensland and South Australia constructed a limited naval defensive capability, the main defence against the possible incursions by enemy forces was the Royal Navy (RN) vessels of the Australian Squadron. During the last quarter of the nineteenth century, raids by Russian navy units into Australian waters were identified as the most likely threat.[1] By 1905 the increasing strength of the German navy and German imperialism had usurped the dominate position of Russia and France as potential enemies of the Empire. For the

embryonic Australian nation this development, allied to the emergence of Japan as a major power after the decisive victory by Admiral Togo over the Imperial Russian Fleet during the Battle of Tsushima in May, was a matter for anxiety. Although Britain had signed the Anglo-Japanese Alliance in 1902 (and renewed the agreement in 1905), the Australian government did not trust Japanese motives. The 'White Australia' policy, restricting the immigration into Australia of Asian nationals, was a potential cause of friction between Australia and Japan, with her expectation of equal treatment for her citizens.[2] The Australian government assessed the withdrawal of RN units for service in the North Sea to counter German naval strength as an abandonment of the Pacific to the Japanese, and the Anglo-Japanese agreement did little to allay Australian fears.[3] The decision to establish the Royal Australian Navy (RAN) in 1911 was inter alia a reaction to this British eurocentric policy.

At the beginning of the twentieth century, the admiralty argued that the pre-eminence of the RN, which had not been seriously threatened since the Napoleonic Wars a century before, was unchallengeable. In the event of a European war, the RN considered that a Pacific-based power would command the sea for a short period of time, and, as a consequence, would be capable of nuisance raids on naval bases and commercial ports. However, this dominance would be negated by the ultimate supremacy of British naval force.[4] The growth in the naval strength of Germany, Japan and the United States made this a tenuous, and potentially dangerous, concept. In this context the Anglo-Japanese alliance was a sensible treaty, enabling Britain to concentrate its naval resources in Europe. The Alliance, the British asserted, would

---

[1] D. Stevens (ed), *The Royal Australian Navy*, Oxford University Press, Melbourne, 2002, pp 6-11.
[2] ibid; p 14.
[3] J. Mordike, '*We should do this thing quietly'*, Aerospace Centre, Canberra, 2002, p 9; D. Stevens (ed), *The Royal Australian Navy*, p 14.
[4] Mordike, '*We should do this thing quietly'*, p 34.

enable her to have 'some influence on Japan'.[5] The Alliance also presented Japan with Great Power status, and, having aligned with the victorious allies during the First World War, Japan ultimately shared in the spoils of the Versailles Treaty. Some of the strategically important ex-German Pacific colonies were ceded as League of Nations' mandates to Japan.

Although by 1911 the Alliance was in decline, it was in the overall British interest to maintain the status quo in the East. The Alliance was retained, despite the growing distrust of Japanese foreign policy. At the 1907 Colonial Conference the Australian Prime Minister, Alfred Deakin, voiced the opinion that the withdrawal of the RN from the area would result in Australian being 'exposed to a threat from Japan'.[6] Two years later, the Committee of Imperial Defence (CID) resolved that, should the Anglo-Japanese Alliance be terminated, the British fleet in East Asia should be reinforced 'in order to neutralize the danger from a preponderant Japanese fleet in the China Seas'. In 1911, the CID assumed that Japanese hostility could be presupposed should the Alliance be cancelled.[7] In the context of current European political and military developments, the retention of the Anglo-Japanese Alliance gave the numerical and strategic advantage to Britain by concentrating major fleet units in home waters to meet the predominant German threat: a factor that outweighed policy differences and conflicts of interests with Japan.

The potential Japanese threat was a constant theme in British and Australian defence policy in the inter-war era. As early as 1919 the First Sea Lord, Sir Rossly Wemyss, identified Japan as the enemy in any war in the Far East. Admiral Lord Jellicoe was requested by the Australian government to report on Australian defence.

---

[5] Ong Chit Chung, *Operation Matador: Britain's war plans against the Japanese 1918-1941*, Times Academic Press, Singapore, 1997, p 3.

He submitted his report during August 1919 and asserted that Japanese 'conduct in China was disgraceful and her commercial penetration of India was to the disadvantage of Britain'. He predicted that a clash between Japanese and British interests was inevitable, and called for a substantive British naval presence in the Pacific.[8] Certainly it was in the interests of Britain (and Australia) to resume the Anglo-Japanese Alliance, due for renewal in 1921. However the United States of America could not comprehend an alliance between Britain and Japan, and successfully exerted considerable economic pressure - the British fear that its wartime debt to the United States would be immediately foreclosed - to ensure that the Alliance was not renewed. Australian Prime Minister, W.M. Hughes, appreciated the Japanese threat and the value of the Anglo-Japanese Alliance as a counter to the potential power of the Japanese navy. He would accept the termination of the Alliance if the United States would assure Australian security.[9]

The Washington Treaty, signed in February 1922, established a capital-ship ration of 5:5:3 between the United States, Britain and Japan. The effect of this formula presented Japan with a numerical superiority of this class of vessel in the Pacific. The United States Navy (USN) operated on a two-ocean basis, with priority given to the Atlantic, and the RN, which included ships of Dominion navies, had global commitments. The Japanese navy could expect to have numerical superiority in the Pacific Ocean in the event of a global war. Furthermore, the treaty prohibited the construction of naval works east of Singapore and west of Hawaii. The combination

---

[6] Mordike, '*We should do this thing quietly',* p 13.
[7] Ong Chit Chung, *Operation Matador,* pp 3-4.
[8] Ong Chit Chung, *Operation* Matador, p 5; J. McCarthy, *Australia and Imperial Defence 1918-39: A study in air and seapower,* University of Queensland Press, St Lucia, 1976, p 8.
[9] Ong Chit Chung, *Operation Matador*, p 9; McCarthy, *Australia and Imperial Defence*, p 10.

of the Naval Arms Limitation Treaty and the demise of the Anglo-Japanese Alliance made the construction of a naval base at Singapore as a deterrent to Japanese expansion a keystone of British policy in the East. A basic tenet for the construction of the dockyard was as a base to which a battle fleet would deploy to counter any Japanese aggression. Although successive Australian governments accepted the strategic concept behind the 'Singapore Strategy', they were troubled by the lack of certainty on whether the RN would be capable of deploying sufficient force to the area. Peter Sales has argued that the decision to construct two 10 000 ton cruisers for the RAN was due to the lack of a categorical commitment to base major RN units at Singapore. Also linked with the development of the Singapore dockyard was Australia's attempt to seek Anglo-American co-operation to counter the Japanese threat in the Pacific.[10] The 'Singapore Strategy' served, predominantly, British interests. It was, in hindsight, based on a misplaced concept of RN strength and strategic geography. As Ong Chit Chung remarks, Singapore was an 'excellent strategic position for a fleet covering the vital Australia and east Indian routes' that was far enough away from Japan to 'make an overseas attack [on Singapore] a very difficult operation'.[11] The reverse is also true – the Japanese navy could use the vast expanse of the Western Pacific and the mandated islands to negate the influence of a British fleet based at Singapore.

The Japanese threat was a constant theme that effected the development of an Australian maritime policy and the types of aircraft that were required to make that policy a reality. The debate in Australia in the inter-war period concerning the control

---

[10] P.M. Sales, 'The naval mission and Australian security after the First World War', D. Stevens (ed), *Maritime Power in the Twentieth Century: The Australian experience,* Allen & Unwin, Sydney, 1998, pp 40-53.
[11] Ong Chit Chug, *Operation Matador*, p 12.

and operation of ship-board aircraft and shore-based aircraft in maritime operations reflected that being staged in the United Kingdom at the same time. Both the RAAF and RAN based their argument on the 'wisdom' of their British mentors. The Chiefs of the Australian Navy and Air Force largely ignored the bombing trials undertaken by Brigadier General 'Billy' Mitchell, and his advocacy of an independent air force that combined both Army and Navy air arms, in the United States. In 1925 the Colwyn Committee into service estimates in Britain recommended that an independent RAF should be retained. In the United States, the Army and Navy air authorities would not countenance loosing control of an aerial arm dedicated to their respective services' operations. The two services successfully countered Mitchell's far-sighted, if currently impractical, advocacy of the role for an independent air force. President Coolidge appointed a highly-respected banker and lawyer, Dwight W. Morrow, to study all aspects of American aviation. Morrow reported to Coolidge on 30 November 1925, 'repudiating the concept of a unified air force [and] calling for the strengthening of the air components within the existing services'.[12] In the Australian context, the debate was academic. The political climate and economic conditions that prevailed in the decade from 1925 negated any effort to develop a force structure that would enable theory to be put into practice. The ulterior motive behind the small capability provided to the RAN by the RAAF was to prove that the Royal Air Force (RAF) policy of 'substitution' whereby air power could be substituted for naval forces in areas such as Singapore or for land force in the Middle East and the North-west Frontier of India, was pertinent to Australia. Acceptance of this argument added strength to the case for the survival of the RAAF as a separate service.

---

[12] C.G. Reynolds, *Admiral John H. Towers: The Struggle for Naval Air Supremacy,* Naval Institute Press, Annapolis, 1991, p 194.

As will be discussed in the main text, the RAN showed an early interest in the development of naval aviation. RAN ships assigned for operations in the European theatre were in the forefront of development of methods of launching aircraft from battle cruisers and cruisers. A Sopwith Pup was flown from the quarterdeck of HMAS *Australia* on 18 December 1917, and the battle cruiser was also modified to enable aircraft to be launched from a platform constructed over one of the waist turrets. The light cruisers *Melbourne* and *Sydney* both operated single Sopwith Camel fighters. Thus the RAN was at the vanguard of development in the operation of aircraft from battle cruisers and cruisers in the North Sea during the First World War. These operations gave the Navy a myopic view of the use of the aeroplane. The concept that aircraft were to be utilised as reconnaissance vehicles and strike forces, to enable the 'battle line' to contact and defeat the enemy line, while recognising the fragility and operational limitations of current aircraft, became intrinsic to naval strategy. In the eyes of the RN aircraft had three roles: to find the enemy battle line, to attack it to enable the friendly battle line to close with the enemy, and to protect the fleet from enemy reconnaissance and aerial strike forces. Naval doctrine considered the aircraft subservient to the heavy guns of the battle fleet, which remained the crucial weapon of naval power.

It was not until the mid-1930s that the RAAF undertook to formulate its maritime operational procedures. The driving force was Group Captain J.P.J. McCauley. The units involved with army cooperation, navy cooperation and seaward reconnaissance were requested to provide essays on their role, and these essays became the basis for approved policy and procedures. These efforts to formalise operational doctrine coincided with the expansion schemes of the mid-1930s. It was also during this period that the Air Force decided to upgrade and modernise its

equipment. However, the discussion will show that the rate of re-equipment was controlled by the supply of aircraft from British manufacturing sources, causing delays that were, in the long run, not in the interests of the defence of Australia. The point is made that doctrine was in place, but it was impossible to convert it into practice due to the unavailability of suitable aircraft types to undertake the task.

Between the wars there was a complex debate about the traditional power of the battle fleet and the potential of the new aerial weapon. There were two themes that emerged in the inter-war years. Air Forces believed that they could give maritime protection more economically than naval ships, and a significant body of opinion in all navies retained the belief that capital ships were of more intrinsic operational value than aircraft. This situation manifested itself in the RAAF development of a policy of seaborne reconnaissance, naval cooperation and maritime strike. In the RAN aerial doctrine had not developed (despite intermittent attempts, as in the RN, to gain control of land-based maritime reconnaissance assets) beyond the application of the naval aerial arm to a reconnaissance and spotting role for its cruisers.

This study will critically examine three RAAF operational areas and assess them against two criteria - how they met pre-war expectations and their operational effectiveness. At the outset of the Second World War the RAAF was ill-prepared to undertake any role. The maritime defence of Australia may be considered as being three-fold. The three areas to be studied in depth are the defence of trade and anti-submarine operations in Eastern Australia; maritime strike operations by Australian torpedo bomber squadrons; and the maritime campaign aimed at strategic land targets in the Netherlands East Indies, the denial of enemy shipping from adjacent areas and defence of North Western Australia.

The Australian Government allotted the Australian Military Forces to the control of the Supreme Commander South-West Pacific Area, General MacArthur, when he assumed the command in February 1942. Prior to the advent of the American Forces in Australia, trade defensive measures were the responsibility of the RAN, which worked in conjunction with the RAAF. Combined Headquarters were developed in focal areas and this organisation remained in place when the South-West Pacific Sea Frontiers was established under the command of Admiral Royle, Chief of Naval Staff. The cooperation between the two services remained at a relatively high level, although there were complaints regarding operational procedures and intelligence matters that created some animosities. Officers who had RAF Coastal Command experience developed RAAF anti-submarine doctrine and were influential in the operational procedures followed by the RAAF. As will be noted, Coastal Command operations and techniques, because of the combination of the lack of timely intelligence material being supplied to RAAF squadrons, the aircraft being operated, and other operational priorities, were not wholly applicable to the conditions that prevailed in adjacent areas to the Australian seaboard.

With the exception of the two periods of Japanese submarine activity, the anti-submarine campaign was of very low priority. Resources allocated were inadequate. Obsolete aircraft being flown had virtually no attacking capability, and attempts to increase the strike capability of the RAAF prior to the involvement of Japan in the Second World War were subservient to the requirements of the Empire Air Training Scheme. The case study will show that anti-submarine operations and maritime reconnaissance operations were often competing for scarce resources and suffered in this respect in comparison with the forces being employed in the more active areas of the South-West Pacific theatre.

Torpedo bomber operations were part of the Air Force rhetoric since the early 1920s. Even though the Beaufort bomber was selected as the basic RAAF general reconnaissance aircraft it was not until 1941 that the decision was made to arm it with torpedoes. Advice was sought from, and personnel trained by, the RAF in the United Kingdom and Singapore, before a torpedo training and development establishment was created at Nowra in 1942. Even then there was a combination of British operational doctrine and United States Navy expertise. The torpedoes used operationally were American, and United States Navy personnel had an important role in maintaining the weapon. The two squadrons deployed operationally between September 1942 and December 1944 were hampered by torpedo malfunctions and maintenance difficulties. Only 19 operations were flown and the results were not gratifying.

Due to the lack of success, the United States Army Air Force high command showed little confidence in the torpedo-bomber. Australian commanders, too, lost confidence in the torpedo bomber, but the substantial economic investment in the torpedo bomber as a weapon system created pressure on RAAF commanders to produce results. These factors contributed to the demise of the torpedo as an operational weapon in the RAAF. However, they were not isolated issues. The Beaufort aircraft and torpedo weapon system was facing obsolescence when it was introduced into RAAF operations, and the development and improvement in tactics for the delivery of bombs and the introduction of the rocket projectile proved the ‘swan song’ of the torpedo. Its development was also hampered by a lack of understanding of the weapon by RAAF commanders and the changing style of operations in the area. RAAF torpedo operations, armed with torpedoes supplied from United States Navy sources, were based on British experience and procedures.

However, the two squadrons concerned were never dedicated to the torpedo-bombing role. Army support, maritime reconnaissance and convoy escort duties diverted personnel from the torpedo role and made it difficult to maintain expertise in the latter.

The maritime campaign undertaken by the RAAF North Western Area from 1942 is of major importance in the development of an Australian aerial maritime strategy. This campaign cannot be comprehended without a basic understanding of the so-called 'Singapore Strategy'. The pressure placed on the RAAF by the RAF to be physically involved in the defence of Singapore from 1938 had a detrimental effect on the RAAF, due to the deployment of four operational squadron to Singapore and the attitude of the Dutch authorities in the Netherlands East Indies that forced the diversion of forces to secure the line of communication with Singapore and meet commitments in that area. These deployments stretched the minimal resources available in Australia's northwest and Papua New Guinea, to the detriment of the overall operational capability of the RAAF.

After the Japanese raids on Darwin on 19 February 1942, offensive operations from North Western Area and New Guinea against strategic targets in the Netherlands East Indies and Borneo, as well as the aggressive use of aerial and naval power to dominate the sea and deny the use of adjacent waters to enemy shipping, were the important roles for the Allies. The command arrangements associated with Australian control of United States and Dutch forces in North-western Area affected these operations, and the cooperation between the USAAF and RAAF in the development of Electronic Counter-Measures, reconnaissance and strategic aerial mining operations are important facets of the campaign. Examination of the plans to extend the bombing range of strike forces in the light of the need to balance Australian and United States

strategies shows that RAAF operational plans were always subservient to the operational interests of the senior partner. In 1944 operations from North Western Area were designed to protect the flank and divert enemy forces from opposing the American drive to the Philippines, and it will be shown that attempts by the RAAF to put into effect an aggressive maritime campaign from North Western Area suffered as a result.

These three case studies illustrate how the RAAF undertook to convert its pre-war theoretical concepts of maritime operations into reality. To undertake these operations co-operation with the RAN was essential, and there was, on the whole, a comfortable association between the two Services at appropriate levels. However, the development of naval air power in the form of the United States Navy Fast Carrier Groups and the carriers of the RN rendered the cruiser-borne amphibians of the RAN obsolete. RAN commanders assessed that the future of the post-war navy was centred on the availability of an independent, competent, naval aviation service and aircraft carriers. From 1944 the RAN exerted pressure on the Australian Government for the provision of an aircraft carrier as the nucleus for its post-war navy.

At the end of the Second World War, the Soviet Union had control of vast tracts of Eastern Europe, and the communist powers, under the leadership of Mao Tse Tung, appeared to have gained the ascendancy over the forces of Chang Kai-Shek in China. So the ideological battle and strategic battle between capitalistic democracy and Marxist communism became evident even before Winston Churchill proclaimed that an ‘Iron Curtain’ had been drawn across Europe. Whereas the Western Powers demobilised at the end of the Second World War, Soviet military strength had not waned. The American focus was on Europe - in 1946 nine out of 15 US Navy aircraft

carriers were concentrated in the Atlantic.[13] The North Atlantic Treaty Organisation (NATO) of 1949 was established as a counter to the Soviet army threat. However, Lawrence Freedman argues that the Korean War of 1950 made the NATO signatories pessimistic regarding their ability to contain a Soviet threat in Europe.[14] To balance the overwhelming Soviet manpower superiority in Europe, pundits such as Marshal of the RAF Sir John Slessor advocated the atomic bomb as a viable deterrent. Senior RAAF officers, despite Australian government ambivalence, campaigned for an Australian nuclear force in the 1950s.[15]The developments in nuclear strategy and the doctrines of massive retaliation, mutually assured destruction and graduated response to Strategic Arms Limitation Treaties, are outside the main thrust of this dissertation. However, the struggle for a strategic role for the USN and RN had implications for a minor power like Australia. As Grossnick comments, USN aviation faced a crisis in 1949. Carriers, the critics noted, were expensive and vulnerable. Despite doubt as to whether the new strategic bomber, the Convair B-36, was capable of fulfilling its promise, the USAF Strategic Air Command prevailed and the construction of large aircraft carriers, capable of operating long-range attack aircraft, was cancelled.[16] But it was a short-lived delay to USN aspirations for, in 1951, approval was given for the development of a Super-Carrier capable of operating navy aircraft designed to deliver atomic weapons, targeting Soviet naval facilities and other targets in conjunction with Strategic Air Command.[17] This strategic role, with its reliance on large high-performance aircraft and expensive carriers from which they operated, resulted in the

---

[13] ibid, p 519.
[14] L. Freedman, 'The first two generations of nuclear strategists', P. Paret (ed), *Makers of Modern Strategy from Machiavelli to the Nuclear Age,* Princeton University Press, Princeton, 1986, p 744.
[15] A. Stephens, *Power Plus Attitude. Ideas Strategy and Doctrine in the Royal Australian Air Force 1921-1991*, Australian Government Publishing Service, Canberra, 1992, pp 147-50.
[16] R.A Grossnick (ed), *United States Naval Aviation 1910-1995*, Naval History Centre, Department of the Navy, Washington, DC, 1995, p 159.

RAN carriers being utilised in secondary tasks, such as the anti-submarine role. The USN, it will be noted, envisaged the RAN aircraft carriers being useful in low-intensity operations in South East Asia.

The overarching nuclear capability of the Great Powers placed regional powers like Australia in an invidious position. The reality of world politics and the democratic powers' policy of 'containment' led to actions such as the United Nations 'Police Action' in Korea, the Malayan Emergency and the Vietnam War, all fought with conventional weapons, but politically restrained due to the nuclear umbrella held by the communist and democratic powers. Australian policy became centred on alliances with regional and the super powers such as the Australian New Zealand United States Treaty (ANZUS) of 1951, the South East Asia Treaty Organisation (SEATO) of 1953, for example. Australia actively supported these regional arrangements, and deployed military force to Malay, Thailand and South Vietnam to strengthen its her position in relation to Britain and the United States. The withdrawal of British power from the Far East, culminated in the termination of the Anglo-Malayan Defence Arrangement in 1971, coupled with President Nixon's Guam Doctrine that indicated 'the limits of American political will', ensured that Australia had to become more self-sufficient in defence matters.[18]

The final chapters examine this development. Australian naval aviation and the demise of the RAAF's maritime strike force immediately after the war is considered in the context of the concept of nuclear deterrence, as well as the role of the United States and United Kingdom in South East Asia and Australia's relationship with these nations. This section will discuss the factors affecting Australia's political

---

[17]Reynolds, *Admiral John H. Towers,* p 555.
[18] Stevens (ed), *The Royal Australian Navy,* p 212.

and strategic situation, how that affected the choice of equipment and the development of an RAAF and RAN anti-submarine capability to the detriment of a useful anti-ship strike capacity. It is argued that the RAN aerial operations lacked strategic direction and that the RAAF, for the two decades after the cessation of hostilities, forgot the lessons and the experience gained during its wartime campaigns.

Although outside the time frame of the major study, developments in the field of maritime aviation in the RAAF and RAN since 1975 will be briefly discussed to further the continuing debate on the subject.

1

THE STRUGGLE FOR CONTROL OF THE AERIAL MARITIME ASSET

The value of military aircraft during the First World War was uncontestable. Aircraft had proved themselves operationally in the reconnaissance, air-to-air fighting and ground attack functions as well as establishing the genesis of a future strategic role. Despite these facts discussion between Australian Naval and Army authorities in the period 1918-1920 did not lead to a consensus between them on the practicalities of the use of military aircraft or the development of air power for the defence of Australia. Both service's outlook was based on the experience gained during the First World War in Europe and the interaction between the two in Australia.

The Australian Army began recruiting for the Australian Flying Corps on 1 January 1914 and commenced flying at the Central Flying School, Point Cook, Victoria, on 1 March. The Royal Australian Navy showed a parallel interest in aviation. On 4 June 1913 Commander W.H.C.S. Thring and Messrs H.A. Petre and E. Harrison had already inspected sites at Altona Bay to find a suitable site for aviation purposes.[1] Two days later the First Naval Member, Rear Admiral W.R. Creswell, suggested that the Naval Representative in London, Captain F.F. Haworth-Booth, be requested to obtain advice from the Admiralty on the manpower, training, stores and equipment requirements to establish three naval aviation units in Australia. A basic premise of Creswell's plan was that the proposed military school would be utilised to train both naval and military aviators - a premise that was not fulfilled.[2] Haworth-

[1] Naval Secretary to Secretary, Department of Defence, 6 June 1913, 14/0223, CRS MP1049/1/0, AA (V).
[2] Minute, First Naval Member to Naval Secretary, 6 June 1913, ibid.

Booth sought the expert advice of the Admiralty's Director of the Air Department, Captain Sueter, and the Commanding Officer of the RN base at Eastchurch and HMS *Hermes,* 'the sea going vessel attached to the Air Service …', Captain Vivian. The resultant seven page report, which observed that at that stage the Royal Naval Air Service (RNAS) must 'primarily be considered as an observation service whose function is, at the present time, to work in conjunction with the Patrol Service (sic)', was sent to the Navy Board on 7 October 1913.[3] On 4 November the Admiralty reiterating the informal advice from Haworth-Booth to the High Commissioner for Australia. The Admiralty recommendations were based on three machines and a 'small base'. Personnel requirements would total four officers and 22 other ranks. For training purposes the Admiralty envisaged a combined training school of half Naval and half Military personnel. The aim was for trainees to undertake six months' elementary military training at a combined Naval and Military establishment after which 'Naval personnel may go to learn "Hydro-aeroplane work" and the Military personnel to military work'. The Admiralty's unequivocal statement regarding the organisation was that:

> it is anticipated that considerable difficulty would occur in the higher commands if the aircraft are not under the orders and control of Naval Commands. Also difficulties with regard to details of pay, allowances, victualling etc occur when air service rations are embarked in ships unless these are based in principle on Naval lines.
>
> The Naval personnel should therefore be administered on entirely naval lines as a branch of the Navy.[4]

[3] Naval Representative London to Naval Secretary, 7 October 1913, ibid.
[4] Admiralty M01454/13 to Under Secretary of State, Colonial Office, 4 November 1913, 1913/361, CRS A11804/1, AA; 2311/1/136, CRS MP1185/3/0, AA (V).

This view was to result in many future administrative problems and much bitterness between the RAAF and RAN.

On 10 March 1914 Creswell proposed to recommend to the Navy Board meeting to be held on the following day that provision be made in the 1914-15 Budget Estimates for the establishment of a Naval Air Service. He based his recommendation on the potential of the aerial arm, arguing that:

> there is little doubt that in the near future these will be able to be used from and return to ships at sea. They form admirable scouts in clear atmosphere and are most effective "eyes" for, and against, submarines.

The latter scenario was that envisaged by Creswell, and he further suggested that the submarine depot ship being procured should be 'fitted to carry a small number of seaplanes and act as a depot for the first unit of our air service'.[5]

The Navy Board advised Captain Haworth-Booth on 22 June that steps had been taken to provide funding in the 1914-15 budget to begin training of the personnel required to man the proposed bases.[6] The outbreak of war in August 1914 'thwarted' this plan.[7] Attempts made to lay the foundation for a post-war Naval Air Service met with frustration; the recommendation that elementary training of both Naval and Military airmen should take place at a single venue proving impractical due to Army recalcitrance. An Admiralty request that the RAN select candidates and supply those admitted with preliminary training in Australia, prior to serving with the Royal Naval Aerial Service (RNAS), met with Navy Board approval. The Board identified these Australian officers as a potential nucleus of a postwar Naval Air Arm

[5] Minute, Rear Admiral Creswell, 10 March 1913, 14/0223, CRS MP1049/1/0, AA (V).
[6] Navy Board to Naval Representative, London, 22 June 1914, ibid.
[7] R. Jones, *Seagulls Cruisers and Catapults,* Pelorus Publications, Hobart, 1989, p 2.

and sought the advice of the 'military to what extent they can assist us …' Although Creswell had informal discussion with the staff officer responsible for aviation matters at Army Headquarters, Lieutenant Colonel E.H. Reynolds, who appeared most willing to assist and 'stated that it might be possible to take some Naval officers in February [1916]', he considered that a formal approach should be made to the Minister for Defence on the subject.[8] Whether such action was taken is problematic for the situation did not improve. On 22 February 1916 Creswell:

> … noted that although there appeared to be no doubt that the Aviation School at Point Cook would be a combined military and naval establishment the naval part has been eliminated from existence. … As the Point Cook partnership has not been carried out I suggest that Flinders Naval base, possessing so many favourable conditions for a Marine Aviation School, should be adopted … [9]

Although consideration of the future of military aviation in Australia remained in abeyance until 1918, operations over Europe were to influence the thinking of both Army and Navy advocates and made a consensus between the two services impossible. The vessels of the Royal Australian Navy had been placed under the control of the British Admiralty at the outbreak of war. HMAS *Australia* served with the Battle Cruiser Fleet based at Rosyth and was involved in aircraft flying off trials as follows:

Date	Aircraft Type	Comment
17 December 1917	Sopwith Pup	Ship at 10 knots
30 January 1918	Sopwith Pup	Ship at anchor
6 February 1918	Sopwith Camel	Ship at 15 knots
4 April 1918	Sopwith 1-1/2 Strutter	Ship at 22 knots spotting
3 May 1918	Sopwith 1-1/2 Strutter	Ship at 15 knots spotting
4 May 1918	Sopwith 1-1/2 Strutter	Ship at 12 knots

[8] Minute, Rear Admiral W.C. Creswell, 24 December 1915, 1915/9664, CRS MP1049/14/0, AA (V).
[9] Minute, First Naval Member, 22 February 1916, 1916/1486, CRS MP1049/14/0, AA (V).

4 May 1918 Sopwith 1-1/2 Strutter Ship at 24 knots[10]

The light cruisers *Sydney* and *Melbourne* also served with the Grand Fleet in the North Sea. The former vessel operated Sopwith Camel aircraft on 8 and 17 December 1917, 27 February, 16, 20 and 23 March and 4 April 1918.[11] From 2 April 1917 the captain of HMAS *Sydney* was Captain (later Rear Admiral) J.S. Dumaresq, who, as a result of a contact with Zeppelin L43 on 4 May, became an advocate of the further development of naval aviation. On this date *Sydney* was in the company of HMS *Dublin* and four destroyers on a sweep between the mouths of the Forth and Humber rivers. At 10.25 Zeppelin L43 was sighted. After a series of manoeuvres the cruiser attacked the Zeppelin with its high level guns and the airship retaliated by dropping bombs on the ships; neither side could claim any successes.[12] Dumaresq, being 'a man of exceptional ability and imagination - an originator, therefore, of novel devices and tactical ideas'[13] - must have been delighted when HMAS *Sydney* was selected to be fitted with a launching ramp over the forward turret in late 1917.[14] The value of this facility was partially vindicated on 1 June 1918. HMAS *Sydney* was participating in an anti-minelaying sweep off the Heliogoland Bight when a German aircraft bombed the force. HMAS *Sydney* and HMAS *Melbourne* each embarked

---

[10] Table, *Particulars of aeroplane flights from the decks of battlecruisers and light cruisers,* ND, 8529/181, ADM1, PRO.
[11] ibid.
[12] A.W. Jose, *The Royal Australian Navy 1914-1918*, 1928, reprinted, University of Queensland Press in association with the Australian War Memorial, St Lucia, 1987, pp 295-97, 589-91; R. Gillett, *Wings Across the Sea,* Aerospace Publications, Canberra, 1988, p 10; R. Jones, *Seagulls, Cruisers and Catapults,* p 4.
[13] Jose, *The Royal Australian Navy 1914-1918*, p 294.
[14] Australian Naval Aviation Museum, *Flying Stations: A Story of Australian Naval Aviation,* Allen & Unwin, Sydney, 1998, p 9.

single Camel fighters that were launched to intercept. Flight Lieutenant L.B. Gibson from HMAS *Melbourne* lost sight of the target in broken cloud; Flight Lieutenant A.C. Sharwood, who, after bursts of machine gun fire, forced the enemy aircraft into a spinning nosedive, flew HMAS Sydney's Camel.[15] Although the result of this combat was inconclusive, the hypothesis that ship-borne aircraft could provide an aerial defence for a fleet gained weight.

The Army, through the four operational squadrons of the Australian Flying Corps, gained active service over the Western Front and Palestine. In additional, four training squadrons were based in the United Kingdom.[16] In July 1918 the tactical cooperation between infantry, the tank, artillery and aircraft in a set-piece battle reached its wartime peak of sophistication in the Battle of Hamel. The rudiments of a strategic air force was in place with the establishment of the Independent Air Force to strike at German cities and industry. Sir Hugh Trenchard, who, it will be seen, was to influence the attitude of RAAF leaders such as Wing Commander Richard Williams, commanded this force.

From an aerial maritime perspective, an insignificant German naval incursion into Australian waters gave the Australian Flying Corps its first experience in

---

[15] Jose, *The Royal Australian Navy 1914-1918*, p 305; *Flying Stations: A Story of Australian Naval Aviation,* pp 9-11.

[16] A representative bibliography of works on the activities of the Australian Flying Corps is F.M. Cutlack, *The Australian Flying Corps*, 1923, reprinted, University of Queensland Press in Association with the Australian War Memorial, St Lucia, 1984; H.N. Wrigley, *The Battle Below: Being the History of No. 3 Squadron AFC*, Errol G. Knox, Sydney, 1935; A.H. Cobby, *High Adventure*, Robertson and Mullens, Melbourne 1942; T.W. White, *Guests of the Unspeakable: An Australian Airman's Escape from Turkey in the First World War,* Little Hills Press, Crows Nest, 1990; E.J. Richards, *Australian Airmen: History of the 4th Squadron Australian Flying Corps*, Melbourne, nd; D. Goodland & A. Vaughan, *ANZACS over England: The Australian Flying Corps in Gloucestershire 1918-1919,* Alan Sutton, Dover, 1992.

maritime reconnaissance duty. During July 1917 the coastal freighter SS *Cumberland* was sunk off Gabo Island by a mine that had been laid by the German commerce raider *Wolf.* Although the presence of the minefield was confirmed at the time, the incursion of the raider was not known until the announcement of the return of the ship to Germany during March 1918. The subsequent 'alarm bordering on hysteria' evoked by local press reporting of the incident resulted in Defence authorities instituting a programme of aerial reconnaissance over the southeastern sea-lanes. Two detachments were established, one consisted of twenty men and a FE2b aircraft) under the command of Captain F.H. McNamara VC. Operations commenced on 21 April and continued until 10 May.[17] Although an exercise in futility, these deployments did give a basis of experience in the operating and maintenance of aircraft in a small isolated detachment that was to be repeated on a larger scale three decades later.

Thus the Army and Navy were to approach the operation of aircraft from a perspective based on their respective wartime experience. The Army bias toward reconnaissance, interdiction and close air support for the ground forces could not be reconciled with the Navy advocacy of ship-borne aircraft giving direct fleet support. These understandable peccadilloes were, as noted below, a serious impediment to the premise that an independent air force would be a viable organisation. A future issue was the maritime defensive posture for heavy bombers advocated by Brigadier General William Mitchell of the US Army in the 1920s, the strategic bombing

[17] C.D. Coulthard-Clark, *McNamara VC: A Hero's Dilemma,* Air Power Studies Centre, Canberra, 1997, pp 54-57.

theories of Giulio Douhet and Sir Hugh Trenchard, and the later development of air power theory by Mitchell along similar lines, that threatened the very existence of the Navy as the primary strategic force.

On 26 June 1918 the Council of Defence considered three papers: a *Programe for the inauguration of a Naval Air Service* prepared by Wing Commander H. Maguire, the Air Services Adviser to the Naval Board, and two more (*Air Service in Australian Defence* and *Outline of policy suggested for the Military Air Force of Australia)* prepared by Major General J.G. Legge, Chief of the General Staff. An expert committee was established under the chairmanship of George Swinburne, Chairman, Board of Business Administration, Department of Defence, to establish to what extent the Naval and Military Services could co-operate and the estimated cost, to enable the 'Council to know to what extent the Government would be committed' if any of the suggested schemes were adopted. Given the make-up of the Committee (Rear Admiral W.R Creswell, First Naval Member, Captain W.H.C.S. Thring RN, Director of Naval Ordnance, Wing Commander H. Maguire, RNAS Air Services Adviser, Major General Legge and Major E. Harrison, Officer Commanding Central Flying School) it is not surprising that the Cabinet referred the matter to another sub-committee for advice.[18]

This Committee was also chaired by Swinburne and consisted of Legge and Maguire with the addition of the Second Naval Member, Captain H.L. Cochrane RN, and Major L.Y.K. Murray RAF of the Central Flying School. The Minister for Defence had instructed Swinburne and his committee to consider how £3 million

should be allocated between the Navy and Army for expenditure on military aviation for the three-year period ending on 30 June 1921. The minutes of the meeting held on 2 October illustrate the parochialism of the Services. Both Legge and Cochrane complained that a half share of the funding would only initiate their respective schemes. Any mutual use of facilities was denounced by both, yet clearly there would be duplication of facilities and administrative effort if this were not agreed to. Maguire suggested that

> the question be again carefully gone into before a definite decision is arrived at and the figures and remarks for spending so much money [be] put down in black and white. Showing exactly what the Naval and Military air stations, aerodromes and equipment will consist of the number of aeroplanes and the cost and then consider how much we can get if administered by a separate ministry.

Swinburne queried whether Maguire contemplated expending the funds under 'one control'. Legge's remarked that this action was a 'waste of time. Whatever happens we are not getting all the money we want' indicates the uncompromising attitude of the Services.[19]

Swinburne made his recommendations on the sub-committee's considerations on 18 November and these would have heartened the naval aviation pundits. The Chairman recommended that 'after close inquiry' a Naval Aviation Service be established for training and that the establishment of a complete service should be 'deferred until the appointment of the new Naval Board'. Swinburne also was of the opinion that the administration of the whole air service should be under a single

---

[18] Acting Secretary, Council of Defence to Secretary, Department of Defence, 7 November 1918, 1821/1/41, CRS B197/0, AA (V).
[19] Sub-committee Council of Defence re Naval and Military Aviation, 2 November 1918, 1821/1/49, CRS B197/0, AA (V).

administration and authority.[20] As proof of the acceptance in principle of the latter recommendation, the Director of the Canadian Naval Service was advised on 20 September 1919, in reply to his request for information on Australian aviation policy, that 'it is intended to create a combined Australian Air Force which will unify the aerial activities of both those Services [Army and Navy], secure economy in administration, facilitate all round training of the members of the Force and focus the results of the experience gained in the development of the Service … '[21]

This ideal was not a foregone conclusion and had to be given substance. Following the instructions of the Minister for Defence, Senator George Pearce, an air board was established to recommend an Australian air policy. The Board initially met on 31 January 1920. The Army representatives were Brigadier General T.A. Blamey, Deputy Chief of the General Staff, and Lieutenant Colonel Richard Williams, Director of Air Services. Captain W. Nunn RN and Lieutenant Colonel S.J. Goble represented the Navy. The report of the Board was submitted to Pearce on 7 February. The members assumed that aircraft would be 'confined to auxiliary work for the Army and Navy' and identified three main naval tasks: attacking enemy ships using torpedo-carrying aircraft, patrol and reconnaissance work and scouting from, and protecting, 'war vessels'. To these requirements they added fighting squadrons to protect 'special points'. The Board recommended the establishment of a naval air arm of one squadron of fighting aeroplanes, one squadron of torpedo-carrying aeroplanes,

[20] Report of the Sub-committee … re Naval and Military Aviation, 18 November 1918, 1821/1/41, CRS B197/0, AA (V).
[21] Letter to Director, Canadian Naval Service, Ottawa, 20 September 1919, 1919.0107, CRS MP1049/1/0, AA (V).

one squadron of 'ship's aeroplanes or seaplanes' and 12 1/2 squadrons of flying boats (one to meet training requirements) over a six-year period. To this total figure would be added 50 percent 'spares'. [22] These recommendations were identical to that made by Admiral Lord Jellicoe during his 1919 visit to Australia to advise the government on naval matters.

The Board prevaricated on the tendentious problem of the control of an air corps. In its report, the Air Board did not foresee an independent role for the Australian Air Corps, and therefore could not visualise the creation of an independent service. Argument on command and control was parochial. The 'definite policy of the Naval Board' was that the 'Senior Officer, Director or Chief of Air Force' appointment be made initially to a 'Naval Flying Officer'. Blamey and Williams found the presumption totally unacceptable. The Department of Defence's view was that the officer should be a suitably qualified Australian of either Service and the Department of the Navy argued for joint control by officers of equal rank from each of the Services. Once experience in training and operations had been gained, and the 'Air Service ... fully established, practically independent of either arm as far as administration and training is concerned', no objection would be raised to an Air Officer with experience in both military and naval matters being appointed as the Head of the Air Service.[23] The Board recommended that, to properly coordinate naval

---

[22] *Report on the Air Defence of Australia by The Air Board 1920,* RAAF Historical Records. (hereafter RHR).

[23] ibid. p 9, see also Sir R. Williams, *These Are Facts: The Autobiography of Sir Richard Williams, KBE, CB, DSO,* The Australian War Memorial and the Australian Government Publishing Service, Canberra, 1977, p 127; A. Stephens, *Power Plus Attitude: Ideas, Strategy and Doctrine in the Royal Australian Air Force 1921-1991,* p 15.

and military requirements, the controlling body of the 'Australian Air Forces' should be representative of both military and naval forces. [24] It is significant that the reference to the Air Force is plural.

The inaugural deployment of ship-borne maritime aviation in Australia was not a success. In June 1920 Commodore Dumaresq suggested that an aircraft would be embarked aboard the battlecruiser HMAS *Australia* during its forthcoming Island Cruise. The only available aircraft was an Avro 504 training aircraft fitted with floats. When giving his approval to the deployment, Goble agreed that the aircraft was not suitable for permanent shipboard deployment. The aircraft flew twice: when *Australia* escorted HMS *Renown* on the visit by the Prince of Wales to Hobart and Sydney.

The responsibilities of the Australian Air Corps members who flew and maintained the aircraft on the *Australia* caused interservice administrative problems. Williams, the Director of Army Air Services, directed Captain H.F. De La Rue, the contingent commander, to submit detailed fortnightly reports direct to him. Naval authorities construed this request as a 'flagrant interference by the Air Corps'. Significantly, when RAAF aircrew and maintenance personnel embarked aboard RAN cruisers in the late 1930's, reports of flying activity were addressed to the commander of the ship in which the RAAF members served, confirming that operational control was vested in the naval commander while the aircraft was embarked.

In September, after the paying off the Australian flagship, the aircraft was transferred to the light cruiser HMAS *Melbourne,* which departed from Sydney on 29

[24] *Report on the Air Defence of Australia by the Air Board 1920,* p 8.

September bound for New Guinea. Unsuccessful trials of the floatplane were conducted en route and the aircraft was disembarked at Rabaul for an engine change, with the hope that this would enable the Avro to undertake a reconnaissance of the area. When HMAS *Melbourne* returned to the south, the aircraft had still not flown. The aircraft had proved to be seriously underpowered for tropical operations, and, after a combination of five months open air storage and sea spray, the Avro's structure had deteriorated. Dumaresq conceded that the aircraft had proved totally unsuitable for the task expected of it, but was still adamant that RAN cruisers required reconnaissance seaplanes.[25] The Air Force also gained experience, and the Air Board recommended to the Air Council on 1 March 1921 that 'no further aircraft be allotted to HMA Fleet until a service type designed for the work is in possession of the Air Force'.[26]

This condition was soon met. During 1920, the RAN ordered six Fairey IIID float seaplanes. These aircraft, capable of being catapult launched from Royal Navy cruisers, were purpose designed and it is ironic that they were not used in that role in Australian service. However, the type was used for a flight that illustrated the potential of air power for the practical aerial defence of Australia. On 19 May 1924 the Acting Chief of the Air Staff, Wing Commander S.J. Goble, and Flying Officer Ivor McIntyre landed back at Point Cook after a 44-day aerial circumnavigation of Australia. The stated aims of the flight included the reconnoitring of the 'east coast [of Australia] with a view of organising a seagoing aircraft defence route to Thursday

[25] Jones, *Seagulls and Cruisers,* pp 16-18;Gillett, *Wings Across the Sea*, p 20; C.D. Coulthard-Clark, *The Third Brother,* Allen & Unwin, Sydney, 1991, p 11, discusses the 'reporting' problem.
[26] Air Board Agenda No. 32, 1 March 1921, RHR.

Island; examine the coastline and harbours for possible permanent bases for seaplanes, [and] ascertain the suitability of the Fairey IIID to cooperate with the Navy in the Great Barrier Reef Survey'.[27]

After being inactive for some months, HMAS *Australia* was scuttled off Sydney Heads in 1924 as a result of the agreement between the British Empire, United States of America, Japan, France and Italy at the Washington Conference to limit their strength in capital ships over 10,000 tons, thus depriving the RAN of a vessel capable of operating the seaplane.[28] The Naval Staff had considered its position regarding the operational role of aircraft in the Service in mid-1923. This review was made as a result of an initiative by the Secretary of the Air Board who wrote to his Naval counterpart on 2 May 1923 seeking answers to three questions: the number and types of units which would be required to operate from shore bases on naval co-operation and patrol duties; the number and type of units required for sea duty; and possible locations of such units.[29] Wing Commander Goble, the acting Chief of Air Staff, was invited to attend a meeting held in Navy Office on 17 May 1923 to discuss the matter. At this meeting Goble explained that Army had also been approached and that the information was required to enable the Air Force to draw up the Air War Book and to enable a statement of aircraft requirements to 'constitute a reasonably effective air force for Australia' to be drafted.[30] The meeting reconvened on the

---

[27]Coulthard-Clark, *The Third Brother*, p 385; *Report on Round Australia Seaplane Flight 1924,* RHR.
[28] Jose, *The Royal Australian Navy 1914-1918,* p 284; P. Dennis, J. Grey, E. Morris, R. Prior and J. Connor, *The Oxford Companion to Australian Military History,* Oxford University Press, Melbourne, 1995, p 214.
[29] Secretary, Air Board, to Secretary, Naval Board, 2 May 1923, 56/1/186, CRS A705/1, AA.
[30] Extract of Minutes of Meeting of Naval Staff, held at Navy Office, Melbourne, on Thursday 17/5/23, 1821/2/78, CRS MP1049/5, AA (V).

following day but no record of the discussion is on file. The Navy responded officially a month later with a requirement for three squadrons of Fairey seaplanes, one each to be based at Albany in Western Australia, Brisbane Waters and islands to the North or North East of Australia. In the latter case the seaplanes were to be complemented by a squadron of Flying Boats. The possibility of basing aircraft with a torpedo-carrying capability at any of these locations was 'to receive further consideration'. At this stage Air Force Headquarters were advised that it was envisaged that RAN ships would not be fitted to carry aircraft. [31]

These bases were planning projections. In reality, the RAAF's maritime force of six Fairey IIID aircraft was based at Point Cook, Victoria, in 1924. Measures were in place to remedy this situation. On 2 October 1924 the Secretary of the Air Board forwarded the recommendation of the Board to the Minister for Defence that a base be procured to enable a seaplane flight to be based at Rushcutter's Bay, Sydney. Basing the navy cooperation flight at Rushcutter's Bay would bring the unit 'within visual signalling distance of Garden Island' and possessed many 'favourable features for co-operating with the Fleet'.[32] The CNS and Naval Member of the Air Council, Rear Admiral Percival Hall-Thompson, concurred with the proposal to which the Minister gave his approval on 16 December 1924. Wing Commander Goble had submitted the original proposal in his role as acting Chief of the Air Staff. Williams, on his return from RAF Staff College, resumed the position as CAS and took action to reverse this decision.

---

[31] Secretary, Naval Board, to Secretary Air Board, 6 June 1923, 56/1/186, CRS A705/1, AA; 1821/2/78, CRS MP1049/5, AA (V).
[32] Air Board Agenda No. 558, 8 October 1924, RHR.

Williams argued that 'the first premise for an air force is the power of rapid concentration' and that this required the preparation of air routes during times of peace. Alternate routes would have to be developed for seaplanes *vis-a-vis* their landplane equivalents. Seaplane bases would require sheltered waters and maintenance facilities on a vulnerable coastline, whereas an amphibian could be based at an existing inland (and therefore less vulnerable) RAAF Base. He suggested the base at Richmond which was 'still handy to the Naval Base and can carry out its training near Sydney'.[33] The Chief of the Air Staff prevailed. The decision to base floatplanes at Rushcutter's Bay was reversed and the funds allocated to the project directed to the improvement of facilities at the RAAF base at Richmond. What were Williams' motives? Possibly he considered the proposal, as a wedge to prise the control of naval aviation away from the Air Force and thus weaken the latter's competitive position with the Army and Navy in bidding for funding.

The RAAF had retained control of naval aviation by default. However, this arrangement would soon come under threat; indeed the whole future of the Air Force as an individual entity may be linked with a series of events that commenced with the decision to construct two 10,000-ton cruisers, HMAS *Australia* and HMAS *Canberra,* announced by Prime Minister Bruce in parliament on 27 June 1924.[34] The place of construction of these vessels was a matter of considerable debate in Australia. To build them overseas would place the jobs of several hundred artisans and the facilities at the Cockatoo Island Dockyard in Sydney in jeopardy. For reasons

[33] Air Council Agenda No. 128, 2 April 1925, RHR.
[34] Hansard, House of Representatives, 27 June 1924, p 1708.

of economy, and in the face of a considerable body of opinion that at least one of the cruisers should be constructed in Australia, the decision was made for both cruisers to be built in British shipyards. To appease Australian dockyard interests the pronouncement was made to construct a seaplane carrier in Australia, although this lacked any strategic basis. Anthony Wright puts this in perspective:

> Finally, not only was there no seaplane carrier in the five-year programme placed before Parliament by the Treasurer on 31 July 1924, but also provision was made for a land-based reconnaissance, patrol and gunnery-spotting capability: a RAAF float seaplane flight of about five aircraft to be established by the end of the financial year at Sydney for naval co-operation.
> Clearly then, the acquisition of a seaplane carrier had become "urgently necessary" by 12 September 1924 not for the naval defence of Australia, but for political reasons ... [35]

Williams claims that he became aware of the 6 May 1925 decision that HMAS *Albatross* would be constructed at the Cockatoo Island Dockyard when he read a report of the letting of the contract in the daily press early in 1926. The Minister in two words answered his question as to who would supply the aircraft to be borne by the carrier: 'You will.'[36] In fact Williams was aware of this requirement well in advance. In his submission to the Air Council regarding the proposal to establish a seaplane base at Rushcutter's Bay dated 2 April 1925 he cites the fact that the 'Lords Commissioners of the Admiralty have recommended the Supermarine [Seagull III] amphibian for use in the Seaplane carrier' and that the adoption of the type would enable crews to be trained and ready to go aboard the carrier.[37] The aircraft had been

---

[35] A. Wright, *Australian Carrier Decisions: The Acquisition of HMA Ships Albatross, Sydney and Melbourne,* Royal Australian Navy Maritime Studies Program, Canberra, 1998, p 34.
[36] Williams, *These Are Facts,* p 176.
[37] Air Council Agenda No. 128, 2 April 1925, RHR.

ordered in 1925, and the first six were delivered to the RAAF in April 1926, the month in which the construction of HMAS *Albatross* commenced.[38] For the members of the Naval Board, the time was ripe for another bid for the integration of ship-borne aircraft and their crews as members of the Navy.

The process had commenced on 10 June 1924 when the Secretary, Naval Board, wrote to his Air Force opposite number forwarding a copy of Admiralty Fleet Order 1058/24. This document established the training of British Naval officers serving in the RAF Fleet Air Arm. Under the provisions of this order, the RN could provide up to 70 per cent of the officers serving in the Fleet Air Arm. These officers would serve for, including training, a total of four years, followed by a two-year period of RN general service training. A stipulated number (505), after this phase of their personal development, would continue in RAF service training. Of these, it was expected that 60 per cent would serve for another two years with the RAF. As a final phase of his career development, the officer would be required to complete another period of RN general service training as a prerequisite to advancement in the navy.[39]

A conference was convened between Captain Henry P. Cayley and Squadron Leader W.H. Anderson, the respective 2nd Members of the Naval and Air Boards, on 23 October 1924. The two officers provisionally agreed to vary the procedures to be followed in the Australian context. After training with the RAAF and RAN for a four-year period, the navy officer would then proceed on exchange posting to the RN for

---

[38] S. Wilson, *Military Aircraft of Australia,* Aerospace Publications, Canberra, 1994, p 197.
[39] Secretary, Naval Board, to Secretary, Air Board, 10 June 1924, 4/10/64, CRS A705/1, AA; C.J.M. Goulter, *A Forgotten Offensive: Royal Air Force Coastal Command's Anti-Shipping Campaign, 1940-1945,* Frank Cass, London, 1995, p 51.

twelve months 'so that the Australian Fleet Air Arm [would] get the benefit of their experience, while it is fresh and while it is up-to-date'.[40] The discussion between Anderson and Cayley dealt with these personnel matters only. However, when the Naval Board sought Air Board endorsement of the procedures agreed to by Cayley and Anderson, the covering letter was couched in wider terms. The letter:

> ... refers to discussion between the Navy and Air Board in connection with the *establishment of an Australian Fleet Air Arm* and the commencement of the Long Air Course in January 1925, I am directed by the Naval Board to forward for the information of the Air Board a draft Naval Order which it is proposed to issue to the Fleet laying down *the conditions under which naval officers will be serving while attached to the RAAF.*[41] [Emphasis added.]

On 17 December 1924 Mr P. Coleman, the Secretary to the Air Board advised the Naval Board that 'the Air Board concur with the terms and conditions specified in the draft naval order.'[42] The RAAF interpreted the proposed order as establishing the manning responsibilities of each service in the British model. The ambiguity of the covering minute and the context of the draft naval order resulted in the Royal Australian Navy receiving Air Board consent to the raising of a Fleet Air Arm by bureaucratic sleight of hand. The terms and conditions to which the Air Force agreed related to the matter of personnel training, but not to the concept of a separate naval air service.

No reference can be found in official Air Board records. Ministerial approval was obtained in January 1925.[43] Williams was attending the RAF staff college at the

---

[40] Document 23 October 1924, 4/10/65, CRS A705/1, AA.
[41] Secretary, Navy Board, to Secretary, Air Board, 12 December 1924, ibid.
[42] Secretary, Air Board to Secretary, Navy Board, 17 December 1924, ibid.
[43] *Air Staff Notes on Air Co-operation with the Royal Australian Navy,* 2 September 1926, RHR.

time and makes no mention of this important development in his memoirs. However, his attitude toward Air Force/Navy matters is quaintly summed up in his autobiography as follows:

> The Navy came to the Defence Department in 1921, thus putting all three Services under one Minister, but there was no particular subsequent interest by the Navy in the development of the Air Force. However, successive Admirals of the Royal Navy, as Chiefs of the Naval Staff, tried to introduce the principle that no aircraft was to be sent over the sea without the approval of the Navy. That was so absurd that the Minister ignored it and so did I.[44]

As we shall see, the role of the navy in the force structure of the Air Force in 1939 was not one that could be dismissed so lightly.

As a result of the January agreement a Fleet Air Arm was to be established along the British model. Three navy pilots were under training; the Seagulls had been ordered for the newly formed Fleet Cooperation Flight. To Williams, this development was a direct attack on the integrity of the Air Force. He persuaded the Navy Board to agree to modify the scheme to ensure that naval officers would serve for four years as pilots and then transfer permanently to the Air Force or the Navy. The sting was in the latter choice. To continue flying, Navy pilots would have to do so as observers and thus maritime experience would still remain with Air Force pilots and the Navy would not retain that 'corporate memory' required developing an independent naval aviation service.[45] The Navy Board agreed to this procedure on 26 November 1926 'pending further examination of local Naval requirements with

[44] Williams, *These Are Facts,* p 142.
[45] Jones, *Seagulls, Cruisers and Catapults,* pp 38-9; Coulthard-Clark, *The Third Brother,* p 61.

regard to aircraft and personnel, and development of Admiralty policy relative to the Fleet Air Arm'.[46]

The decision to construct HMAS *Albatross* and the fact that the proposed cruisers would ultimately be equipped with catapults to enable aircraft to be launched from them made a review of the situation pertinent and timely. Hall-Thompson, raising the matter in a letter to the Minister for Defence, Major-General Sir Neville Howse, on 4 June 1926, argued that 'there is no justification for a separate Air Force, with its additional overhead expenses and the correct objective should be the establishment ... of two separate and distinct Naval and Military Air Arms'. His ultimate objective was for the Naval Air Arm to be 100 per cent manned, organised, trained, maintained and operated by navy personnel. Shore facilities for maintenance, training and other support functions would be required. After initial training with the Royal Navy, pilot and observer graduates would obtain operational experience with the Royal Navy Fleet Air Arm prior to returning to Australia.[47] Such a course of action would assist in ensuring that imperial naval links would not be broken.

The weakness of Hall-Thompson's argument was its focus on administrative rather than strategic and operational matters. 'There being no possible enemy country within air range,' he could not comprehend an independent strike role for the Air Force. The Navy therefore envisaged that all aircraft allocated for navy cooperation duties (and, for that matter, army cooperation) should be operated by the appropriate

[46] Rear Admiral P.H. Hall-Thompson (CNS) to Minister for Defence, 4 June 1926, RHR.
[47] ibid.

Service.[48] The logical extension of this argument was that the Air Force was unnecessary.

William's response came in the form of two memoranda to Howse dated 25 June and 22 July that effectively countered Hall-Thompson's argument. Both officers' arguments were defined by the attitude of the two British services. Williams was able to counter the Navy eight-point argument in detail by reference to the announcement made on 25 February 1926 by the British Prime Minister, Stanley Baldwin, that the organisation of Imperial Defence would be organised 'on the existing basis of three co-equal Services'. He also referred to the administrative duplication that was a factor in the raising of an independent RAF in 1918 and the financial economy that ensued as a result. Neither Williams or Hall-Thompson considered the offensive potential of a naval air arm - the CNS did not raise the matter and Williams made only a passing mention. He understood that the proposed seaplane carrier was 'not to work in close contact with the Fleet during battle but to operate as distant reconnaissance units'.[49] This was a role that the Air Force was prepared to accept.

Howse referred the matter to the Defence Standing Committee on the understanding that 'the organisation of the Defence Forces is on the existing basis of three co-equal Services. The Royal Australian Air Force was constituted ... to carry out all air work whether in co-operation with the Navy, the Army, or for any other purpose'.[50] One may interpret Howse's comment in favour of the status quo, but

[48] For a full discussion of the inter-Service battles, which threatened the very existence of the RAAF in this period, see Coulthard-Clark, *The Third Brother,* Chapter 3, pp 57-80.
[49] Williams to Howse, 22 July 1925, RHR.
[50] Minute by the Minister for Defence, 2 July 1926, RHR.

Williams attempted to bring pressure on his Minister by raising the matter with the RAF Chief of Air Staff, Air Chief Marshal Sir Hugh Trenchard. In his letter to of 11 August 1926 Williams raised the Fleet Air Arm issue and requested that, given the opportunity, Trenchard should discuss the matter with Howse during the 1926 Imperial Conference.[51] Howse sought further information on the British Fleet Air Arm from Trenchard. However, due to illness Howse was unable to have personal discussions with the Trenchard on the subject.[52] On his return, Howse made the predictable decision that the extant organisation of maritime material and personnel would stand. Cabinet considered the matter on 18 January 1928. Williams was able to advise Trenchard by letter on 4 April 1928 that 'the question of the Fleet Air Arm in Australia has at last been satisfactorily settled, and I am glad to say in our favour'.

Williams and the Air Force were aware of their responsibilities toward the other services. As Squadron Leader P.A. McBain, the Air Force Director of Equipment, noted when writing to Williams on 4 April 1923, it was accepted that the RAAF would be required to provide units which would 'work with both the Navy and the Army' and independently.[53] This was not just a matter of rhetoric. During the Winter Cruise of HMAS *Brisbane* to the Solomon Islands, Rabaul and the Queensland coast from 28 June to 13 August 1923, Flying Officer A.E. Hempel was attached to the ship's crew. This gave him the opportunity to gain sea experience and

[51] Williams to Trenchard, 11 August 1926, RHR.
[52] Trenchard to Williams, December 1926, RHR.
[53] McBain to Williams, 4 April 1923, 56/1/186, CRS A705/1, AA.

intelligence material related to prospective seaplane bases in the areas visited.[54] Similarly Flying Officer E.A Mustard DFC was attached to HMAS *Adelaide* during the ship's Winter Cruise to the island harbours of the Australian Mandated Territory. During the period 29 June to 3 August 1923, HMAS *Adelaide* visited Deboyne Island, Misima, Komine, New Britain, Admiralty Islands, Hermit Island, Humboldt Bay, Jautefa Bay, Madang, Alexis Harbour and Frederich William Harbour. Mustard was able to view Deboyne Lagoon, Admiralty Islands and Aitape from the ship. He landed at, and photographed the other sites. The significant observation made in his report was that ' the only piece of flat land suitable for land machines is at Rabaul'.[55]

Williams, McIntyre and Corporal L. Trist departed from Point Cook on 25 September 1926 in a De Havilland DH-50 floatplane for New Guinea and the Solomon Islands. One stated aim of the flight was to 'gain a knowledge of the geography and the flying conditions of the islands in the Pacific adjacent to Australia and which ... are fast coming within range of the mainland of the Australian continent. This knowledge is required for Australian air defence purposes'. The other was a matter of prestige. Due to press reports that 'certain Foreign Powers' planned a flight to the Pacific, 'it was desired that British Service aircraft should ... be the first to visit by air the British Possessions in the Pacific.[56] Coulthard-Clark argues that the flight was a reaction by Williams to the circumnavigation of Australia by his 'arch rival'

---

[54] Royal Australian Air Force, Report by Flying Officer A.E. Hempel on Solomon Islands, Rabaul and Queensland Coast visited by HMAS *Brisbane* during Royal Australian Navy Winter Cruise 28th June 1923 to 13th August 1923, RHR.

[55] Royal Australian Air Force, Report by Flying Officer E.A. Mustard DFC. Islands and Harbours of Australian Mandated Territory visited by him whilst attached to HMAS *Adelaide* during Royal Australian Navy Winter Cruise 19-6-23 to 3-8-23, RHR.

[56] Report on Flight Melbourne - Papua New Guinea and British Solomon Islands, RHR.

Goble and McIntyre in 1924.[57] The trio landed back at Point Cook on 7 December 1926. The trip had been a personal triumph for Williams. Although the RAAF gained publicity and prestige, the results of the flight did not warrant the presence of the Chief of the Air Staff. The report added nothing to the information submitted by Mustard and Hempel. Two short paragraphs were dedicated to vague references to the importance of the area to the defence of Australia and to that 'Australia should be interesting herself in obtaining all the information possible in regard to facilities for operating aircraft' in the area.[58] In his autobiography, Williams states that his 'view that seaplanes were properly employed only where landing places for landplanes were not available was confirmed'.[59] The strategic importance of the islands to Australia's north, and the role of maritime aircraft in its defence, was becoming obvious.

Prior to the outbreak of the First World War, the Marshall, Carolina and Mariana island groups, to the north of Papua New Guinea and New Britain, had been under German control. As a provision of the Versailles peace treaty, these chains had been passed, as League of Nations mandate, to the Japanese. The potential threat of Japan against interests of the United States in general and the Philippines in particular developed during the 1920s and 1930s, and the fact that these island were on the direct route of any US Navy reinforcement to the Philippines, resulted in the review of American strategic plans. Although US navy historian George Baer notes that 'whether the Japanese violated their agreement not to fortify the Marshalls, the Carolines and the Marianas remains in dispute', the Japanese presence in these island

[57] Coulthard-Clark, *The Third Brother,* p 389.
[58] Report on Flight Melbourne - Papua New Guinea and British Solomon Islands, p 38, RHR.
[59] Williams, *These Are Facts,* p 173.

groups was one that could not be ignored. The practicality of 'Plan Orange', the US plan for the reinforcement of the Philippine Islands in the face of Japanese aggression, was placed in serious doubt during manoeuvres in 1935, when it was conceded that it would be impossible to fulfil the US object unless bases in the Japanese mandated islands were neutralised.[60] Although Australian involvement with the British Far eastern policy based on the major fleet base at Singapore was of higher strategic priority, the potential of the Japanese mandated islands was not overlooked. However, lack of suitable equipment prevented any permanent RAAF presence in the area until the outbreak of the Second World War, when a flying boat squadron was deployed to Port Moresby, and advance bases from which forward reconnaissance missions could be flown, developed. The potential of Japanese forces, based in the Japanese mandate, to threaten Australian facilities became a reality during January 1942, when the Australian airfield at Rabaul was bombed by Japanese aircraft of which 'there could be no question that [they] had come from Truk', in the Caroline islands.[61]

However, the flight made in two Seagull III amphibians operated by the Papua Survey Flight highlight the limitations of extant RAAF equipment to meet maritime reconnaissance tasks. The Flight was formed at Laverton on 2 August 1927 and was directed to carry out an aerial reconnaissance of the coast of northern Papua New Guinea on behalf of the Anglo-Persian Oil Company. Coincidentally, valuable lessons on its potential wartime role could be learned. The aircraft was to be used to

---

[60] G.W. Baer, *One Hundred Years of Sea Power The US Navy, 1890-1990,* Stanford University Press, Stanford, 1994, p 125.
[61] D. Gillison, *Royal Australian Air Force 1939-1942*, Australian War Memorial, Canberra, 1962, p 318.

survey areas as far north as Aitape and, if time permitted, Bougainville, but, due to the dense jungle terrain that obscured the terrain, low cloud and rain hampering photography, the survey was not a success.[62] However, valuable lessons were learnt on the operation of a wooden amphibian in tropical conditions. As result of being unprotected from the elements and constantly immersed in salt water, structural problems in the fuselage, undercarriage and control surfaces became apparent. However, the most important operational limitation was the aircraft's lack of performance:

> Except on three or four occasions the machines had not much difficulty in getting off the water. There was however a marked lack of performance in the air with [a] full load, and the performance became progressively worse for the first month of the trip. It was then difficult to get them to stay at 400 ft in still air.
>
> On bumpy days it was not possible to get higher than three or four hundred feet for the first couple of hours of each flight. Judged by these performances the machines are not suited for service requirements of the nature of photographic mapping.[63]

The Seagull III was unsuitable for operations under these tropical conditions. This fact was confirmed in 1932 when Squadron Leader J.E. Hewitt reported that the performance of the Seagull III embarked aboard HMAS *Australia* for the Island Cruise of 1932 was 'good' but that it suffered 'a decrease in performance ... under [conditions of] high humidity'.[64] The Seagull III embarked aboard HMAS *Canberra* between 1 December 1934 and 30 November 1935 exhibited a notable lack of

---

[62] Report of Papua Survey Flight, RHR; C.D. Coulthard-Clark, *Edge of Centre: The eventful life of Group Captain Gerald Packer*, Royal Australian Air Force Museum, Point Cook, 1992, pp 15-19.
[63] Report on Papuan Survey Flight, p 5.
[64] Operation of Seagull Amphibian A9-2 from HMAS *Australia* during the Island Cruise, 10th September 1932-7th October 1932, RHR.

performance on several occasions. No wonder the news that the aircraft would be re-conditioned for further service in the cruiser squadron was 'a matter of great disappointment'.[65]

By 1934 the Seagull III fleet had been reduced through wastage to eight. (In addition to the original six, a further three had been purchased at bargain prices from the Royal Air Force in 1927.[66]) The outlook was even worse with the recommendation having been made that three more should be written off as 'being uneconomical to repair'. Two more were currently undergoing an extensive overhaul.[67] The aircraft type had another serious limitation - it had not been designed to operate from a ship's catapult. On 2 May 1930 the Air Board submitted a proposal for the purchase of 'two metal boat-amphibians of the type submitted by [the Supermarine Aviation Company] to our requirements and suitable for work in HMAS *Albatross'*. The decision of the Minister for Defence, A.E. Green, was precise - 'in view of the financial position, this expenditure cannot be approved'.[68]

The planned fitting of catapults to HMAS *Australia* and HMAS *Canberra*, coupled with the inadequate performance of the Seagull III, ensured that a replacement for this aircraft became a matter of concern. To meet the requirement, the Air Board submitted a specification to the British aviation industry for a three-seat amphibian. This aircraft was to be strengthened to enable it to absorb the shock of

---

[65] HM Australian Squadron-Periodical Report of Air Work, 1st December 1934 to 30th November 1935, RHR. Other examples of the lack performance by the Seagull III are cited in Gillett, *Wings Across the Sea,* p 30, and Jones, *Seagulls, Cruisers and Catapults,* p 60.
[66] Wilson, *Military Aircraft of Australia,* p 197, Williams, *These Are Facts*, p 176.
[67] Air Board Agenda No. 1603, 10 January 1934, RHR.
[68] Air Board Agenda No. 1398, 2 May 1930, RHR.

being catapulted from warships. Overall, the specification appeared 'impossibly demanding' and only Vickers Supermarine took up the challenge.[69] This company constructed the prototype Seagull V and approval to proceed with the project was given by the Minister for Defence, George Pearce, on 26 January 1934.[70] The first production Seagull V made its maiden flight on 21 June 1935. This aircraft embarked in HMAS *Australia*, now fitted with a rotating type S 11 L catapult during a short refit at Portsmouth, in September.[71] The Australian cruiser and its amphibian served with the Mediterranean Fleet during the ensuing Abyssinia Crisis, before returning to Australian waters. Incidentally, the Seagull was to prove an extremely successful design. In addition to the 24 Seagull V aircraft ordered by the RAAF, over 700 were constructed for the Royal Navy and named the Walrus.

In his *Memorandum Regarding the Air Defence of Australia* dated 21 April 1925, Williams sought endorsement for an extensive plan for the future development of the Air Force. In the maritime context he argued that an Air Force:

> can strike harder with greater speed and at greater distances than any other forces for the same expenditure of money and for the reasons that large sums are not spent on any one machine and that its operations are not confined to any particular surface it is more difficult than other forces to stop.[72]

After referring to the requirement for aircraft to be embarked on HMAS *Albatross* Williams propounded that, for close cooperation with the Navy, two flights comprising six amphibious aircraft each should be procured, and that four squadrons

---

[69] Jones, *Seagulls, Cruisers and Catapults,* p 70.
[70] Air Board Agenda No. 1603, 10 January 1934, RHR.
[71] Gillett, *Wings Across the Sea,* p 34.
[72] *Memorandum Regarding the Air Defence of Australia,* RAAF Headquarters, 21 April 1925, p 11, RHR.

be raised to meet the Navy request for the protection of sea borne trade against surface raiders and submarines. In addition he envisaged 'a mobile force of five bombing squadrons each of 12 landplanes ... and for defence of distant localities etc. [eg Darwin] a further 2 2/3 squadron each of 12 landplanes'.[73] Williams' submission was ignored by the government of the day.[74] This is not surprising when the economics of the proposal are scrutinised. The annual budget allocation for the RAAF was £450 000 and William's plan would cost an estimated £2.5 million - funding that would be at the expense of the Navy modernisation programme.[75]

In the mid-1920s there was a hiatus in the development of the Air Force. William's plan suffered the same fate as Wing Commander S.J. Goble's submission on Air Defence Policy prepared for the Air Board on 2 September 1924. Although discussed by the Board the matter was not considered further - there is a marginal note that 'this agenda was referred to a Board meeting on 17/9/24 but no action was indicated'. Goble had warned that at the end of 1925 the Air Force equipment would be of 1916/17 vintage and 'quite inadequate to cope with the demands' likely to be made upon it. Further, the annual appropriation of £381,516 made it impossible to provide for 'mobilisation equipment'. Goble continued by stating that:

> ... no provision whatever is made for the establishment of flying boat units based at strategical points along the coast line and which in the event of invasion would be the first units of the Air Force to be called on for action together with float seaplanes.[76]

---

[73] ibid, p 9.
[74] Stephens, *Power Plus Attitude,* p 29.
[75] A. Stephens; *The Royal Australian Air Force,* Oxford University Press, Melbourne, 2001, p 44.
[76] Air Board Agenda No.545, *Air Defence Policy,* RHR.

Two Supermarine Southampton flying boats were purchased in 1927. An example of these elegant flying boats served until 1939, and they were utilised by the Seaplane Squadron of No.1 Flying Training School, based at Point Cook, to undertake coastal reconnaissance and shadowing exercises with RAN cruisers. In addition, flights were made in 1935 to survey sections of the Sydney to Darwin section of the British Empire Air Mail route, in keeping with the politically astute motive given for the procurement of the aircraft: that they were 'intended for the development of Inter-Empire Air Routes in cooperation with the RAF.'[77]

Williams agreed with the thrust of Goble's argument. In a later letter to Trenchard he contended that RAAF equipment, 'although not new, [was] ... not unsafe and is suitable for training'. In his battle with government for the Air Force to obtain funding to enable 'Air Defences [to be developed] more in proportion to our Sea and Land defences', Williams found his 'comparative youth and junior rank' (he was promoted to the rank of air commodore in April 1927) a significant mitigating factor in any tri-service discussion and considered that the opinion of a senior active Royal Air Force officer would have more impact. As a result of a spate of fatal training accidents, the Government in 1927 established an Air Accidents Investigation Committee. Williams saw this action as a lack of confidence in the Air Board, and advocated that a visit be a senior RAF officer 'would be a good thing ... and give the Government and the people an authoritative and informed opinion in regard to what is being done in the RAAF.' He saw the proposed visit as being beneficial in a wider

[77] Air Board Agenda No. 919, June 1927, RHR.

sense. His own position and prestige in the military hierarchy would be enhanced. Although couched in economic terms, his suggestion that this officer should be Air Vice Marshal W.G.H. Salmond is significant in this context. Salmond had been Williams' commander for the majority of the former's wartime service in the Middle East. In addition, Salmond knew many of the serving officers of the RAAF and had personal 'knowledge of the peculiarities which some people say we have'.[78] Williams considered that he could influence Sir Geoffrey due to mutual wartime experience and the fact that he 'knew he could talk to him'.[79] However, the advice of the Chief of the Air Staff was not heeded. Due to Sir Geoffrey being unavailable, his brother, Air Marshal Sir John Salmond, was invited in his stead. The subsequent report was a watershed in the development of the RAAF and supplied Williams with the imprimatur of British authority to develop the Air Force; as mentioned in his autobiography, Williams found it 'most useful in making recommendations for increases in the Service to be able to say, "this was recommended by Sir John Salmond".'[80]

Sir John Salmond's report was presented to the Prime Minister on 20 September 1928 and substantiated Air Force protestations regarding the quality of its equipment. Salmond found that 'due to the obsolete type of service machines in use throughout the Air Force, to the entire absence of reserve equipment, and the low standard of training in these operational units, ... the RAAF would be totally unfit to

[78] Williams to Trenchard, 31 December 1927, RHR.
[79] Williams, *These Are Facts,* p 182.
[80] ibid, p 185.

undertake operations in co-operation with the Navy or the Army ... '.[81] He advocated the professionalisation of the Service as a whole. In the maritime context the recommendations influenced the RAAF equipment procurement and unit deployments prior to the outbreak of the Second World War. Salmond envisaged at nine-year period of development. He advocated the establishment of two Flying Boat Flights, two bomber reconnaissance squadrons, a Citizen Air Force bombing squadron, and the development of three slipways for the operation of flying boats. Of importance in the development of the maritime strike role was his assertion that the two bomber reconnaissance units at Richmond and Laverton, though a 'natural complement of the Air Force working with the Army, [would] be available for coast defence - especially when the torpedo-bomber aeroplane is fully developed'.[82] The torpedo bomber was a type of aircraft that had the potential to add immeasurably to the credibility of Australia's defence against seaborne attack. Whether the potential matched reality will be discussed at a later stage.

The Air Board fully agreed with the thrust of the report of the British air marshal. Williams had his authoritative document on which to base Air Force expansion plans. The Air Staff noted that providing the number of units recommended 'within the nine years is probably as much as funds available will allow and would be a reasonable development in that period'.[83] The Naval Staff viewed the provision of torpedo bombers as a 'very large capital expenditure',

---

[81] Report by Air Marshal Sir John M. Salmond KCB, CMG, CVO, DSO, ADC, Royal Air Force. Part 1. The Organisation, Administration, Training and General Policy of Development of the Royal Australian Air Force, Melbourne, 20th September 1928, p 7, RHR. [hereafter Salmond Report]
[82] Salmond Report, p 15.
[83] Air Staff Note on the [Salmond Report], p 6, RHR.

contended that 'three-engine landplanes can do sea reconnaissance as well, if not better, than [flying] boats' and concluded that Citizen Air Force bomber units would be 'practically valueless until they have had considerable experience in sea work' - a theme to which the Navy Board would return to in future discussion of the role of the Citizen Air Force. The Navy agreed to the stationing of a bomber unit at Albany. Western Australia, and disagreed with the Air Board contention that such a unit would be of more value covering Darwin.[84]

By the beginning of 1935 the Naval Staff had refined their requirement of coastal reconnaissance. On 14 February 1935, the Secretary, Navy Board, responded to a request by the Secretary of the Air Board for clarification on the areas that required aerial reconnaissance. It was assumed that the depth of any single patrol would be 200 miles, and that these patrols would be centred on Rottnest Island, Cape Leeuwin in Western Australia, the 'westerly common tangent' to the Bass Strait and Tasman areas centred on Sydenham Inlet, Gippsland, Victoria, Sydney, New South Wales, and Darwin, Northern Territory.[85] The duties of the units detailed for the operations would be to detect and report to higher authority the presence of enemy shipping or submarines in the area. These patrols would normally be undertaken in daylight hours 'because of reduced visibility at night' and that 'an aircraft with considerable range of action will be required ... flying boats are considered the most suitable'.[86] The Air Board responded on 15 March, suggesting that it would be more effective if the limit of the Bass Strait area or operations be pushed further west

[84] Naval Staff Note on the [Salmond Report], p 2, RHR.
[85] Secretary, Naval Board, to Secretary, Air Board, 14 February 1935, 15/501/40, CRS A1196/6, AA.
[86] ibid.

because, as it stood, it did 'not provide the same security from enemy action as the remainder of the area in relation to focal points'. Further, Air Force was of the opinion that to conserve aircraft only congested port areas should be extensively patrolled. In recognition of the Navy requirement for anti-submarine patrols ahead of important vessels or convoys, it was conceded that such operations would be undertaken 'by arrangement'. It was noted that no patrols had been requested for the Brisbane and Torres Strait areas; an omission that appeared to be a significant oversight, due to the fact that 'Darwin [would] assume great importance in the event of war in the Far East' and that a considerable quantity of shipping would pass along the Brisbane-Torres Strait sea route.[87] Navy responded a week later, agreeing to the extension of the Bass Strait patrol area westward to centre on Port Nepean and advising that an assessment had been made that, due to the danger of submarines and mines in the Torres Strait area, the volume of traffic through the area was 'not expected to be large' and that coastal reconnaissance of the area was therefore not justified.[88]

On 12 March Wing Commander A.H. Cobby, the Air Force Director of Intelligence, advised Williams that he estimated 42 aircraft would be required to guarantee that no enemy vessels were present in any of the patrol areas requested by the Navy during daylight hours.[89] Cobby varied his advice on 9 April, writing to Williams that the extension of the Bass Strait patrol area to the west would entail the

[87] Secretary, Air Board to Secretary, Naval Board, 15 March 1935, ibid.
[88] Secretary, Navy Board to Secretary, Air Board, 22 March 1935, ibid.
[89] Wing Commander Cobby (DOI) to CAS, 12 March 1935, ibid.

operation of two more aircraft.[90] Next day Williams responded advising Cobby that for purely coastal reconnaissance the Air Force should aim at 'providing squadrons (of 12 multi-engine landplanes) at each of Sydney, Melbourne, Darwin and Perth'. However, Williams was intent at looking at the overall situation, for he requested Cobby to draw up a list of units required for cooperation with the Fleet, fixed defences, and to undertake coastal reconnaissance. Nor did he lose sight of the overall role of the air force, including such tasks as the supply of striking forces and fighters in his request [91]

Although considered by the Royal Air Force as an interim coastal reconnaissance aircraft, Avro Anson aircraft landplanes were ordered from Great Britain to meet the recommendation made by Sir John Salmond. Delivery of the new aircraft commenced in November 1936.[92] These aircraft were operated by 21 Squadron at Laverton, Victoria (commencing 16 December 1936[93]), 22 Squadron at Richmond, New South Wales (March 1937[94]), and 23 Squadron, also at Laverton (1 July 1937). The last-named moved to Pearce, Western Australia, on 10 March 1938[95], and was renumbered as 25 Squadron on 1 January 1939. With the addition of 12 Squadron, which arrived at Darwin in July 1939,[96] the Air Force met its aim of providing a coastal reconnaissance capability as laid down by Williams on 10 April 1935. With the actual or imminent deployment of these squadrons, on 23 July 1937

---

[90] Wing Commander Cobby (DOI) to CAS, 9 April 1935, ibid.
[91] CAS to Wing Commander Cobby (DOI), 10 April 1935, ibid.
[92] Wilson, *Military Aircraft of Australia,* p 23.
[93] RAAF Historical Section, *Units of the RAAF: A Concise History. Volume 3 - Bomber Units,* Australian Government Publishing Service, Canberra, 1995, p 56.
[94] ibid, p 63.
[95] ibid, p 70.
[96] ibid, p 33.

the Navy requested that plans for cooperation with local naval defence force authorities and their Air Force colleagues be formulated.[97] The Air Board acceded to this request on 15 October, ensuring that plans would be made for the Air Force to cooperate with armed vessels that would form the local anti submarine and mine clearance flotillas. In the Sydney area, the responsible authorities for coordinating plans were the Captain Superintendent, Sydney, and the Commanding Officer of the RAAF base at Richmond, while planning would also be undertaken by the naval and air staffs responsible for the Bass Strait and Fremantle areas.[98]

The Air Force agreement to cooperate on coastal reconnaissance matters encouraged the Navy Board to, on 24 August 1938, again raise the issue of operational control of the forces allocated for the task. Of the 100 aircraft being sought under the current expansion programme, the Navy assessed that the 34 that would be manned by the Citizen Air Force, the members of which it argued 'cannot be regarded as competent to carry out reconnaissance to seaward, although suitable for other local trade defence duties'. The Navy also 'understood' that the remaining reconnaissance aircraft would be distributed to Darwin, Pearce, Richmond, Laverton (12 aircraft each), and Lake Macquarie, New South Wales (six flying boats), while Mallacoota in Victoria would be the base for 12 Seagull amphibians; it argued that at least 48 aircraft would be required to cover the important South East coast of Australia. To further bolster its bid for operational control of all seaward reconnaissance aircraft the Navy quoted the Committee of Imperial Defence paper

[97] Secretary, Navy Board, to Secretary Air Board, 23 July 1937, 15/501/40, CRS A1196/6, AA.
[98] ibid.

CID 1368B: *The Protection of Seaborne Trade*. In the British context, the British Chiefs of Staff had stated that 'aircraft allocated for trade protection would not be taken away for extraneous duties in time of war without prior concurrence of the Chiefs of Staff Sub-Committee or the War Cabinet'. Navy attempted to project this policy on to the Australian situation:

> It is proposed ... that the trade defence cooperation functions of the RAAF should be separated from the other functions and that the 66 aircraft suitable for reconnaissance should be specifically earmarked for this duty, the personnel trained accordingly ... [and] that these aircraft should not be taken away in war without the prior concurrence of the Defence Council of the Cabinet.
>
> It is observed that the requirements of shore based aircraft for trade defence in war against Japan are assessed in CID 1368B as being solely reconnaissance. For this reason it is suggested that reconnaissance should be regarded as the chief concern in trade defence. Local defence duties such as anti-submarine patrols could be performed as the need arose by 'general purpose' or Citizen Air Force squadrons. Convoy escort, if and when required, could also be provided from the same source.[99]

The Navy proposal passed over the desk of Wing Commander W.D. Bostock, who had superseded Cobby as DOI. To Bostock the implications were profound. His view was that Air Force Headquarters would 'sacrifice the initiative' when it came to quickly assembling and employing general reconnaissance aircraft as an effective strike force.[100] Bostock drafted the Air Force response to the Navy Board, which, after clearance by the CAS, was signed on 3 October. The Navy proposal was rejected, as 'the basis of the organisation of the Royal Australian Air Force is that operational units must be trained for more than one function as they may be called upon to perform various roles in war, according to circumstances and the situation.'

---

[99] Secretary, Navy Board, to Secretary, Air Board, 24 August 1938, ibid.
[100] Wing Commander W.D. Bostock (DOI) to CAS, 5 September 1938, ibid.

By way of placating Navy, the letter conceded that the maximum number of aircraft possible would be allocated to direct cooperation with naval forces and trade defence 'should this aspect of the war situation be the dominant one'.[101]

But the Navy was not to be appeased. To enhance their argument that seaward reconnaissance should be given the highest priority, the current Royal Air Force organisation was held up as a precedent. In the British context, seaward reconnaissance aircraft were placed under the operational control of the Admiralty - a course of action supported by 'Marshal of the Royal Air Force Sir Edward Ellington [who] during his recent visit to Australia, expressed the opinion to the Chief of the Naval Staff that the adoption of this procedure by the United Kingdom for RAF aircraft appear[ed] to him to warrant similar action in Australia'.[102] The Ellington comment must be placed in the context of the organisational development of the RAF. During December 1918, Secretary of State for the Royal Air Force, Lord Weir, sought Cabinet approval for his proposed re-organisation of the post First World War RAF. Plans were made for the formation of a Coastal Area, responsible for anti-submarine patrols, convoy protection and 'attack on enemy naval forces in narrow waters'.[103] Although Coastal Area (which became Coastal Command) was dedicated to fleet duties, the Command was, in comparison with the priorities given to the expansion of both Bomber and Fighter Command in the late 1930s, a bad third. The RN, aware of the emphasis placed by the RAF on strategic bombing, was concerned that Coastal Command aircraft would be diverted from the fleet support role. Even

[101] Secretary, Air Board, to Secretary, Navy Board, 3 October 1938, ibid.
[102] Secretary, Navy Board, to Secretary, Air Board, 26 October 1938, ibid.
[103] Goulter, *A Forgotten Offensive*, p 63.

though 200 aircraft had been assigned to Coastal Command by 1937, the RN had sought guarantees that these aircraft would be 'placed at [its] operational disposal',[104] and proposed that it should control the Command. During May to July 1937 an enquiry, chaired by Sir Thomas Inskip, probed into the control of the Fleet Air Arm and Coastal Command. The result of Inskip's consideration was that the control of the Fleet Air Arm was transferred to the Admiralty, but the Navy claim for 'the control of shore based aircraft ought not to be admitted'.[105] The RAAF, lacking the RAF functional basis, was not a comparable organisation. Indeed, individual squadrons had multi-role functions, and Ellington's observation was not pertinent.

Rightly, Bostock advised Williams that the situation of the two air forces was entirely different. To concur with the Navy request would lead to the whole of the Air Force's reconnaissance capability being committed to the seaward reconnaissance role, and he suggested that Williams should discuss the matter personally with Sir Ragnar Colvin, the Chief of Naval Staff. The subject was raised between the two Service chiefs on 13 November. The detail of the meeting is not available but, from the implication expressed in Colvin's cryptic note to Williams next day, it may not have been amiable. Colvin, having stated that he felt that the allocation of aircraft 'corresponds to the strategical requirements of Australian defence', threatened that 'unless some arrangements can be come to I must put this fact and my apprehension on record to the Minister'.[106] On the 18th Colvin continued his argument for Naval

---

[104] S. Roskill, *Naval Policy Between the Wars: II The Period of reluctant Rearmament 1930-1939,* Collins, London, 1976, p 399.
[105] ibid, p 403, Goulter, *A Forgotten Offensive,* p 99; A. Hezlet, *Aircraft and Sea Power,* Peter Davies, London, 1970, p 130.
[106] Sir Ragnar Colvin (CNS) to CAS, 14 November 1938, ibid.

control of seaward reconnaissance aircraft, pointing out that, as aircraft alone were not able to meet the requirements of International Maritime Law (Visit and Search), they were required to work in close cooperation with naval vessels that were able to meet this legal requirement. [107] Williams replied on 6 December 1938, countering Colvin's assertions and opening up correspondence between the two, which contributed technicalities and debating points but did nothing to clarify the command situation. At a departmental level, it was evident that the correspondence between the two Chiefs was becoming counter productive: when advising the Navy Board of the RAAF expansion programme and of the planned distribution of aircraft, the point was made that:

> ... the Air Board is unable to believe that, in any situation, lack of co-operation between the Services could reach such a point that the Chiefs of Staff could not agree as to the most efficient disposal of forces to meet the conditions existing at the time. If such circumstances should arise, and only then, would it be necessary to seek a decision from the Cabinet or the Council of Defence. ... the Air Board is most anxious to assist the other Services in every way, and would not take any action which would deprive either the Naval or Army forces of the maximum air assistance possible, without first consulting the Services concerned.[108]

Air Vice Marshal S.J. Goble, assuming the appointment as CAS on 28 February 1939, may have taken a more pragmatic view of the situation than the more pedantic and waspish Williams. Indeed, the Navy Board responded positively to this olive branch on 5 March, accepting that the matter of reconnaissance to seaward 'can be best decided by the Naval and Air staffs in consultation, observing that the requirements

[107] CNS to CAS, 18 November 1938, ibid.
[108] Secretary, Air Board, to Secretary, Navy Board, 17 February 1939, ibid.

will vary under different conditions and that there must be limits beyond which it would be unsound normally to operate air personnel and material'.[109]

When the Second World War was declared in September 1939, the RAAF and RAN had evolved mutually acceptable administrative and operational procedures that covered seaward reconnaissance, convoy escort and the embarkation of aircraft on, and operation from, RAN cruisers. In the latter case the Australian Services followed the British precedent, with the RAAF manning and maintaining amphibious aircraft embarked on RAN cruisers. Operational control of the aircraft and the airmen was in the hands of the Naval commander, and this was a precedent followed until 1944, when amphibians were no longer embarked on RAN vessels. However, the issues raised in the inter-war period were, as we shall see, to surface in the late 1940s.

[109] Secretary, Navy Board, to Secretary, Air Board, 8 March 1939, ibid.

2

THE DEVELOPMENT OF AUSTRALIAN AERIAL MARITIME THEORY AND EQUIPMENT PROCUREMENT

During the inter-war period the debate on the relative advantages of naval or air power was raised in parliament and other forums. During the senate second reading consideration of the *Air Defence Bill* in April 1921, New South Wales Nationalist Party Senator W.L. Duncan argued that 'in the future, victory will rest with the side which possesses the more efficient Air Force' and that, in a maritime context and the given obsolescence of units of the Royal Australian Navy, Australia:

> ... cannot afford to dependent entirely upon our Navy and our Army …. In regard to naval defence, it will be impossible for us to compete with the wealthier nations of the world … We have spent millions sterling upon the Navy, yet most of our ships, when contrasted to those of other nations, will be found to be obsolete and out of date. … Our most recently constructed cruiser, the *Adelaide*, which is now lying in Sydney Harbour unfinished, and which has already cost us more than 1,000,000 pounds, is obsolete before she has been equipped with a single gun. … Consequently we cannot afford to depend upon the naval arm of our defence if the adoption of any other means will provide us with an equal measure of protection ... The Government propose to establish the nucleus of an air defence organisation which, in future years, will guarantee immunity from attack. If an invading force should come from the north, they will consider very hard and for a long time before they came, if they knew that we had here an efficient Air Force of, perhaps, thousands of machines ready and eager to fight them and disperse them.[1]

This also was the thrust of a series of articles published in the London *Times* written by Sir Reginald Hall RN, ex Director of Naval Intelligence, who asserted that 'British

[1] Commonwealth Parliamentary Debates [hereafter Hansard], Senate, 14 April 1921, pp 7431-4.

sea power could be adequately and more economically maintained by relatively light surface forces, submarines and aeroplanes'.[2] Much of the parliamentary rhetoric was based on the economics of operating airships and aircraft. For example, during the debate in the House of Representatives on 2 March 1923, Walter Marks, the Nationalist Party Member for Wentworth, stated that 16 airships could be constructed at the cost of a battleship. Each airship was capable of carrying two torpedo-carrying aircraft. Nine such craft, it was claimed, could undertake the work of 60 cruisers and save a capital cost of £51,000 and the operating cost of 25 shillings per mile compared favourably with £75 per mile for a light cruiser.[3] However, Marks took an ambivalent stance on the matter. He was not convinced of the efficacy of the aerial alternative. While maintaining that Australia's defence depended on the maintenance of a force of 'up-to-date destroyers, submarines, light cruisers and aircraft' he identified that this force would be 'welcomed by the Royal Navy as a unit which can be dovetailed into any part of the battle line ... '.[4] The implication was that the maritime defence of Australia was predominantly a matter for the capital ships of the Royal Navy.

The Prime Minister confirmed this view. Mr Stanley Bruce stated that 'we have to recognise that the capital ship is a determining factor in naval warfare, and so long as the capital ships of Great Britain are afloat no country dare send a great expeditionary force against Australia'.[5] This statement was based on the premise that one of the resolutions of the Imperial and Economic Conference of 27 March 1924,

---

[2] Hyde, H.M., *British Air Policy between the Wars 1918-1939,* Heinemann, London, 1976, p 98.
[3] Hansard, House of Representatives, 2 March 1923, p 125.
[4] ibid, p 127.

that 'the deep interests of the Commonwealth of Australia ... in the provision of a Naval Base at Singapore, as essential for ensuring the mobility necessary for the security of the territories and trade of the Empire in Eastern Waters', be met.[6] To appease Bruce, the British First Lord of the Admiralty, Leo Amery, had assured the Australian Prime Minister that a Far East fleet comprising a squadron of light cruisers and two or three capital ships would be formed to protect the Naval Base. But there were public utterances that denigrated the ability of the Royal Navy to meet this commitment in the event of a war on two fronts. The South African Prime Minister, Jan Smuts, was one such critic.[7] On 15 June 1923 the Labor Party member for Melbourne, Dr W.R.N. Maloney, took a similar stance and quoted Admiral Sir Percy Scott to support his assertion. Scott had raised two questions - the future of the battleship in general and of how, 'in time of war, … will capital ships get to Singapore, and what will they do if they get there?'[8]

Sir Percy's opinion was that the battleship was of 'no damn use at all' in modern warfare.[9] The sinking of the *Ostfriesland* by 2000 pound bombs dropped from land based bombers under the command of the United States Army Air Corps Brigadier General William Mitchell on 21 July 1921 appeared to vindicate this assertion. Mitchell claimed that this, the climax of a series of trials that involved successful attacks on destroyers, the submarine U-117 and the cruiser *Frankfurt*, 'conclusively proved the ability of aircraft to destroy ships of all classes on the

---

[5] ibid, 27 June 1924, p 1708.
[6] ibid, 27 March 1924, p 24.
[7] McCarthy, *Australian and Imperial Defence*, p 47.
[8] Hansard, House of Representatives, 15 June 1923, p 130.
[9] ibid, p 130.

surface of the water'.[10] Predicably, the battleship pundits disagreed. In an address to the United Service Institute in Melbourne on 19 June 1928 Rear Admiral E.D. Sydenham gave an excellent example of the passion and misunderstanding that was endemic in the debate. In part he stated that:

> Bombing attacks on old battleship hulls were described as conclusive evidence of the superiority of the aeroplane. It was stated that the large bombing planes which cannot be used in any existing aircraft carrier were unopposed in the air by defending planes, that the velocity of the wind was known to the aviator and the guns of the ship were not in action, that the ships were obsolete and stationary, and in some cases they had been fired on by guns previously.
> There is a failure to appreciate that under the same conditions for the attack, a single destroyer or a single submarine could sink the ship in less time than that taken by a whole flight of aircraft and with much less waste of ammunition ... [11]

He also argued that a defending aircraft would always be of superior performance to a 'one shot'[12] bomb or torpedo-carrying aircraft and that anti-aircraft defences had improved to such an extent that the combination would mean that the attacker would 'not only be dodging a fighting plane armed with a machine gun, but will be wondering whether he can get his bombs off before the next anti-aircraft gunburst will get him'.[13] The admiral viewed aircraft as being 'incapable of exercising the steady pressure by which wars are won', and he concluded:

> wars, whether on land or sea, will be won in the future as they have been in the past, by the comparatively slow but irresistible force which is able to move from one strategic position to another, take it, consolidate it, hold it and move on the next. On land this force is the infantry, on the sea it is the warship. The airplane is not of this type.

---

[10] W. Mitchell, *Winged Defence: The Development and Possibilities of Modern Air Power Economic and Military* (1925*),* Dover Publications, New York, 1988, p 73.
[11] 1247/22, p 3, CRS 5954/69, AA.
[12] ibid, p 12.
[13] ibid, p 16.

Squadron Leader W.D. Bostock presented the aerial view in a paper presented to the Aeronautical Engineering Branch of the Sydney Division of the Institute of Engineers, Australia, and published under the title 'The Work of the Royal Australian Air Force' in the *Australasian Engineer* on 7 June 1933. Bostock discusses the argument of current British air strategists who:

> ... believe that an air force can make a direct contribution to [the aim of a nation] ... to bring such pressure to bear upon the enemy people as to induce them to force their Government to sue for peace, and as such ... should be its primary function. This doctrine postulated the bomb as the first weapon of air warfare, because, by means of the bomb, pressure can be brought to bear on the enemy people without overcoming any preliminary obstacles ... Regular and consistent bombing can so upset [the enemy's] normal routine - his civil administration his manufacturing industry, his food distribution services etc - that the morale of the whole people is lowered to a degree when they consider peace is desirable at any price ...

This was the thesis of Douhet and Trenchard. Bostock, a student at the 1926-27 RAF Staff College course, would have been aware of the RAF premise that the only defence against such an aerial campaign was one of the counter offensive, where a determined bomber force would overcome any active or passive defensive measures, developed a maritime theme that suited Australia's geographic position.

Although Bostock agreed that to depend on a fighter force for defence was a 'fallacy and contrary to the doctrine' and that 'our correct course ... is to defeat the enemy by striking at his vital centres', he conceded the Euro-centricity of the theory. In the Australian context Bostock advocated that the 'sea communications and ... advanced bases are essential ... it is obvious that our correct action is to make the focal point of [the enemy] sea communications impassable and his forward bases [in this case, aircraft carriers] untenable'. Although conceding that the 'navy is the logical

first line of defence for an island nation' Bostock recapitulated that the provision of an adequate naval cruiser force was beyond the financial ability of Australia. His solution was the provision of a 'mobile air striking force of torpedo bomber aircraft which the country can afford'.[14] Although speaking in a private capacity, Bostock reflected the current Air Force view. It had taken a decade to reach this intellectual position, but the Air Force at this time lacked the capacity to make such ideas reality.

During 1923 the Chief of the Air Staff, Richard Williams, attended the British Army Staff College at Camberley, completing the course at the end of the calender year. As the current Royal Air Force Staff College course at Andover was not due to graduate for six months, Williams 'arranged to attend what remained of that course', and at its conclusion 'was included in the list of students who had graduated'.[15]. During December 1924 he returned home via Canada and the United States. Although he notes in his autobiography that 'Brigadier General "Billy" Mitchell was having a tremendous fight with his seniors in the Army in his endeavour to build up aviation in that Service', Williams appears to have made no effort to consult with the American zealot.[16] Williams was more interested in the development of the Irving parachute and the American technique of winching seaplanes up a slipway and Mitchell was not mentioned again. Although there is no evidence available of any contact with Mitchell or adherents to his position, a basic premise of William's 1925 paper ,*Memorandum Regarding the Air Defence of Australia,* that 'air power could … provide the key to

[14] 'The Work of the Royal Australian Air Force', *The Australasian Engineer, 7* June 1933, Australian War Memorial AWM PRO00580, Papers of Air Vice Marshal William Dowling Bostock.
[15] Williams, *These Are Facts,* p 149.
[16] Williams, *These Are Facts,* p 157.

national security by controlling the sea lines of communications',[17] has similarities to Mitchell's argument that aircraft could destroy or sink any 'seacraft coming within their radius of operations'.[18] However, as Williams had attended the RAF Staff College in 1924 before visiting the United States, the influence of RAF theory and a probable awareness of the role of RAF Coastal Area, would have been of greater influence on the conservative Australian CAS than a renegade American airman's theory.

Even a decade later he showed little interest in debate centred on aircraft and warships. As a student at the Imperial Defence College in 1933, Williams and other course members travelled to the naval base at Portsmouth, where HMS *Centurion* was docked after being used as a radio controlled manoeuvring target for bombing trials. He claimed that 58 per cent of the bombs aimed at the vessel had hit; however, a viewing of the ship was not on the visit agenda and the event was not given specific emphasis in his autobiography.[19] Given that Williams had, in 1925, advocated the use of air power to counter Japanese surface raiders and that the efficacy of airborne weapons against ships at sea would have been crucial to his argument, this is a telling oversight. By way of explanation, Williams was, of necessity, forced into the role of a politician, fighting for the very existence of the RAAF. As Alan Stephens states, his 'intellectual contribution to the Air Force came in the form of strategy rather than theory'[20] and the result of the trails that were undertaken by the RN and RAF during

[17] Stephens, *Power Plus Attitude,* p 28.
[18] Mitchell, *Winged Defence*, p XVI.
[19] ibid, p 206.
[20] Stephens, *The Royal Australian Air Force*, p 42.

the 1930s do not appear to have influenced his thinking.[21]. This was not an isolated incident. The 1925 Colwyn Committee into the service estimates in Britain, had, in the face of Army and RN assertions that it would be more economic to disband the Air Force as a separate service, favoured the retention of the RAF. [22] Williams identified this outcome as significant in his battle to retain the independence of the RAAF. On 3 September 1926 he wrote to Trenchard that he had 'seen nothing except a statement by the Duke of Sutherland in the House of Lords, but perhaps you could give our Minister more information on the subject'.[23] His objective was to bring the weight of Trenchard's personality and experience to secure the RAAF position in the Australian military establishment, and not as a basis for doctrinal development. As will be noted later, Williams did not show foresight in his attitude toward the employment of RAAF officers to gain experience in appropriate RAF appointments.

Nor did the RAAF make any effort to enable its potential commanders to gain any experience in maritime aviation. After attending the 1929 Royal Air Force Staff College course, Squadron Leader (later Air Marshal, and Chief of the Air Staff 1942-1951) George Jones 'arranged attachments to several fighter squadrons'.[24] Squadron Leader Bostock (later Air Vice Marshal, Officer in Charge, RAAF Command 1942-45) served on the air staff of 1 Group Headquarters, Royal Air Force, from July 1935 until July 1938, where he became cognisant of light bomber operations.[25] The third

---

[21] Goulter, *A Forgotten Offensive,* pp 80-6; G. Till, *Air Power and the Royal Navy 1914-1945: A Historical Survey*, Janes, London, 1979, p 157.
[22] Goulter, *A Forgotten Offensive,* pp 52-3.
[23] Williams to Trenchard, 3 September 1926, RHS.
[24] Sir George Jones, *From Private to Air Marshal: The Autobiography of Air Marshal Sir George Jones,* Greenhouse Publications, Richmond, 1988, p 46.
[25] Air Vice Marshal W.D. Bostock, Personal File, RHR.

officer was destined to command 9 Operational Group in New Guinea. An ex-naval officer, J.E. Hewitt (later Air Vice Marshal) commanded No.104 (B) squadron in 1938.[26] This squadron was in the process of phasing out its Hawker Hind bi-planes and introducing the new Bristol Blenheim light bomber.[27] Hewitt had served with No. 101 Fleet Cooperation Flight and, with his naval background, a Coastal Command unit would have been a better choice of appointment. So the opportunity was missed to give potential commanders operational experience in a field that was to prove an important facet of RAAF wartime operations.

The RAAF did develop an intellectual foundation for its stance on maritime operations. Squadron Leader H.N. Wrigley's personal notes on air strategy have been identified as 'a *de facto* expression of early Australian air power doctrine'.[28] Writing in July 1923, his notes on air strategy reflect the current thinking on the role of aircraft with the fleet:

> (a) When co-operating with a navy, reconnaissance is one of the most important duties of aircraft.
> The main advantage of aircraft reconnaissance is:
> (i) It is very rapid.
> (ii) It can observe main bodies, not merely covering forces ...
> (b) Air bombing or torpedo attack may force a fleet to break station or to adopt an open formation in either of which case it will be at a disadvantage if in action with a fleet that can retain its battle formation. A fleet may also by the same method be forced to alter course so as to place it at a disadvantage.
> (c) Air power may render naval bases insecure ... [29]

[26] J.E. Hewitt, *The Black One,* Langate Publishing, South Yarra, 1984, p 147.
[27] *The Illustrated Encyclopedia of Aircraft;* Orbis, London, 1985, p 3873.
[28] A. Stephens and B. O'Loghlin (eds), *The Decisive Factor: Air Power Doctrine by Air Vice Marshal H.N. Wrigley,* Australian Government Publishing Service, Canberra, 1990, p xiii.
[29] ibid, p 40.

Wrigley identified that aircraft could be used as a substitute for heavy fortress artillery for coastal defence. He raised an interesting scenario: 'Would it not be far preferable to use aeroplanes for direct action against enemy vessels by torpedo or bomb attack and so do away with coast defence guns?'[30] The argument was not developed further to encompass the ability of land based air power to fully combat raiding or invasion forces as envisaged by Mitchell. Wrigley's writings were personal reflections and it is probable that they were not widely read among his peers. However, as noted above, it is a theme that was picked up in Bostock's private paper of June 1933.

It was not until 1935 that a serious effort was made to set an intellectual basis for the use of aircraft in the defence of Australia and to cooperate with the navy. On 18 September Squadron Leader (later Air Marshal Sir) J.P.J. McCauley wrote on behalf of the Chief of the Air Staff to the commanders of the Seaplane Squadron and Fighter Squadron elements of No.1 Flying Training School, No.1 Aircraft Depot, No.1 Squadron, No.3 Squadron and No.101 (Fleet Cooperation) Flight, requesting that they submit proposals on tactical methods to be implemented for the local defence of Australia. Simultaneously, McCauley had forwarded a requirement to all base commanders to prepare a local defence scheme. The Seaplane Squadron was to prepare a paper on 'Coast Reconnaissance' and No. 101 Flight was allocated the subject 'Naval Cooperation'. The Fighter Squadron at No. 1 Flying Training School, No. 1 Squadron and No. 3 Squadron were to prepare papers on "Fighting', 'Striking' and 'Army Co-operation', respectively. These five papers were, as Coulthard-Clark rightly notes, a 'crude, but nonetheless first-ever attempt to formulate operational-

[30] ibid, p 45.

level doctrine' which culminated in the 15 April 1936 Air Staff Memorandum dealing with the tactical employment of air forces in the Australian context.[31]

The 'Coast Reconnaissance' and 'Naval Co-operation' papers served as a watershed in Air Force maritime rationale. The papers were to be submitted by 16 October 1935. No.101 Flight responded on 15 October. However, due to 'Seaplane Squadron [having] been without the Officer Commanding ... for eight months' No.1 Flying Training School did not respond until 29 January 1936.[32] The *Coastal Reconnaissance* paper, recognised that the subject 'as far as Australia is concerned, is one which has scarcely been considered in theory or attempted in practice, except occasionally under special and artificial conditions which provide no sound basis on which to build'. The paper identified a requirement for strategic and tactical reconnaissance. Long-range seaplanes operating from Thursday Island, Papua New Guinea, New Britain and New Ireland should undertake the former. A standard to be met for a tactical reconnaissance aircraft was a range of a least 750 miles and a speed of 150 mph. These aircraft would be based to cover focal areas near the Australian coast and terminal shipping areas. The main threat would be by sea attack on trade by submarines, mines and armed raiders and a secondary threat by air attack from an 'island off the Australian coast (e.g. Lord Howe Island) or from an aircraft carrier'. The latter was considered 'practically impossible'. Therefore the role of the coastal reconnaissance aircraft was four-fold: to locate enemy ships, to ensure that they remained away from focal and terminal areas by bombing attacks, to remain in contact until intercepted by surface forces, and to escort convoys through the area. To

[31] Coulthard-Clark, *The Third Brother,* p. 446.

undertake these tasks dawn and dusk patrols were recommended. It was accepted that vital areas such as the industrial complex in the Sydney-Newcastle area would require special attention. The paper stressed the 'first importance' of reconnaissance to the efficiency of a striking force, and was cognisant of the fact that coastal reconnaissance was 'normally the duty of flying boats, but on account of their cost it is impracticable at the moment to provide them in adequate numbers'. The paper had recommended that thirteen aircraft were required at each of seven patrol areas - a total of 91 seaplanes. Although the paper concluded with the familiar economic argument that 'it might appear at first glance that the expense is not warranted but one can buy over 100 coastal reconnaissance aircraft for the price of one cruiser and obtain a greater measure of protection', it became the basis for Air Force policy until the advent of war in 1939.[33]

Flight Lieutenant E.G. Knox-Knight, the commander of No.101 Flight, forwarded a paper titled *The Tactical Employment of Air Forces in the Local Defence of Australia Naval Cooperation,* on 15 October 1935. This paper discussed the limitations on aerial reconnaissance due to weather conditions and described the principal services that aircraft could perform in conjunction with the fleet. They were:

> (a) Establishing early contact with the enemy fleet and maintaining it until touch has been gained with it by our own surface ships.
> (b) Damaging the enemy battle ships with the object of allowing our own battle fleet to overtake them.
> (c) Attack on aircraft carriers and denying the use of the air to the enemy fleet.
> (d) observation during the action of the movements of the principal units of the enemy fleet, including mine layers, and the firing of torpedoes, thus giving the Admiral fuller and earlier information than

[32] 15/501/3, CRS A1196, AA.
[33] Commander No.1 FTS to Secretary, Air Board, 29 January 1936, ibid.

> he can expect from surface ships, particularly when the enemy fleet is partly hidden in smoke.
> (e) Report inclination and alterations of course of the targets being fired at by the battle fleet and to observe the fall of shot.
> (f) Attack with machine gun fire and with light bombs on exposed personnel as a means of causing casualties and confusion at critical moments.
> (g) Lookout ahead of both fleets beyond the view of surface ships for vessels or submarines approaching.
> (h) Detecting and attacking submarines and mine layers working in co-operation with anti-submarine surface vessels.
> (i) laying smoke curtains, or gas clouds.[34]

The thrust of the paper followed then current Royal Navy doctrine that carrier borne aircraft were to be operated with the aim of bringing an enemy in range of the main batteries of the battleship line. The aim of torpedo attacks was to damage enemy vessels to enable contact to be made. Attacks on aircraft carriers were of secondary importance, with the intention of 'inflicting damage on the landing decks' to prevent flying operations. The potential of the airborne torpedo was undervalued. John Winton quotes Lieutenant A.S. Bolt RN, an observer who served aboard HMS *Glorious* during January 1932: 'our dropping range was eight hundred yards, our height fifty feet. But it didn't matter how many "hits" you achieved on the battleships, they always said, "Oh it'll be quite different when all the guns are firing at [the torpedo bombers], they'll never come as close as that.'[35] Knox-Knight's paper reflected this confidence, if not arrogance, of the 'big gun navy' school.

In the second section of his paper, *Courses Open to the Enemy,* Knox-Knight identified three anticipated modes of attack. The first was the invasion of Australia by

---

[34] Flight Lieutenant Knox-Knight to Secretary, Air Board, 15 October 1935, ibid.
[35] J. Winton, *Carrier Glorious: The Life and Death of an Aircraft Carrier,* Arrow Books, London, 1989, p 34.

a hostile power, but he argued that while the British navy remained undefeated this would be an untenable option. In so doing he reflected a commonly held illusion of the power of the Royal Navy, categorically stating that 'if the British navy were defeated, the Empire would be forced to sue for peace on the best terms obtainable'. In the case of a major conflict in Europe and 'if one of the great powers of the Pacific Ocean was hostile' Australia could be subjected to major raids by 'squadrons composed of several capital ships, an aircraft carrier, and sufficient cruisers and destroyers for their protection against any force which might attack them from Singapore'. The third option was not conditional on Britain being involved in a European war. It was envisaged that individual cruisers would attack the shipping routes. Knox-Knight reasoned that the most likely attack on Australia would be undertaken by a major raiding force of battleships and aircraft carriers, using the latter's air component to attack focal points such as Sydney, Brisbane and Newcastle. He could not envisage a naval counter to such a force. The RAN operating in home waters could not 'be strong enough' to engage a major raiding force and, lacking aerial reconnaissance from an aircraft carrier, would be liable to interception and destruction by the enemy. The maximum speed of the seaplane carrier HMAS *Albatross,* when compared with other fleet units, placed the fleet at a disadvantage in a combat situation. The aircraft embarked were incapable of striking at an enemy fleet. In his conclusions Knox-Knight espoused Air Force's nascent view on the problem of maritime defence. He admitted that RAAF forces allocated to the Navy were 'inadequate in numbers and performance' to fulfil all major naval requirements, and conceded that a *bona fide* aircraft carrier would embark suitable aircraft to

undertake the reconnaissance, strike and naval cooperation tasks. In the absence of an aircraft carrier he concluded that:

> ... the additional torpedo bomber and fighter aircraft required by the Navy could be more profitably employed at focal points in the coast under the control of the Air Board, than in Naval co-operation duties, ... [and]
> All RAAF units, in addition to their normal duties, should be trained as striking forces against aircraft carriers and capital ships.[36]

The RAAF and RAN had, as has been noted, an embryonic working organisation to coordinate and control maritime operations which could be expanded in time of war. With the publication of the above papers, Group Captain McCauley laid the intellectual foundation for the development of the RAAF's maritime force in the Second World War. Although the ideas espoused reflected the current RAF policy and it is not obvious that the authors were cognisant of development in the United States, they were an important step in the codification of RAAF doctrine and operational procedures. The attitude that the policy and procedure followed by the 'mother' RAF was irrevocable truth, as was the power of the Royal Navy to base a main fleet at Singapore at times of dire international stress, was a constant, if subliminal, theme. As will be discussed in the context of wartime operations mounted from North Western Area, these truths had a profound effect on the deployment of RAAF maritime units. If the theory of operations was articulated, its realisation required the political will to ensure appropriate equipment, manning and bases were in place to enable theory to be transmuted into practice. Fortuitously, these papers were drafted at a period that influential Australian government ministers, such as

[36] Knox-Knight to Secretary, Air Board, op.cit.

minister for defence George Pearce, were being troubled by the Japanese incursion into Manchuria and the nascent National Socialist Party in German. The improving economic outlook also eased the restrictions previously placed on attempts to re-equip the Services. Even so, there were many factors to be discussed that hampered the RAAF in its efforts to fulfil the promise of the papers produced as a result of Group Captain McCauley's initiative.

Re-equipment of the Maritime Force.

Policy requires equipment for its implementation. Both flying boat and long-range land planes were required for the coastal reconnaissance and strike roles. Participation in separate RAN cruises to the Mandated Territories of Papua New Guinea by Hempel and Mustard in 1923, and the flight made by McIntyre and Williams in 1926, had confirmed the facilities for the operations of land planes in the area were inadequate. This geographical assessment, combined with the perceived enemy threat to Australia, influenced the selection, and operational deployment, of maritime patrol aircraft.

Admiral Lord Jellicoe arrived in Australia in May 1919 and handed his completed report on the naval defence of Australia to the Governor-General in August. In his document, Jellicoe 'stated that a rising tide of ill-feeling against Britain - which was evident during the war - was reported in Japan, and that danger of invasion of Australia would exist as long as the White Australia policy remained in force'.[37] The Japanese naval potential in the Pacific Ocean was a recurrent theme in the inter-war period and one that influenced the decision to construct a major RN fleet

base at Singapore. The direct repercussions of this resolution on the RAAF operational deployments will be discussed later. However, the development of the fleet base and the promise that a RN battle fleet would be based at the facility was a major influence on Australia maritime policy, and on the selection of RAAF equipment. Although Australian government and military authorities had reservations regarding the ability of the RN to meet its commitment to dispatch a substantial naval force to Singapore in the face of simultaneous war in Europe and the Pacific,[38] the ramifications to Australia of the 1920 denunciation of the 11 February 1902 Anglo-Japanese Treaty, which ensured the neutrality of the signatories in the event of participation by either nation in a war in defence of its national interests,[39] and the provisions of the November 1921 Washington Conference, were influential events that ensured that Australian defence policy was linked to the 'main fleet to Singapore' concept.

Japan, as a result of the Washington Conference, was restricted to construct capital ships and aircraft carriers tonnage not to exceed 60% of that built by each of the United States and the British Empire in these categories. This figure ensured that the Japanese navy in the Pacific would have a numerical superiority over any individual force deployed by either the RN or United States Navy.[40] From an Australian perspective, the Japanese threat could not be mollified by the promise of RN battle fleet being sent to Singapore. While this force was en route, the Japanese

---

[37] G.H. Gill, *Royal Australian Air Force 1939-1942,* Australian War Memorial, Canberra, 1957, p 4.
[38] McCarthy, *Australia and Imperial Defence,* pp 44-63; Gill, *Royal Australian Navy 1939-1942*, p 11-20.
[39] Gill, *Royal Australian Navy 1939-1942,* p 8.
[40] ibid, p 10; Baer, *One Hundred Years of Sea Power,* pp. 104-18.

Navy would 'enjoy a great preponderance of force and the [Australian Chiefs of Staff] agreed on the certainty that the enemy would make extensive raids on overseas trade routes together with local ports, cities, and coastal shipping'.[41] As the probability of conflict between Britain and Germany became more likely, the probable threat of German commerce raiders operating off Australian ports became, following the First World War *Wolf* precedent, a factor that could not be ignored.

The RAAF therefore sought two types of aircraft to equip its maritime squadrons. To warn of any potential aggression by Japanese forces in the ex-German islands to the north of the New Guinea and New Britain, long range flying boats were required for reconnaissance and strike operations. For the defence of focal areas and to act as a strike force in support of both naval and army operations as possible reinforcement of RAF squadrons based at Singapore, twin-engine land based aircraft were necessary.

International events were to make the parlous state of RAAF equipment a matter of political concern. The Japanese invasion of Manchuria and the nascent Nazi regime in Germany were indications of a tangible threat to the Empire and to Australia. On 26 March 1934 defence minister Sir George Pearce requested an increase of £1,537,810 as a 'first step toward the continual development of an effective defence policy.' Pearce advocated to Treasurer Joe Lyons that, if the RAAF was, to 'continue the development of co-operation in the defence against raids', as 'the latest type of fighting aircraft is now four or five years old and the numbers are continually being reduced [it was] obviously … time that steps were taken to re-equip

[41] Stevens (ed); *The Royal Australian Navy*, p 78.

the existing service'.[42] Thus the RAAF had governmental backing to actively seek aircraft that would enable it to fulfil the maritime conception as articulated in the papers prepared for Group Captain McCauley.

On 20 September 1934 the Air Liaison Officer (ALO) in London forwarded details of the Avro Type 652A Anson Coastal Reconnaissance aircraft. The possible purchase of this aircraft to equip the proposed squadrons at Perth, Sydney and Melbourne with the type was raised with the Secretary of the Department of Defence on 23 August 1935.[43] Although considered an interim type by the RAF, the Anson, when ordered in November 1934, was a 'modern' type: the first monoplane, the first aircraft fitted with a retractable undercarriage, the first fitted with an enclosed gun turret, in RAAF service. Even though an active search for a replacement commenced before the first aircraft was delivered in November 1936, 1028 individual aircraft served with the RAAF until the last was retired from service in October 1955.[44] By 1940 the aircraft had been superseded by the Lockheed Hudson in the general reconnaissance role.

On 22 May 1936 Squadron Leader O. Gaylord, RAF, responded to the request of 11 May by the Australian Liaison Officer (ALO) at the Air Ministry in London, for information on possible Anson replacements. The advice favoured another interim type, the Bristol Type 149. This aeroplane was a general reconnaissance version of the Bristol Type 142 Blenheim, the prototype of which, with a maximum speed 40 mph

---

[42] Records of Sir George Pearce, 3DRL 2222 (3rd S), Microfilm No. 10027, Roll 2, Bundle 4, Item 47, AWM.
[43] Air Liaison Officer, London, 20 September 1934; Secretary, Air Board, to Secretary, Department of Defence, 23 August 1934, 121/2/247, CRS A705/1, AA.
[44] Wilson, *Military Aircraft of Australia*, p 24.

faster than the Hawker Fury bi-plane fighter then currently in service with the RAF, had proved such a sensation when it flew in April 1935.[45] To meet the general reconnaissance specification, the fuselage was stretched by an extra two feet and provision was made for a wireless operator. With a maximum speed estimated at 270 mph and a range of 1000 miles, the aircraft looked an attractive prospect. Williams, the Chief of the Air Staff, minuted the Air Member for Supply on 27 July 1936 that he thought that 'we should now enquire by signal as to the position re dates for supply of [the] Blenheim'.[46]

The information was sought from the ALO on 27 July 1936. In his reply dated 27 August the Liaison Officer mentioned the Bristol Type 152 Beaufort general reconnaissance/torpedo bomber for the first time. This aircraft was due to commence production in 'late 1938' and was to be introduced as the standard equipment of RAF general reconnaissance squadrons.[47] By implication the Bristol Type 149 must be seen in the same light as the Anson - an interim type to be replaced by the Beaufort. However, RAAF plans to raise two general reconnaissance units in April 1937 called for action to acquire appropriate aircraft and the Air Board hastened the ALO on 27 September 1936 for delivery detail of the Bristol 149.[48] It was two months before London could give definite advice, and even then it did not meet Australian requirements. The planned production schedule for the Bristol 149 called for one aircraft in May 1937, with the rate increasing to eight a month by October 1937. The

[45] W. Green, *Famous Bombers of the Second World War, Second Series,* MacDonald, London, 1969, p 10. A full account of the development of the Blenheim is given on pp 7-19.
[46] CAS to AMS, 27 July 1936, 1/501/213. CRS A 705, AA.
[47] ALO to Air Ministry, to Air Board, 27 August 1936, ibid.
[48] Air Board to ALO, 27 September 1936, ibid.

Air Ministry anticipated that it 'could arrange delivery [of] forty[of the Bristol] 149 in [the] first quarter of 1938, provided assurances that order will be place is given now.'[49] Although the introduction of the type did not meet Australian planning requirements, the Air Board acceded to Air Ministry pressure and gave assurances that an order would be raised for forty Bristol Type 149 aircraft. At the same time the Air Ministry offer of two dual control aircraft was accepted to enable the 'two 149 squadrons [that were to] form [on] April 1st next year' to be trained on the type, pending delivery of the remainder or the order.[50]

An order for 40 Bristol Type 149 (now named 'Bolingbroke') was placed on 22 January 1937.[51] The Bristol program did not meet RAAF re-equipment priorities. During the 1937/38 financial year the RAAF planned to raise and equip No. 6 Squadron with nine Bolingbroke aircraft in the general reconnaissance role and nine Wirraway aircraft as fighter-bombers.[52] The Bolingbroke was not destined to meet the RAAF general reconnaissance requirement. On 23 December 1937 the Air Ministry advised, through the ALO, that

> It is regretted that in the interval the production programmes of the Blenheim and Bolingbroke types have undergone considerable revision and it now appears unlikely that deliveries to Australia can be made in the first quarter of 1938. Every endeavour will be made to complete deliveries as early as possible in 1938 but a definite indication of the probable delivery dates cannot be given until completion of tests of the prototype Bolingbroke in July next.[53]

---

[49] ALO to Air Board, 1 November 1936, ibid.
[50] Air Board to ALO, 24 November 1936, ibid.
[51] Air Board Order No. 550, 22 January 1937, ibid.
[52] Air Board Agenda No. 2128/1937, 12 November 1937, RHR.
[53] ALO to Secretary, Department of Defence, 22 April 1937, 1/501/CRS A705, AA.

Worse news was to follow in December. After a personal interview with the Air Member for Supply and Equipment (AMSE) at the Air Ministry on 23 December, the ALO advised that the RAF had decided not to produce the Bolingbroke. The choice for the RAAF was to wait and order the Blackburn Botha or Bristol Beaufort to operate in the general reconnaissance role. The AMSE would 'do everything possible to ensure the earliest delivery' of the chosen type.[54] The RAAF responded on 7 January 1938 that it was considering the substitution of the Beaufort for the Bolingbroke and seeking information on the delivery of ten additional Anson aircraft to fill operational requirements.[55] Formal approval was given for this purchase in March 1938[56] with ministerial approval for the purchase of forty Beauforts being sought on 23 August 1938.[57]

It is outside the scope of this thesis to delve into the discussion that led to the production of the Beaufort aircraft in Australia.[58] However the Czechoslovakian crisis of September 1938, which resulted in the infamous Munich Agreement signed by the British Prime Minister Neville Chamberlain and Chancellor Adolf Hitler of Germany, threw doubts on the delivery of Beauforts to the RAAF. This was a matter of concern to the Air Board. On 20 December 1938 the Board discussed an alternative source of aircraft. The British Air Ministry was also concerned with the pace of its re-

---

[54] ALO to Air Board, 23 December 1937, ibid.
[55] Air Board to ALO, 7 January 1938, ibid.
[56] Air Board Agenda No. 2182, 9 March 1938, RHR.
[57] Air Board Agenda No. 2284, 23 August 1938, RHR.
[58] The manufacture of the Beaufort aircraft in Australia and its introduction into service is described in S. Wilson, *Beaufort, Beaufighter and Mosquito in Australian Service,* Aerospace Publications, Canberra, 1990; D.P. Mellor, *The Role of Science and Industry,* Australian War Memorial, Canberra, 1958;.A.T. Ross, *Armed and Ready. This Industrial Development and Defence of Australia 1900-1945,* Turton &Armstrong, Sydney, nd, pp 285-93.

equipment. A British Mission was sent to the United States of America to order various types of aircraft for service in the RAF. One of the aircraft developed for RAF service was the Lockheed B14 Hudson, a militarised version of the Lockheed 14 twin-engine civil transport. The British Mission ordered 200 examples of the type, and the Australian Air Board considered that the Hudson offered a viable alternative to the possible unavailability or slow delivery of the Beaufort on order. The Minister signed Overseas Order No. 680 on 24 January 1939 for 50 Hudson aircraft.[59] On 29 August the Air Board recommended to Cabinet that an extra 30 aircraft be purchased (with an option of another 20) and recommended on 12 September that the option be invoked. The Minister concurred with this action next day, and he signed Overseas Order No. 730 in October. The manufacturer promised deliveries on 7 November, 16 December 1939, and 7 January 1940 and then at a rate of 10 per month for two months.[60] The RAAF operated 247 Hudson aircraft that were delivered between January 1940 and May 1942.[61] These aircraft replaced the Anson in the RAAF's maritime strike and reconnaissance role.

Replacement of the Supermarine Southampton flying boats was mooted on 15 August 1938 when the acting Chief of the Air Staff requested technical detail of new flying boats from the ALO.[62] Twelve months later the ALO responded with detail of the Scapa, London, Singapore 3, Stanraer, Lerwick and Sunderland flying boats and quoted the respective costs of the Stanraer, Sunderland and Lerwick at £29,000,

[59] Air Board Agenda No. 2377, 20 December 1938, RHR.
[60] Air Board Agenda No. 2600, 25 October 1939, RHR.
[61] Wilson, *Military Aircraft of Australia,* p 136.
[62] Acting CAS to ALO, 15 August 1938, 1/501/224, CRS A1196/1, AA.

£42,000 and £38,000. The Supermarine Stanraer was a lineal development of the Southampton but the performance of the type was not comparable to that of the four engine Short Sunderland or that of the twin engine Saro Lerwick.[63] During August 1938, the Acting Chief of the Air Staff commenced a written dialogue with the ALO seeking information on comparative prices - 'price of Lerwick appears high in comparison to the Sunderland'[64] - ending with the retort that the choice of the replacement aircraft could not be settled until 'we have more detail of the Lerwick'.[65]

On 19 October Squadron Leader E.C. Sims was requested to obtain all the available information on the Lerwick and Sunderland.[66] Sims was given a flight in the Lerwick on 12 February 1939 and reported favourably on the aircraft.[67] Sims' report showed the aircraft in a better light than the results of subsequent flight trials. The aircraft exhibited unsatisfactory handling characteristics. Twenty-one examples of the type were ordered for service in the RAF, but the type proved unsuitable for operations and was withdrawn from service in 1941.[68]

Williams, back as Chief of the Air Staff, was of the opinion that the aircraft purchased should be amphibious. Four would be deployed to Port Moresby, where they could be reinforced by land planes from Townsville, four remain in New South Wales and one remain in reserve. The preferred aircraft, the Catalina, had the advantage that it was fitted with identical engines as the Hudson. However, the

---

[63] *An Illustrated Encyclopedia of Aircraft,* Orbis, London, 1981-85, p 2980.
[64] Acting CAS to ALO, 17 August 1938, 1/501/224, CRS A1196/1, AA.
[65] Acting CAS to ALO, 29 August 1938, ibid.
[66] Correspondence, 19 October 1938, ibid.
[67] ALO to Air Board, 13 February 1939, ibid.
[68] *An Illustrated Encyclopedia of Aircraft,* p 2880.

amphibious landing gear was 'as yet on the drawing board'.[69] Williams was replaced by Goble as Chief of the Air Force Staff next day and could not press his case. On 26 April 1939 Goble recommended that nine Sunderlands be purchased to equip Nos 10 and 11 Squadrons. Four aircraft would be issued to each squadron. Although the cost of the Catalina at £58,167 compared favourably with that of the Sunderland's £61,568, Goble preferred the British type and was aware that supplies of aircraft and spare parts from the United States could prove difficult due to 'political or other reasons'.[70]

Ironically the Sunderlands did not operate in their desired role in the South West Pacific Area. Crews of No. 10 Squadron were either en route or in England when was declared on 3 September 1939. The Australian Government offered the squadron for service with RAF Coastal Command, and it was not until January 1944 that the first Sunderland operated in Australia. Six of the aircraft equipped No. 40 Squadron, transporting troops and equipment to New Guinea and northern ports.[71] A further irony was that, on 5 June 1940 an order was placed for seven Catalina flying boats. A follow up order for 11 was issued on 3 September 1940.[72] No. 11 Squadron, based at Port Moresby, initially operated the type. In total 168 Catalinas served with ten RAAF units.[73]

---

[69] CAS to Secretary, Air Board, 27 February 1939,1/501/224, CRS A1196/6, AA.
[70] Correspondence, 26 April 1939, ibid.
[71] For a brief history of No. 40 Squadron operations see *Units of the Royal Australian Air Force, a Concise History,* Volume 4, pp 72-4.
[72] D. Vincent, *Catalina Chronicle: A History of RAAF Operations*, Catalina National Committee, Adelaide, 1981, p 10.
[73] *Units of the Royal Australian Air Force*, Volume 10, p 9.

When was declared in 1939 the RAAF had established procedures and equipment was on order to meet its maritime operations. The adequacy of the procedures and the suitability of the equipment could only be tested in the crucible of war, but it must be stated that the initial fulfilment of RAAF aspirations was constrained by the inability of British aircraft industry to supply, or deliver on schedule, aircraft that would meet Australian requirements. As articulated in parliament by George Pearce on 21 May 1936 there was an Australian tradition of equipping the RAAF with British aircraft. This perception - British is Best - was associated with the presumption that the RAAF would always operate as part of an RAF led Empire Air Force and therefore require standardisation with the 'mother' service. Given this expectation, it is a reasonable assumption that Dominion air forces would have been given some degree of favour in the filling of equipment orders. However, the actual status given to them was due to a combination of factors. As John McCarthy records, the low priority given to Dominion aircraft orders was due to British manufacturers accepting orders from foreign countries,[74] and the inability of the British aircraft industry to supply the numbers and types of aircraft required for the RAF (and RAAF) expansion led to a British Purchasing Commission visiting the United States of America to purchase equipment. The RAAF took advantage of this development to ensure that the Lockheed Hudson became the front line maritime aircraft operated by the RAAF in 1942. The Beaufort was not operational with the RAAF until late that year. If the Hudson had not been available, the only land-based

[74] McCarthy, *Australian and Imperial Defence 1918-39,* p 109.

maritime aircraft in service would have been the venerable Anson that was, even then, obsolete in any operational role.

3

AUSTRALIAN COMMERCE PROTECTION-PROVISION OF AIRCRAFT AND ORGANISATION

The provision of aircraft

When the Second World War broke out on 1 September 1939 the RAAF had a distinct maritime orientation. With an operational strength of 164 aircraft,[1] 95 (58%) were on the strength of ten squadrons with a maritime role and a limited capability to undertake the task[2]:

Squadron No.	Location	Aircraft	Quantity
1	Laverton Vic	Anson	11
2	Laverton Vic	Anson	10
6	Richmond NSW	Anson	12
12	Darwin NT	Anson	7
		Wirraway	5
14	Pearce WA	Anson	12
21	Laverton Vic	Anson	4
		Demon	9
		Avro Trainer	4
22	Richmond NSW	Anson	8
		Wirraway	4
		Moth	3
23	Archerfield Qld	Anson	4
25	Pearce WA	Anson	4
		Demon	5
		Avro Trainer	3

In addition No. 8 Squadron was equipped with four Douglas DC-3 aircraft leased from Australian National Airlines when it formed at Canberra in October 1939. Seventy-two obsolescent Anson aircraft was not an impressive seaward reconnaissance capability, and nine Wirraway advanced trainers hardly an effective strike force. Modern civilian airliners outpaced the obsolete two seat Demon fighters and the Moth

[1] D. Gillison, *Royal Australian Air Force 1939-1942,* pp 91-3.
[2] Based on figures recorded in the respective Operational Record Book (ORB) for September 1939, with the exception of 22 Squadron (July) and 23 Squadron (April).

and Avro Trainers were basic training bi-planes. This meagre force was further weakened when Nos 1, 8 and 21 Squadrons were deployed to Singapore in July/August 1940.

The squadrons based at Laverton, (Nos. 2, and 21) flew coastal reconnaissance missions from advanced operational bases as far west as Ceduna in South Australia and as far south as Hobart, Tasmania. They also flew out of Bairnsdale on the Victorian east coast and the airfield at Currie, King Island, located in the centre of the western approaches to Bass Strait. The squadrons were faced with threat that could prove a reality at any time. German raiders were capable of laying minefields off Australian focal points and interfering with maritime trade. On 1 September 1940 No. 2 Squadron crews searched 'to [a] depth of 300 miles … for the raider [the German commerce raider *Orion*] that had shelled the SS *Turakina*'.[3] The units at Richmond and Archerfield flew similar operations; the two Citizen Air Force squadrons (Nos 22 and 23) interspersing army cooperation tasks with maritime patrols.

Several training units augmented these squadrons. The General Reconnaissance School had been combining seaward reconnaissance and mine observation sorties since the outbreak of war.[4] On 13 November 1940 the Air Board ordered that 'until further notice all navigation training by [General Reconnaissance] aircraft would be to seaward'.[5] Despite these measures the sparsity of aircraft to defend seaborne commerce was a constant concern. The problem was exacerbated as units were later deployed overseas to meet national policies and operational requirements. The signing of the Empire Air Training Scheme (EATS), an agreement

[3] No. 2 Squadron Unit History Record (UHR), 1 September 1940, RHR.
[4] General Reconnaissance School ORB, September 1939, RHR.
[5] Air Board to Darwin, Townsville, Archerfield, Laverton and Pearce, 13 November 1940, 2/2/35 CRS A11065; 7/3/Air, CRS A11297, AA.

between the British governments of Britain, Australia, Canada, New Zealand and Rhodesia to train aircrew for service with the RAF, on 17 December 1939 brought with it the promise of 591 Anson and 336 Fairey Battle light bombers being supplied to the RAAF by the United Kingdom. Even though these aircraft were allocated for training purposes Prime Minister R.G. Menzies, in a press statement made on 29 February 1940, alluded to a great increase in aerial strength and claimed that these aircraft were 'capable of holding their own against any seaborne aircraft likely to be brought against them in Australian waters'.[6]

Menzies' conception took root. On 31 July 1940 the Chief of the Air Staff, Sir Charles Burnett, approved the suggestion made by his Deputy, Air Commodore W.D. Bostock, that to overcome the shortage of home defence aircraft a proportion of service types being operated by EATS dedicated Service Flying Training Schools be operationally equipped. These aircraft would then form a second line home defence force.[7] Burnett decreed that half of the Anson aircraft in the establishment of Service Flying Training Units would be fitted with operational equipment such as a free firing Vickers gas-operated machine gun, a fixed Vickers Mark V machine gun, bombing gear and necessary navigation aids and radio. First and Second Pilots were to be drawn from the flying instructors and crew members obtained from the unit and qualified staff from Air Observer and Air Navigation Schools if required. The units flying Battles were to be equipped and manned in the same manner. Burnett estimated that this action would provide a reserve force of three squadrons of Anson aircraft and two of Battle light bombers.[8] Burnett had conceded that equipment not needed for the

[6] Gillison, *Royal Australian Air Force 1939-1942,* p 91.
[7] Bostock to Burnett, 23 July 1940, 1/501/355, CRS A1196/6, AA.
[8] Correspondence 2 August 1940, ibid.

training function of the school need not be installed in the aircraft but should be available for immediate fitting should the need arise.

On 12 March 1941 the Air Officer Commanding Southern Area reported on an exercise undertaken to test the appropriateness of this policy. The exercise conducted at Point Cook, Victoria, had resulted in 11 Anson aircraft being brought to a fully operational state in a period of one hour 32 minutes.[9]

These plans did not ease the concern of the Air Officer Commanding Western Area, Air Commodore H.F. De La Rue. On 18 April 1941 he recommended that the Air Board base a squadron of Catalina flying boats at Albany. He argued that the existing general reconnaissance squadron then based in the west (No.14) was:

> scarcely adequate to cope with this work as efficiently as desired, especially as the RAN [did not] station a ship of sufficient power in the vicinity to cope with any possible enemy. It is true that 14 Squadron could carry out an attack, but many of the aircraft may quite likely be on patrol distinct from the required point when required....
> [The] South West corner is a vital focal point. If attacked by the enemy [it enables] him every opportunity of escaping to the southward into the area of leaden skies and high winds, where his discovery is extremely unlikely.

De La Rue requested aircraft of longer range than the Hudsons that equipped No.14 Squadron to guard against this possibility. He also recognised that Japanese whaling mother ships passed along the shipping lanes well to seaward and that the longer range of Catalina aircraft would enable their activities to be monitored.[10] Group Captain F.M. Bladin, the Director of Operations and Intelligence, replied on 16 May to the effect that consideration was being given to the establishment of another general

[9] AOC Southern Area to Air Board, 12 March 1941, ibid.
[10] Air Commodore H.F De La Rue to Secretary, Air Board, 18 April 1941, 50/501/53, CRS A1196, AA.

reconnaissance squadron in the west. However, Catalina aircraft had been allocated 'for use in Northern Area where it [was] not possible to use land based aircraft'.[11]

The policy regarding reserve squadrons was refined on 22 May 1941 when Air Force Headquarters advised that Service Flying Training Schools could be required to provide squadrons for general reconnaissance duties to seaward. Bombing and Gunnery Schools were advised that they would be expected to provide two general purpose squadrons and these squadrons could be moved to an 'operational station if required'.[12] Each general-purpose squadron would be equipped with 12 Battle aircraft, with another four aircraft and crews as a common reserve. It was envisaged that the aircrew would be trained to navigate to, defend themselves en route, and dive bomb enemy ships. Providentially, a staff paper forwarded to the CAS considered that general reconnaissance units at Service Flying Training Schools 'would be of little immediate value' and 'in view of the inability to train GR reserve crews simultaneously with the carrying out of Empire Air Training Scheme training work', detrimental to the latter.[13] The logic of this argument was realised. On 8 December the Air Board contacted Southern Area, Western Area, Northern Area, No. 1 and No. 2 Training Groups to advise them that 'the preparation of second line aircraft must be finalised as far as possible without interfering with training'.[14] Obviously the organisation and operation of an active squadron within the overall responsibility of a training establishment was placing unwarranted strain on personnel and equipment.

The rational response was to establish the Reserve Squadrons as units in their own right. Four such squadrons were created. The first, No. 73, was formed at

---

[11] Group Captain F.M. Bladin to De La Rue, 16 May 1941, ibid.
[12] Correspondence, 22 May 1941, ibid.
[13] Staff Paper to CAS, 5 July 1941, ibid.
[14] Air Board to Southern Area, Western Area, No. 1 Training Group, No. 2 Training Group and Northern Area, 8 December 1941, ibid.

Cootamundra, New South Wales, on 1 July 1942, and was followed by No. 67 at Laverton, Victoria, on 6 January, No. 71 at Lowood, Queensland, on 26 January 1943 and No. 66 at Bundaberg, Queensland, on 20 May 1943.[15] These squadrons were to be operated as anti-submarine patrol units. They would remain under the control of the relevant Training Group and the procedure to authorise the operational deployment of the reserve squadrons was laid down by Air Force Headquarters on 17 October 1942:

> A). RAAF Command is to request RAAF Headquarters to make reserve squadrons available for operations.
> B). RAAF Headquarters will authorise the employment of the squadrons and take action to place them under the appropriate Area Headquarters for operational control and will instruct Training Groups to this effect.
> C). Training Groups are to take action only on receipt of the instructions from RAAF Headquarters.[16]

Even though the squadrons were to be classified as operational, the training unit genesis coloured the attitude of RAAF Headquarters. In April 1943 Bostock requested that Nos. 67, 71 and 73 Squadrons be regarded as 'fully GR/B units and that the crews therein should have passed through the general reconnaissance operational training unit' and also requested that the current policy of 'turning over' five crews per month from the reserve squadrons cease to enable 'some stabilisation … in order to produce a higher rate of efficiency'.[17] By inference crews were being posted from service flying training units direct to the reserve squadrons for training prior to undertaking operational training for service in Beaufort equipped operational squadrons. The Director of Postings compromised by proposing that the policy would be varied to change over three Anson crews per squadron each month. This policy

[15] Squadron entries, *Units of the Royal Australian Air Force* Volume 4.
[16] Air Board to Allied Air Headquarters Brisbane, 17 October 1942, 322.172B, CRS A11093/1, AA.
[17] Group Captain F. Thomas (DATO) to Director of Training, 28 April 1943, 208/1/2293, CRS A705/2, AA.

would represent a tour of six months and 'submitted that this is a reasonable and sufficient period for all purposes'.[18] The RAAF Headquarters view was that aircrew posted to the reserve squadrons had

> completed all phase of GR work at the GRS and they should be fully capable of undertaking any task allotted to them in their present role. They are placed in these squadrons *to acquire extra flying before being posted to the OTU, or alternatively, have been moved from the OTU because they lack sufficient flying experience to be able to cope with Beaufort and Hudson types* [emphasis added].

The reality that there were no suitable aircraft available to undertake general reconnaissance training, and that aircrew were obtaining useful experience that eased their conversion at operational training units, were the reasons for RAAF Command agreement to this policy on 27 May 1943.[19] A further example of the RAAF Headquarters attitude toward the role of the Reserve Squadrons occurred on 11 June when RAAF Headquarters signalled Eastern Area and RAAF Command for nominations from Nos 67, 71 and 73 Squadrons for three crews each to undertake operational training in Beaufort and Catalina aircraft.[20]

The priority given to the supply of aircrew to continental based anti-submarine and maritime protection squadrons was not high. RAAF Headquarters saw the reserve squadrons as a useful addition to the training system. By 1944 the Australian coastline was an area in which 'enemy submarine operations are improbable and counter measures are not necessary without intelligence to the contrary'.[21] Even so Bostock's plan to utilise the units to meet trade protection and anti-submarine contingencies that may arise along the Australian coastline was prudent. On 20 September 1944

---

[18] DATO (for CAS) to Headquarters RAAF Command, 15 May 1943, ibid.
[19] Group Captain W.N. Gibson to RAAF Headquarters Forward Echelon, 27 May 1943, ibid.
[20] RAAF Headquarters to Eastern Area, RAAF Command, 11 June 1943, ibid.
[21] Group Captain J.A. Mitchell, HQAAFSWPA, to AVM Bostock, 9 October 1944, 565.4E Pt3, CRS A1969/100, AA.

intelligence sources in Brisbane advised that there were reliable indications that German submarines would be operating in Australian waters.[22] Indeed, U-862 operated with some success off the Australian coast in late 1944/early 1945.[23] In the meantime Bostock's aim to use the squadron in an anti-submarine role and thus enable graduates of operational training units to obtain some operation experience before posting to forward areas had not varied.[24] RAAF Headquarters 'conceded' to this arrangement but only after negotiations by RAAF Command.[25] Bostock's Senior Air Staff Officer, Group Captain C.D. Candy, had previously warned him in July that as the maintenance organisation was 'incapable of enabling such squadrons to meet their full flying commitments' there would be a 'general tendency … for these squadrons to be regarded by RAAF Headquarters, and employed by Area Headquarters, as advanced flying units instead of as fully operational squadrons …'[26] To counter this possibility Bostock advised Eastern Area on 3 August 1944 that priority was to be given to operational tasks and that the matter of replacement aircraft and increased maintenance facilities was being raised with RAAF Headquarters.[27]

The three reserve squadrons raised in the Eastern States did ease, but not negate, the problem of lack of suitable aircraft. In Western Australia, the sparsity of aircraft numbers dedicated to convoy protection and anti-submarine patrols in early 1942 was eased in the short-term by a providential windfall. On 17 March 1942 three cases of aircraft arrived at the Bullsbrook railway siding. New Kittyhawk fighters were expected to equip the newly formed No. 77 fighter squadron. However, when the

---

[22] COMINTEL Brisbane to RAAF Command, 20 September 1944, ibid.
[23] For detail see D. Stevens, *U-Boat far from Home: The Epic Voyage of U 862 to Australia and New Zealand,* Allen & Unwin, Sydney, 1997.
[24] Memorandum, 14 October 1944, 565.4E Pt3, CRS A1969/100, AA.
[25] ibid.
[26] Group Captain C.D. Candy to AVM Bostock, 27 July 1944, ibid.
[27] RAAF Command to Headquarters Eastern Area, 3 August 1944, ibid.

crates were opened it was discovered that they held Fairey Swordfish. No.14 and No.25 Squadrons at Pearce operated at least six of these aircraft between 24 March and 30 April 1942 on anti-submarine flights over Gages Roads and Rottnest Island. The appearance of these aircraft and their subsequent Royal Navy service is a mystery. One explanation is that they were en route to Singapore for embarkation aboard HMS *Indomitabl*e, the aircraft carrier which, had it not grounded in the West Indies, would have been part of the task force centred around HMSs *Prince of* Wales and *Repulse.* Although there is no hard evidence to substantiate the theory it seems that the Swordfish were returned to the Royal Navy and shipped to Ceylon.[28] The fact that the use of another Service's aircraft was contemplated, let alone undertaken, is an indictment on the ability of the RAAF hierarchy to supply appropriate equipment at this time.

A year later the dearth of aircraft dedicated to commerce protection was still a matter of concern for the Deputy Chief of Naval Staff, Captain R.F. Nichols. Given the concentration of enemy submarines on the east coast of Australia at the time, Nichols wrote to the Deputy Chief of the Air Staff on 30 April 1943 that he would be 'grateful if all aircraft flying over the sea could be armed and instructed to take offensive action against enemy submarines detected or sighted outside the bombing restricted areas'.[29] Nichol's request was passed to RAAF Command on 4 May, who, in turn, referred the matter to Headquarters No.2 Training Group, Eastern Area and Southern Area for advice.[30] Group Captain A.M. Murdoch had doubts on the practicability of such a proposal. In his reply to RAAF Headquarters, which was

[28] D. Wilson, 'RAAF Swordfish', *Wings,* Volume 38, No. 2, June 1986, p 112.
[29] DCNS to DCAS, 30 April 1943, 565.4E Pt 1, CRS A11093/1, AA.
[30] Headquarters RAAF Command to Headquarters No. 2 Training Group, Eastern Area & Southern Area, 27 May 1943, 565.4E Pt 3, CRS A11093/1, AA.

forwarded by Forward Element RAAF Headquarters in Brisbane to RAAF Command on 17 December, Murdoch was 'very doubtful that a successful attack could be carried out [by ferry pilots]'. In his opinion due to the lack of briefing facilities at maintenance units and the possibility of Allied submarines transiting off the eastern seaboard, 'it would be rather dangerous for these ferry pilots to have their aircraft offensively armed'. He did concede that, if an aircraft was 'collected...by a pilot of an operational squadron, the aircraft should be armed...and the pilot properly briefed at an operational base...'[31] these considerations were incorporated in RAAF Command Operational Instruction No.142 of 27 December. Aircraft being ferried by crews from operational squadrons were to be armed. Those not were unarmed, but were to be routed coastwise. Crews were under instruction to immediately report any submarine sightings. Ironically there is no record of ferry pilots having sighted submarines after the policy had been promulgated.

North Eastern Area Headquarters were also aware of the deficiency in aircraft numbers allocated to the anti-submarine effort. On 1 February 1943 it recognised an 'urgent need for [an] additional GR/B Squadron'. As the United States Army Air Force 5th Air Force could not meet the requirement, Headquarters North Eastern Area suggested that it may be possible to meet the requirement with Reserve Squadrons equipped with Anson aircraft.[32] This consideration, coupled with the administrative inconvenience of running operational and training units in tandem and pressure from RAAF Command for the activation of a Reserve Squadron in Southern Area,[33] resulted in the raising of these units as separate identities at the times mentioned

[31] Group Captain A.M. Murdoch to Air Board, 17 December 1943, ibid.
[32] Headquarters North Eastern Area to RAAF Command, 1 February 1943, 565.4E Pt 1, CRS 11093/1, AA.
[33] RAAF Command to RAAF HQ, 16 February 1943, ibid.

above. The only unit dedicated to anti-submarine and convoy escort work on the east coast at this time was equipped with war-worn Hudson aircraft. When No. 32 Squadron returned to Camden, New South Wales, in September 1942 it was imperative that the Hudson aircraft be replaced as there were 'insufficient Hudsons [available] to keep Hudson units up to strength'.[34] However, on 8 February, RAAF Headquarters did authorise the use of Air to Surface (ASV) radar equipped aircraft from Nos.1 (Beaufort) and 3 (Catalina) Operational Training Units (OTU) and the Base Torpedo Unit at Nowra to cover convoys between Newcastle and Gabo Islands. These aircraft were to be utilised wherever possible 'as part of training exercises'.[35]

This directive was not well received by Headquarters Eastern Area, which controlled No. 3 OTU and the Base Torpedo Unit. The response was immediate and direct. RAAF Headquarters was advised that the Area required an additional 35 aircraft to augment the current strength which was 'stretched to the utmost' and that the withdrawal of aircraft as directed would result in a 'serious loss of training' and also pointed out that the directive was in opposition to 'SAS 1579 January 1943 in that Base Torpedo Unit crews were 'not (repeat) not to be used for GR/B tasks'.[36] On 9 February RAAF Headquarters compromised:

> Our A343 Feb 8 authorised use of OTU aircraft for anti-submarine patrol subject to their being suitable thus temporarily over-ruling directions given in previous letters on this subject. If use of these aircraft impracticable no repeat no further action to be taken.

Next day Eastern Area Headquarters advised that there were no aircraft available at Nowra for 'this purpose'. Southern Area was more accommodating. On 8 February it

[34] RAAF Headquarters to RAAF Command, ibid.
[35] RAAF Headquarters to RAAF Command, 8 February 1943, ibid.
[36] Eastern Area A528 to RAAF Headquarters, 8 February 1943, ibid.

advised that No. 1 OTU at Bairnsdale, Victoria, had a 'limited number of serviceable ASV aircraft but providing anti-submarine cover can be fitted in with normal training are willing to co-operate...'[37]

Efforts made to increase the number of anti-submarine aircraft by utilising training units has been discussed. Bostock was well aware of the problems, but also that little could be done in 1943 to alleviate his deficiency in numbers. On 3 December 1943 he advised the American Commander, Allied Air Forces, General George Kenney, that the 'standard of efficiency of crews engaged in anti-submarine warfare within the area of RAAF Command responsibility is high' and that he was 'investigating' equipping anti-submarine aircraft with Leigh Lights and the use of rocket projectiles. [38] The Leigh Light, a powerful searchlight mounted on anti-submarine aircraft operated by Coastal Command to illuminate surfaced submarines at night, was a weighty item of equipment which could only be fitted to large aircraft such as the Catalina flying boat and B-24 Liberator bomber. Bostock was aware of the lack of priority being given to the upgrading of anti-submarine forces as he was responding to a request from General Kenney for recommendations regarding anti-submarine measures to be followed. In his letter Kenney was adamant that it would not be possible to obtain heavy bomber units for this task, as the War Department had advised him that 'a squadron of heavy bombers specially equipped for anti-submarine work could be made available for this theatre, but in view of the fact that this squadron would be substituted for a combat heavy bomb (sic) squadron no request will be made for this unit at this time.'[39]

---

[37] Southern Area to RAAF Headquarters, 8 February 1943, ibid.
[38] AVM Bostock to General Kenney, 3 December 1943, 565.4E Pt 3, CRS A11093/1, AA.
[39] General Kenney to AVM Bostock and Brigadier General Ennis C. Whitehead, 25 November 1943, ibid.

The irony of Bostock's predicament was that during this period the RAAF took delivery of two aircraft types, which would have enabled him to undertake more than 'investigation' into the Leigh Light concept and also enhance the RAAF's anti-submarine potential. On 20 November 1943 the first of twelve PBM Mariner flying boats arrived from the United States. The United States Navy operated these flying boats in an anti-submarine role. However, the aircraft delivered to the RAAF was a transport version of the type. Although one aircraft was fitted with experimental ASV radar, the Mariners were never operated in an anti-submarine role by the RAAF.[40] Neither was the six Short Sunderland aircraft ferried from the United Kingdom. These aircraft were modified for transport duties and commenced operations with the Townsville based No. 40 Squadron on 1 July 1944.[41] Had both these types been made available they would have immeasurably increased the operational capacity of the anti-submarine force. Of greater importance was the loss of the operational experience of the veteran Australian RAF Coastal Command crews that had ferried the Sunderlands to Australia.

At the cessation of hostilities only three squadrons were dedicated to the coastal protection and anti-submarine role. The total aircraft strength was 23 Beauforts (10 being operated by No. 14 Squadron and another 13 by No. 32 Squadron). No. 67 Squadron operated 20 Ansons. The priority being given to the direct defence of the Australian coastline at the end of the war is evident. In 1939, 57% of the operational strength of the RAAF was dedicated to this task. In August 1945 the total first line strength of the RAAF in the Pacific Theatre was 3,187 first line aircraft[42]. At that

---

[40] D. Wilson, 'The Martin PBM Mariner', *Wings,* Volume 39, No. 2, June 1987, p 15.
[41] D. Wilson, 'Southern Sunderlands', *Wings,* Volume 39, No.1, March 1987, p 13.
[42] *War Report of the Chief of the Air Staff Royal Australian Air Force 3rd September, 1945 to 31st December, 1945 to the Minister for Air,* RAAF Printing and Publication Unit, Melbourne, nd [1946], p 13, RHR.

stage the strength based in Australia dedicated to trade protection and anti-submarine warfare was a mere 1.3% of the total.

The *Coastal Reconnaissance* paper of 1936 had recognised the threat of attack on sea trade by submarines, mines and armed raiders. The measures outlined above were attempts to counter this threat. However they reflected the Japanese pressure, and consequent priority given to operations, in New Guinea. The raising of the reserve squadrons (Nos 67, 71 and 73) to operational status and the attempts to involve operational training units in convoy protection and seaward reconnaissance was an unsuccessful expedient. The priority given to the re-equipment of first-line operational squadrons in New Guinea, and the differing attitude of RAAF Command and RAAF Headquarters on the role of the squadrons were important issues. The lack of operational success during the Japanese submarine campaign in 1943 was a combination of the scarcity of suitable aircraft and other organisational factors; the three operational squadrons active at the cessation of hostilities were being employed to counter a non-existent Japanese threat.

The defensive organisation

On 29 February 1939 the Air Board promulgated Air Board Memorandum No. 1 *The Roles for Which Service Squadrons are to be Trained.* After the provision of local air defence, Air Force priorities were aimed at providing for:

> ...Coast Reconnaissance and the protection of shipping. - In conjunction with the naval forces, the protection of shipping in the focal areas, Darwin, Albany-Fremantle, Bass Strait, Melbourne-Sydney-Newcastle, and in Papua-New Guinea. This entails reconnaissance for a distance to sea for the detection of raiders, either against shipping or territory, and the direct attack of such raiders when

found.[43]

The other tasks were cooperation with fixed defences, direct cooperation with the Navy, cooperation with the field army and independent offensive action. Obviously the sound theoretical basis expounded by Knox-Knight for independent maritime operations by the Air Force in the late 1930s, and the efforts to obtain modern aircraft, had not yet made an impression on the force structure or the outlook of the hierarchy. The RAAF was still seen as a force that complemented the two senior services and this was reflected in the role assigned to the general reconnaissance units established to undertake the maritime task. The document stated categorically that:

> ...The primary task of General Reconnaissance Squadrons is reconnaissance by day and night over the sea to give warning of the approach of sea-borne attack and cooperate with naval, land and air forces in the protection of shipping and territory. To assist fighters in the interception of enemy aircraft, reconnaissance aircraft are also required, under suitable conditions, to report the flying off of enemy aircraft and their subsequent movements.[44]

Reconnaissance flights were to be flown to a distance of 300 miles, 'the probable night range of hostile ships', and would involve crews with 'only the highest degree of navigational skills'. The emphasis on maritime operations may be inferred from the bomber squadrons' role to attack targets by day and night on land or sea and to 'supplement General Reconnaissance aircraft in patrol and search duties to seaward...'[45]

The rules to be followed when undertaking maritime operations were laid down in ACB 0106 *RAN and RAAF Co-operation in War* that became effective on 3

[43] Air Board Memorandum Issue No. 1 *The Role for Which Service Squadrons are to be Trained,* p 1, RHR.
[44] ibid, p 3.
[45] ibid, p 4.

February 1939. This publication provided 'for the establishment of combined naval and air operations rooms at Defence Headquarters, and at certain local defence centres, for the more efficient dissemination of intelligence and the control of operations.' [46]Thus a decentralised geographical command structure was established to control both training under the EATS, and to provide protection for naval, military and air force establishments against enemy attack and to provide seaward reconnaissance and protect sea communications. Four geographical areas were finally established: Southern (covering Tasmania, Victoria, South Australia and the southern Riverina district of New South Wales), Central (New South Wales, less southern Riverina and northern New South Wales), Northern, (northern New South Wales, Queensland, Northern Territory and Papua), and Western area which covered all of Western Australia. Northern Area was later reorganised to form two Area Headquarters. North Western Area was based on Darwin with responsibilities for the Northern Territory, north West Australia and Western Queensland. North Eastern Area was formed at Townsville, covering north Queensland and Papua New Guinea. The initial emphasis was on training, and the organisation designed to enable a trainee to undertake all phases of his training in the one area prior to being posted overseas. To cover naval and air force trade defence functions Area Combined Headquarters (ACH), each including a Combined Operations and Intelligence Centre (COIC), were established at Fremantle, Melbourne, Townsville and Darwin.[47]

To fully understand the administrative and operational problems faced by RAAF commanders a brief outline of the organisational arrangements for the control of Allied forces at the appointment of General Douglas MacArthur as Supreme

---

[46] ibid, p 3.
[47] Gillison, *Royal Australian Air Force 1939-1942,* p 94.

Commander, South-West Pacific Area, on 17 March 1942, is necessary.[48] Air Chief Marshal Sir Charles Burnett (RAF) had been appointed Chief of the Air Staff on 15 February 1940 and retained this position until succeeded by Air Vice-Marshal George Jones on 5 May 1942. Burnett's Deputy was Air Vice-Marshal W.D. Bostock. MacArthur's air commander on his arrival in Australia was Lieutenant-General George H. Brett. This officer had organised an integrated headquarters and combined operational control of both Australian and American air forces, with Bostock as his Chief of Staff. Clashes between Brett and MacArthur resulted in the former's supersession by Lieutenant-General George C. Kenney on 4 August 1942. The new commander of the Allied Air Forces South-West Pacific Area (AAFSWPA) decided to separate the two national services. As all Australian combat units had been assigned to MacArthur, Kenney needed an Australian organisation to control the Australian forces. On 5 September 1942, Kenney issued Headquarters General Order No.47, which established Coastal Command Allied Air Forces under the command of Air Vice-Marshal Bostock.[49] Bostock, under the authority of General Kenney, controlled all RAAF operational units in Australia. The Chief of the Air Staff retained administrative and training responsibility. This division of responsibilities is a complex subject, which is beyond the scope of this study.[50] As indicated above, and will be seen again, the division of administrative and operational responsibilities within the Air Force had an adverse affect on coastal protection and anti-submarine operations. As already noted the RAAF and RAN had agreed on the organisation that

---

[48] ibid, p 472.
[49] Air Marshal Sir George Jones Papers, AWM 3 DRL.
[50] A full discussion may be found in: D.M. Horner, *High Command: Australia and Allied Strategy 1939-1945,* Australian War Memorial, Canberra & Allen & Unwin, Sydney, 1982, pp 350-61; G. Odgers, *Air War Against Japan 1943-1945*, Australian War Memorial, Canberra, 1968. p 15,.436-9; D. Wilson, 'Commander in the Shadow: Air Vice-Marshal W.D. Bostock 1942-1945', Master of Defence Studies sub-thesis, UNSW, 1997.

controlled coastal protection and anti-submarine patrols. With the outbreak of war, there was no conflict between the RAAF and RAN regarding the control of RAAF units dedicated to coastal protection. Problems that ensued were inherit in the RAAF system of divided administrative and operational control.

When MacArthur's naval commander Vice Admiral A.S. Carpender established the Australian Sea Frontiers Command on 4 March 1943, (renamed South-West Pacific Sea Frontiers and formally established under that name on 25 March) the command of the organisation was assigned to the First Naval Member, Admiral Sir Guy Royle.[51] The organisation was established to protect sea communications and was responsible for the safe conduct and routing of 'all coastal shipping to and from contiguous areas and routine shipping of a military nature'. Royle was ordered to:

> utilise the existing organisation of Naval Officers in Charge of ports and … exercise operational control of escort and mine sweeping vessels as currently assigned by the Commander Allied Naval Forces Southwest Pacific and by the Australian Naval Board.[52]

Bostocks' comment on the new organisation was that it did not 'appear to have direct bearing in relation to convoy, anti-submarine patrol and similar sea communications work...therefore the Air-Navy liaison at AORs will not be affected'.[53]

Co-operation at the operational level between the Navy and Air Force may not have been affected, but the relationship between Bostock and Jones, never amicable, certainly was. Jones did not recognise Bostock's position as the operational commander under Kenney, and his subsequent efforts to assert his concept of the overall authority of the office of the CAS over all aspects of RAAF administration and operations was the cause of embarrassing and counter productive antagonism between

---

[51] D. Stevens, 'South-West Pacific Frontiers: Seapower in the Australian Context', D. Stevens (ed) *The Royal Australian Navy in World War 11*, Allen & Unwin, Sydney, 1996, p 93.

the two Air Vice-Marshals. The sensible agreement made at a conference at Navy Office on 14 May 1943 to form an Anti-submarine Division at Naval Headquarters was another contentious issue between the two RAAF commanders. The Division would be staffed by a RAN Director, a US Naval officer, one RAAF officer (the representative of RAAF Command) and two RAN officers, one of who would be a permanent navy anti-submarine specialist.[54] The aim was for the Division to produce agreed attack and signals procedures, an anti-submarine training programme and the control and dissemination of anti-submarine information from all sources.[55] It would also enable the joint use of Navy facilities 'which can be of great use to the RAAF, both in initial training and in war training for anti-submarine operations.'[56] Royle forwarded his views to Carpender on 17 May, acknowledging that, as Commander South-West Pacific Sea Frontiers (CSWPSF), he was one of two authorities involved in the anti-submarine campaign. The other was RAAF Command. Royle's logic is clear:

> ...that in order to place before the Submarine Division operational and tactical information derived from current air operations, and also to ensure that the Air Officer Commanding RAAF Command may have complete confidence that his views and requirements are fully considered by the Submarine Division during the process of examining evidence and of reaching conclusions, it is essential that a representative of the Air Officer Commanding RAAF Command be appointed to the Division.[57]

Carpender agreed. On 1 June he approached Bostock and advised him that 'the appointment of a representative of RAAF Command to the Anti-submarine Warfare

---

[52] 320.5C5, CRS A11093/1, AA.
[53] ibid.
[54] Navy Office Conference, 14 May 1943, 565.4E, CRS A11093/1, AA.
[55] Stevens, 'South-West Sea Frontiers: Seapower in the Australian Context', p 96.
[56] Group Captain Gibson to all Commands, 18 May 1943, 565.4E Pt 1, CRS A11093/1, AA.
[57] Royle to Commander Allied Naval Forces, 17 May 1943, ibid.

Division would be welcome'.[58] Bostock responded to the innovation by requesting that an alteration to the establishment of his operational staff and for an immediate posting of a wing commander to fill the position.[59]

RAAF Headquarters denied the request. On 5 June RAAF Command was advised that Wing Commander E.A. Courtney already filled such a position on the staff of the Chief of the Air Staff and that Courtney 'will represent any views which AOC RAAF Command wishes to put forward'.[60] This was an unworkable situation. Bostock, as commander of the RAAF anti-submarine force, was being forced to rely on an officer of another headquarters to prosecute his case. The matter was raised with his superiors at Headquarters AAFSWPA. As a result, Brigadier General Donald Wilson, Chief of Staff AAFSWPA, wrote to the Chief of the Air Staff on 8 June 1943. He stated categorically that it was 'necessary, therefore, that the Commander, RAAF Command, detail a suitable officer from his staff as a member of the Division of Anti-submarine Warfare' and requested that 'an officer of appropriate rank and qualifications [be assigned] for the highly important duty'. [61] An unmoved Jones replied to Wilson on 15 June, reiterating that Courtney had been detailed as Bostock's representative. Even the intervention of General Kenney on Bostocks's behalf did not cause the CAS to waver. Kenney argued that:

> It is, however, essential that this officer, or another suitably qualified officer, should be under the direct command of an organisation within Allied Air Forces...
> The danger of the present arrangement is clearly illustrated by your signal A.330 of the 19th June, which indicates that denial of direct representation on the Anti-submarine Division has already resulted in deplorable delay in the transmissions of important information to the AOC RAAF Command, Allied Air Forces...[62]

[58] Carpender to Bostock, 1 June 1943, 565.4E Pt 2, CRS A11093/1, AA.
[59] RAAF Command to HQ RAAF Forward Echelon, 2 June 1943, ibid.
[60] RAAF Headquarters to Forward Echelon (for RAAF Command), 5 June 1944, ibid.
[61] Brigadier General Donald to RAAF Headquarters, 8 June 1943, ibid.
[62] General Kenney to Air Vice-Marshal Jones, 21 June 1943, ibid.

Jones was not to be coerced. On 14 July Kenney was advised again that Wing Commander Courtney was to act as Bostock's representative and that 'as far as I [Jones] am aware, [he] is already employed on the duty'.[63] The situation was ludicrous; how a member of RAAF Headquarters, with organisational allegiance to the Office of the Chief of the Air Staff, was to represent the operational commander to whom he had no organisational affiliation or responsibility was not explained.

Bostock attempted to circumvent the organisational restraint that had been placed on his ability to affect or plan operations. On 27 October 1943 he agreed to the utilisation of Flight Lieutenant G.B. Miedecke from Air Force Headquarters to assist the Anti-submarine Warfare Division staff to produce a convoy escort code pamphlet.[64] Bostock considered that Miedecke was his representative to the Anti-submarine Division, basing his assertion on the reference made by Group Captain Gibson on 9 September to the effect that Wing Commander Courtney was the 'RAAF Command representative...'[65] It appears that Bostock thought that RAAF officers employed in the Anti-submarine division, namely Courtney and Miedeke, could be used by him as a channel for information. On 23 November RAAF Command approached RAAF Headquarters with an urgent request for advice on the 'recrudescence of submarine activity on [the] east coast in the immediate future and in approximately six months'.[66] The response from CSWPSF, Royle, next day caused Bostock some disquiet. Although the advice to RAAF Command was timely, Royle noted in his preamble that the message was 'addressed to Flight Lieutenant

[63] Jones to Kenney, 14 July 1943, ibid.
[64] RAAF Command to RAAF Headquarters Forward Echelon, 27 October 1943, 565.4E Pt 3, CRS A11093/1, AA.
[65] Group Captain Gibson, 9 September 1943, 565.4E Pt 2, CRS A11093/1, AA.
[66] RAAF Command to RAAF Headquarters, 23 November 1943, 30/502/429, CRS. A1196, AA.

Miedecke'. Bostock interpreted Royle's opinion that the views of the anti-submarine division were 'a naval board responsibility', as the denial of direct access to the overall authority for anti-submarine and convoy protective operations. On the 27th he signalled RAAF Headquarters and CSWPSF raising the matter of representation within the Anti-submarine Warfare Division. His view was that, if Miedecke was not his representative and his direct channel for information, his presence in the Anti-submarine Warfare Division 'serves little purpose' and that an alternative means of 'coordination between RAAF Command and CSWPBF [sic] must be arranged'.[67] Royle responded to the CAS on 27 November:

> I am sorry RAAF Command has read my signal as anything more than an endeavour to make it clear that A/S Division is not a separate authority but a subordinate section of the Naval Board with which rests the responsibility for determining each question as those raised by RAAF Command.
> These questions were of major importance and were not such as should or could be determined at the A/S Division. It is apparent that matters of high policy may be affected by the answers given, e.g. whether or not patrols could be reduced or suspended.
> In my opinion it would be improper for such matters to be considered in the light of information obtained from a subordinate source when the actual authority (in this instance the Naval Board) is as readily available...

Jones forwarded a copy of this message to RAAF Command with the comment that 'Flight Lieutenant Miedecke is regarded as the representative of the AOC RAAF Command on the Anti-submarine Division'[68] and advised Royle that he had done so and 'hoped that the position will now be clear and satisfactory to all concerned'.[69]

It is significant that Royle did not reply direct to Bostock. The often indirect communication between the two Australian authorities involved in such a potentially

---

[67] RAAF Command to RAAF Headquarters and CSWPSF, 27 November 1943, 36/501/429, CRS A1196, AA.
[68] CAS to HQRAAF Command, 27 November 1943, ibid.
[69] CAS to CNS, 27 November 1943, ibid.

vital task as maritime defence is exemplified by actions early in December. On the 3rd, the Deputy Chief of the Naval Staff, Captain R.R. Dowling, referred to a signal from CSWPSF to RAAF Command and RAAF Headquarters that advised that approval had been given to discontinue convoys between Newcastle and Melbourne, and requested Miedecke for 'details of air striking forces and A/S patrols which will be provided in the area affected'.[70] Miedecke forwarded the request to RAAF Command. Surely this was a case where direct communications would have been appropriate and the presence of a third party dispensed with.

The internal bickering within the Air Force hierarchy and the subsequent convoluted chain of communications did not ease a basic problem of inter-service communication at the operational level. David Stevens has stated that 'cooperation between the RAN and RAAF...left much to be desired'.[71] The cause was the fault of both Services. The Air Board issued Air Board Memorandum No.16 to explain the procedures involved and further amplified this instruction on 4 September 1941. In a letter to all Headquarters and RAAF Stations the Deputy Chief of the Air Staff, Air Commodore Bostock, forwarded further explanatory notes to amplify the Air Board memorandum. He explained that:

> (a) The Central War Room. Operations of the Navy, Army and Air Force are controlled and directed by the Chief of the Naval Staff, the Chief of the General Staff, and the Chief of the Air Staff respectively. While each Chief of Staff remains in control of, and responsible for, the operations of his own service, a Combined War Headquarters has been set up to effect that co-ordination of the operations of the three Services, which is essential to achieve economy of force and to develop the maximum effort. This combined headquarters is the Central War Room established in Melbourne.
> (b). Area Combined Headquarters. In order to provide the necessary decentralisation, the Australian Station has been divided into four operational areas.

[70] Dowling to Miedecke, 3 December 1943, ibid.
[71] Stevens, 'South-West Sea Frontiers: Seapower in the Australian Context', p 95.

> An Area Combined Headquarters has been established in each area (at Townsville, Melbourne, Fremantle and Darwin), for the conduct of operations in the defence of sea communications in the area concerned. The Air and Naval officers commanding in each area exercise such control through the Area Combined Headquarters as is delegated by their respective Chiefs of Staff.
>
> At the Central War Room, and at each ACH, a Combined Intelligence Centre has been established. These centres are part of the ACH or CWR and their function is to receive and sift intelligence reports from all sources, particularly those sources lying within the operational area of the ACH. In order that an ACH may function efficiently, it is essential that intelligence be passed immediately from any source to the ACH concerned as an addressee...
>
> The points covered by the preceding paragraphs should already be well known through existing orders, instructions and memoranda, but experiences show that emphasis is necessary to clarify certain points in Air Board Memorandum No.16 and ACB 0106 which may not have been appreciated. It is essential that all operational and intelligence personnel concerned should thoroughly read and understand the publications mentioned above, and a marked improvement in the conduct of operations and intelligence is expected in the future.[72]

It is interesting that Bostock used the naval term 'Australian Station', acknowledging the RAN's control of maritime operations. However, there is no doubt that effective operations in this area were to be combined, and that sharing of intelligence and of information was of utmost importance. A portion of this information sharing (or lack of), the reporting of the location of friendly shipping, was to prove a vexatious problem for the two Services.

[72] Air Board to Northern Area, Southern Area, Western Area, RAAF Stations Port Moresby, Townsville, Archerfield, Richmond, Laverton, Pearce, Darwin, 4 September 1941, 7/34/Air Pt 1 CRS A11297/1, AA.

4

ANTI-SUBMARINE OPERATIONS

During the period from 3 June 1942, when the *Iron Chieftain* was torpedoed east of Sydney, to the loss of the *Portmar* on 16 June 1943, Japanese submarines sank 18 ships aggregating 79,608 gross tons off the east coast of Australia.[1] The tonnage of shipping lost during the Japanese submarine campaign was infinitesimal when set in the wider perspective of the overall maritime war and the Battle of the Atlantic in particular. For example, a convoy battle, fought by German U-boats and the escorts of convoys HX229 and SC122 in March 1943, resulted in the loss of 22 ships of 146,596 tons.[2]

The Washington Naval Treaty of 1929 established the strength ratio of 5.5.3 between the United States Navy, Royal Navy and Imperial Japanese Navy. In the event of combat between Japan and the United States, Japanese submarine doctrine was based on the reality of the Japanese Navy's numerical inferiority in major fleet units when compared to that of the United States Navy. From a Japanese perspective, the submarine arm was to redress this balance by attacking the United States battle fleet as it progressed across the Central Pacific, to ensure the erosion of American numerical superiority prior to the major, decisive, fleet action that both protagonists sought. Merchantmen were secondary targets.[3] Unlike the German navy, the Imperial Japanese Navy did not conceive the submarine, predominately, as a commerce raider. The submarine campaign fought off the Eastern Australian coast lacked clear

---

[1] G. Hermon Gill, *Royal Australian Navy 1942-1945,* Australian War Memorial, Canberra, 1968, p 557.
[2] M. Middlebrook, *Convoy,* William Morrow, New York, 1976, p 302.
[3] Gill, *Royal Australian Navy 1942-1945*, p 29.

direction. The vague aim to 'weaken the resolve of the enemy to fight'[4], was not a success. Due to its doctrine, the Japanese submarine campaign was an aberration, conceptually inappropriate, and one for which it was ill prepared.

Shipping movements and intelligence

On 3 September 1939 the Admiralty War Telegram was despatched to the RAN, which activated procedures to fit within the Admiralty global Naval Control of Shipping (NCS) system. By November 1939 NCS staffs, with wide ranging responsibilities, including the routing of shipping and the reporting of ship movements, had been established. The communication between the NCS organisation and the RAAF was to prove a bothersome problem for RAAF operational staff and aircrews.[5] Some Area Headquarters took steps to instruct operational crews regarding positive identification of shipping and to make operational staff aware of the presence of friendly shipping. On 15 July 1941 Wing Commander W.H. Garing, the Senior Staff Officer, Northern Command, addressed an instruction to all units within the Command that it was 'imperative...that G.R. captains must have a thorough knowledge of constructional details of all shipping in their possible area of search and all shipping which frequent local ports', and that commanders were to 'institute some system or plan whereby pilots will obtain this knowledge..'. He continued to suggest that:

> a definite period be allotted every morning to a study of the V.A.I. [the notification of shipping movements and maritime intelligence in the area] and the photographs and descriptions of ships in the area, irrespective of whether or not a search has been ordered...ship recognition is of major importance as it is desired to reach a standard of

[4] M. Hashimoto, *Sunk: The story of the Japanese Submarine Fleet 1942-1945,* Cassell, London, 1954, pp 40-1.

[5] For a discussion of the RAN's role in Trade Control see Mark Bailey, 'The Australian role in the development of a worldwide Imperial trade control and naval intelligence system 1919-39', D. Stevens, *Maritime Power in the 20th century: The Australian experience,* Allen & Unwin, Sydney, 1998, p 68-84.

> efficiency where it is obvious that Captains can be entrusted with complete identification and thus w/t *silence can be introduced...*[italics added].[6]

The penchant for wireless silence is a weakness in operational procedures, which will be discussed, later in another context.

As noted above, Northern Area was reorganised as North Western Area and North Eastern Area. After December 1941 their attention was directed toward the reality of the Japanese expansion southward. However, Western Area was not diverted from the commerce protection and anti-submarine role. During March 1943 the commander of No. 14 Squadron, based at Pearce, reported occasions when aircrew did depart from advanced operational bases without the latest V.A.I. reports. The first example was 'primarily the result of poor communication facilities involving the late receipt of the intelligence. Had the captain waited until decyphering had been completed...takeoff would have been considerably delayed and the convoy left without air protection'. The squadron commander gave another example when one of his aircraft, tasked to seek a friendly vessel in his search area sighted a ship, despite being physically some distance from the position given in the V.A.I., was positively identified by signal lamp as the *Algonquin.* When the aircraft landed at Pearce, doubts were raised regarding the validity of the identification of the ship. Subsequent enquiries left 'no doubt that the vessel was the *Algonquin*, simply "cutting the corner" of Australia to become say three days (at 10 knots 720 N.M.) ahead of her expected position'.[7] The No 14 Squadron commander recorded his view on these matters in unqualified terms:

---

[6] Wing Commander W.H. Garing, SAO Northern Area, to Headquarters RAAF Stations Darwin, Archerfield, Port Moresby and Townsville, *Operations to Seaward - Reconnaissance Training,* 15 July 1941, 2/34/Air, CRS A11297/1, AA.

[7] Commanding Officer No. 14 Squadron, to Headquarters Western Area, *Conduct of operations to seaward*, 1 March 1943, 41/13/Air, CRS A11294/1, AA.

> This Unit appreciates the difficulty of correctly positioning ships travelling long journeys on w/t silence, but it is felt that it must be stated that several instances of incorrect and inaccurate intelligence on the V.A.I. are not all due to the above factor. As recently as within the last few days the Squadron identified a ship, which identification the Naval Authorities doubted, such doubt discounted when the ship berthed some five days ahead of time. Further, the Unit recently expended several flying hours searching for another ship, which must have sailed a course other than that given as it made port but 12 hours late.
>
> It is suggested that an appreciation of the Unit's difficulties, eg recognising dirty smoke-fogged flags from a fast moving aircraft and maintenance of new aircraft with "teething" troubles and no available spares (in spite of which practically 1000 hours were flown during the month of February), would tend for a more harmonious efficiency [sic] in the conduct of operations to seaward.[8]

Time and geography did not salve wounded professional pride or solve the problem. On 15 February 1944, the commander of 12 Operational Base Unit at Coffs Harbour, New South Wales, raised the identical issue with the Eastern Area Headquarters Intelligence Officer.[9] Although patrolling aircraft of No. 32 Squadron had sighted the *Edna, Bendigo* and HMAS *Vendetta* and HMS *Caledon,* no V.A.I. reports had been received of their presence in the area. The report conceded that discrepancies between V.A.I. positions and the actual position of ships when sighted could be explained by weather or mechanical defects but it was 'believed that they are due to captains, and even convoy control officers not keeping to the tracks over which they have been routed'. A 'glaring' example of this is cited: On 4 February the *Noora* was, according to the current V.A.I. information, routed inshore along the coast north of Brisbane. When sighted, there was a discrepancy of 240 nautical miles between the actual position and that given in the current V.A.I. information. This was not an

---

[8] ibid.

[9] 12 Operational Base Unit to Headquarters Eastern Area, 15 February 1944, 8/5/10 CRS A11066/1, AA.

isolated occurrence. There are three substantiating memoranda (one from the RAAF base at Nowra) dated 16, 26 and 29 February.

The matter was passed to the Naval Officer In Charge, Sydney, and RAAF Command on 10 March. Two months later Group Captain Gibson from RAAF Command advised Eastern and Southern Area Headquarters that the Department of the Navy 'desired' to discontinue the Merchant Ship Plot retained by the Mercantile Movements Sections attached to each Air Operations Room. This action was contemplated only if the accuracy of shipping information would not be unduly affected. A trial period, 10-24 May, was contemplated during which information would be supplied from the Mercantile Movements Section at Navy Office in Melbourne, who would distribute the information on ship movements at 0800Z and 2000Z daily. Supplementary signals would be sent at 0200Z and 1400Z.[10] From a naval perspective, the trial appeared to be successful. The Naval Liaison Officer at Headquarters Eastern Area advised the Rear Admiral in Charge, Naval Headquarters, Sydney, on 30 May that, with certain provisions, the amended system would be satisfactory. One proviso was that Eastern Area accepts 'a less accurate V.A.I.'.[11]

Navy Office formalised the matter with RAAF Command on 8 July. The Naval Board considered that the 'likelihood of hostile surface forces attempting to operate in either Eastern or Southern Areas is so remote that it may be disregarded'. The requirement to retain a merchant ship plot in either Eastern or Southern Areas Air Operations Room was voided. It was intended that the above trial would be formalised in that Naval Liaison Officers at each Headquarters would be provided, twice daily,

[10] Group Captain Gibson, SASO RAAF Command, to Headquarters Eastern and Southern Areas, 10 May 1944, ibid.
[11] Naval Liaison Officer AOREA to Rear Admiral in Charge, Naval Base Headquarters, Sydney, 30 May 1944, ibid.

with V.A.I. messages prepared from the data held in Navy Office. This would enable the Navy Liaison Staff at each Headquarters to be diminished to one liaison officer, one assistant and five members of the Women's Royal Australian Naval Service.[12] Bostock agreed on 15 July, but he was less than enthusiastic:

> While not in a position to assess the factors which contribute to the present very unreliable shipping intelligence which is made available to the Air Operations Rooms at both Southern and Eastern Areas, I feel that any action which may contribute toward the aggravation of this inaccurate information at present being supplied should, if possible, be avoided. You will readily appreciate that faulty shipping plots must inevitably lead to a proportion of abortive air sorties and a considerable waste of flying time.
> It is for these reasons that I recommend the retention of the existing arrangements. However, the procedures proposed [the reduction in staff]...must, of course, be accepted.[13]

The Air Force anxiety regarding the lack of accurate shipping intelligence could have potentially fatal results. Under ACB 0106 the procedures to be followed placed the onus on the aircraft captain to identify vessels.[14] On 10 April 1941 the Department of the Navy advised the District Naval Officer for Western Australia that it considered that 'aircraft are responsible for flying in such a manner as not to provoke merchantmen to open fire';[15] indeed patrolling aircraft were instructed to remain at a distance of no less that 1500 yards from merchant vessels until they were correctly identified. If the aircraft closed, the ship was authorised to open fire.[16] Prior to this policy being promulgated, Headquarters Southern Area had identified a basic flaw in that many merchantmen were not fitted with directional signal lamps and that aircraft would be required to close to within 1000 yards to read signal flags. The

---

[12] Secretary, Department of the Navy, to AOC RAAF Command, 8 July 1944, ibid.
[13] AOC RAAF Command to Secretary, Department of the Navy, 15 July 1944, ibid.
[14] Air Board to Central Area, 5 April 1941, 60/501/6, CRS A1196/6; Commanding Officer RAAF Pearce to Commanding Officers 14 and 24 Squadron, 9 June 1941, 41/13/Air, CRS A11294/1, AA.
[15] ODD, Department of the Navy to District Naval Officer Western Australia, 10 April 1941, 60/501/53 CRS A1196, AA.

suggestion was made that a new code group be introduced to indicate that an aircraft was closing to within effective anti-aircraft range of a vessel. This suggestion was forwarded to Navy Office on 12 December 1941 and the proposal concurred with on the 31st.[17]

This was a problem that, if followed to the strict limits of current instructions, could result in tragedy. Rupert C. Carsia, the Commodore of Convoy US 13, cited an example where aircrew blatantly disregarded the rules and did not pay the consequences due to the common sense of crew of the vessel concerned. On 11 December the *Queen Elizabeth* was the target of RAAF enthusiasm:

> [A] Hudson flew around, then astern, then turned back and flew at 1000 feet directly over the fore and aft line of the ship. [The] Hudson was identified and British [sic] markings seen.
> [The] Officer of the Watch did not open fire but should have had he complied with instructions...such actions [by friendly aircraft] could mean [that] friendly aircraft [are] shot down or fire [is] withheld on enemy aircraft approaching.[18]

This was not an isolated instance. On 20 April 1942 the Deputy Chief of the Naval Staff brought to the notice of the DCAS the complaint made by the Norwegian Naval Liaison Officer that 'RAAF and American aircraft are approaching very close to Norwegian ships, some going almost between the masts'.[19] The DCAS apportioned blame as follows:

> ...various Area Headquarters [have advised that] aircraft captains complain that ships are not showing their International Signals Letters and they are forced to undertake a more detailed inspection of the ship.
> I agree that this does not permit them to fly close to ships, but I would appreciate it if captains of merchant vessels co-operated fully to

[16] RAAF Command Operational Instruction No. 2, 20 May 1942, 381/93 Pt 1, CRS A11093/1, AA.
[17] HQSA to Air Board, 12 November 1941, 60/501/52, CRS A1196/6, AA.
[18] Rupert C. Carsia, Commodore Convoy US 13, to Naval Officer in Charge, Sydney, 14 December 1941, ibid.
[19] DCNS to DCAS, 20 April 1942, ibid.

> the extent of showing International Signal Letters immediately they sight an aircraft. This could also be taken as a friendly act.[20]

The actions of an unidentified ship sighted by a No 14 Squadron Beaufort crew on 21 August 1943 was far from friendly. While on a seaward patrol the crew spotted a Liberty Ship. During the run in to positively identify the ship, the Beaufort signalled t by Aldis, before closing to 1500 feet. On the first circuit of the ship, the aircraft crew noticed 'several men in the forward...and after gun emplacements' but interpreted this as a precautionary action. As the aircraft commenced its second circuit both the observer and gunner saw the flash from the ships after gun. The pilot 'felt a distinct bump...which could have been caused by an explosion underneath' the aircraft. The pilot dived to 500 feet and withdrew to a safe range of four miles. Another attempt was made to contact the ship by Aldis lamp. Some 25 minutes later the ship identified itself as the *Thomas Nuttel*. But, even after being requested to display its signal letters, the signal flags, when sighted through binoculars, could not be read. After 40 minutes of frustrating interrogation, the Beaufort resumed its patrol.[21]

Had not common sense prevailed the incident could have resulted in tragedy. The reading of signal flags from a low flying aircraft was not a simple task and the light signalling apparatus fitted to some merchant ships was fixed and therefore unable to be directed to enable the crew of an aircraft to read messages easily. In the circumstances one cannot blame the aircraft captain for not closing to a range where the light could be read. Had the V.A.I position of the ship advised to the patrolling

---

[20] DCAS to DCNS, ibid.
[21] Sergeant K.D. Beer to Officer Commanding 'A' Flight 14 Squadron, 21 August 1943, 4/13/Air CRS A11294/1, AA.

aircraft not been accurate the *Thomas Nuttel* could have been ordered to port for positive identification. If the ship's master had not obeyed, the Beaufort crew, following long-standing Naval Board advice, could take 'any hostile action deemed advisable...'.[22]

Shipping identification and the closely affiliated reporting of the movement of individual vessels was a problem that was never satisfactorily solved. Of greater importance was delay in supplying intelligence material of tactical value to anti-submarine forces. Prior to the outbreak of hostilities with Japan, the RAN had a ship borne and shore interception operation in existence. This became part of a wireless telegraphy intelligence system that included a system of naval High Frequency Direction Finding (HFDH) stations located at Auckland, Awarua and Waipapakuari in New Zealand. These three stations were augmented by facilities at Canberra and Darwin in Australia, and another located on Fiji. With the withdrawal of a United States Navy advanced decryption unit from the island of Corregidor in the Philippines during February/March 1942 a combined organisation integrated all sources of wireless intelligence under an overall organisation known as Fleet Radio Unit Melbourne (FRUMEL). FRUMEL linked with the United States facilities at Washington and Pearl Harbor and the British on Ceylon to perform the bulk of the naval radio intelligence work in the Pacific Theatre. This organisation supplied a daily intelligence bulletin to the Commander-in-Chief Pacific Fleet, which was forwarded to the Commander South-West Pacific Area, all major US Navy commands, the RN Commander of the Eastern Fleet, Naval Staff Ottawa and the Australian and New

[22] Department of the Navy to Headquarters Southern Area, 24 December 1941, 60/501/52, CRS A1196/6, AA.

Zealand Naval Boards.[23] The RAAF contribution to the gaining of signal intelligence was by supplying material intercepted from wireless units located at Charleville and Melbourne.

The security sensitivity of the source of such intelligence and its limited distribution made the results of direction finding 'fixes' of dubious operational value to the RAAF. General warnings of the Japanese intention to undertake a submarine campaign off the east coast of Australia early in 1942 were obtained.[24] Given the paucity of numbers of aircraft dedicated to anti-submarine operations such general warnings were of little value for the RAAF to plan offensive operations. The delay in the receipt of intelligence information by RAAF Area Headquarters became a matter of great concern. On 26 April 1943 the Air Officer Commanding, Eastern Area, handed a personal letter to Air Vice Marshal Bostock on the subject and requested that the matter be 'taken up with Admiral Carpender and the other Naval Authorities concerned'.[25] The Eastern Area Commander argued that of the four forms of intelligence available to him (reports of attacks, the actual sightings of submarines, Asdic or ASV contacts and direction finding fixes), the latter remained the most important source of information. Sources outside the SWPA were of insufficient detail to make them 'of real value'. Although the information received from local sources included the time and date of a 'fix' it did not include important information on the radio frequency of the transmission, the call sign of the sender or the classification of the bearing. The AOC argued that:

> I appreciate that intelligence of this type is regarded by the USN and RAN as being of a very high plane of secrecy [but] there are reasons why a fairly detailed knowledge of the general movements of enemy

[23] D. Stevens, 'The role of radio intelligence in the anti-submarine war around Australia', *Journal of the Australian War Memorial*, No. 25, October 1994, p 24.
[24] ibid, pp 24-5.
[25] AOC Eastern Area to AOC RAAF Command, 26 April 1943, 6/2/22, CRS A11066/1, AA.

> units can be of real value to the Area concerned. Various indications such as possible sightings, or fixes on fairly low-grade bearings, which would otherwise be ignored may become significant when associated with a definite 'fix' obtained elsewhere or even with information that an enemy submarine has been following a path which would bring it into the Area by that time. Unless we have some knowledge of the general background of information it is not possible to evaluate our own local intelligence properly...
>
> It is for this reason that I have suggested that frequencies and call signs etc. are necessary to us. We receive a number of bearings each day from units in the Area, together with frequencies. Unless these give a high-grade fix they are disregarded. If, however, the frequency coincides with that of a fix notified from ACNB or from external sources, these local bearings appear in a different light and we are in a position to pass information of some value.[26]

To be of operational use, information had to be available as quickly as possible. To bolster his argument the AOC detailed three instances where the delay in notification of information regarding direction finding indications to HQEA by ACNB - 15 hours 35 minutes, 9 hours 10 minutes and 44 hours 45 minutes.[27] Obviously such delays made the information of little operational use. Even though Bostock raised the matter with Admiral Royle on 16 July, the matter went no further.[28]

Other sources of intelligence were the coastal RAAF radar stations and the Volunteer Air Observers Corps that had taken over the coastwatching role from the Army in 1943.[29] On 9 December 1943 the following sites were selected to report on shipping movements along the coast:

> Wollongong;
> Port Kembla;
> Thirroul;
> Cronulla;
> Maroubra;
> Palm Beach;
> Wamberal;

---

[26] ibid.
[27] ibid., attachment.
[28] AOC RAAF Command to CSWPSF, 16 July 1943, ibid.
[29] 'Volunteer Air Observers Corps', *Units of the Royal Australian Air Force: A Concise History,* Volume 1, p 210.

Green Cape;
Eden;
Tathra;
Bunga;
Tanja;
Bermagui;
Narooma;
Batemans Bay;
Kioloa;
Kiama;
Point Perpendicular;
Halliday Point;
Port Macquarie;
Scotts Head; and
Nambucca Heads.[30]

Eastern Area issued these VAOC stations with *Instructions to VAOC observer posts for reporting movements of shipping*. Reported sightings were investigated. It must be conceded that many were to become the subject of post war local folklore. For example, during the period of the Japanese submarine campaign the sighting of submarines on the surface off the New South Wales fishing port of Eden were reported on five occasions and the sound of submarine engines was frequently heard in the public bar of the Australasian Hotel in the same town. Two Naval Motor Launches were deployed to Eden as a result.[31]

A further source of intelligence was the Radar Stations (RS) established along the eastern seaboard. On 4 January 1944 the VAOC was advised that the following RS were to undertake shipping surveillance of adjacent areas:

19 RS at Bombi;
208 RS at Lake Macquarie;
20 RS at Tomaree;
51 RS at Point Danger;
49 RS at Stradbroke Island; and

[30] Area Intelligence Officer to Staff Officer Volunteer Air Observer Corps Eastern Area, 9 December 1943, 6/2/19 CRS A11066/1, AA.
[31] L. Lind, *Toku-Tai Japanese Submarine Operations in Australian Waters,* Kangaroo Press, Kenthurst, 1992, p 108.

25 RS at Sandy Bay.[32]

The value of many of these stations was diminished by limited hours of operation and reflected the low expectations of threat to Eastern Australian maritime traffic.

The timely availability of intelligence and a sound organisation are a prerequisite for the successful conduct of a maritime campaign. Efforts made to co-ordinate the activities of the RAN and RAAF in relation to shipping movements and other operational matters became victims of the relationship between the two senior RAAF commanders. This, in turn, led a situation where attempts to rationalise arrangements between the RAAF and RAN operational areas responsible for maritime defence, did not develop. The problems of organisation and intelligence have been noted. It is now time to turn to the effect that these, and other factors, had on actual anti-submarine operations.

RAAF anti-submarine operations

The effect of the RAAF's anti-submarine operations in Australia is difficult to assess. Wartime documentation reports the following attacks by RAAF aircraft on suspected enemy submarines operating off the Australian coastline[33];

1942			
24 March	23 Squadron	Wirraway	Archerfield
7 May	32 Squadron	Hudson	Townsville
10 May	32 Squadron	Hudson	Townsville
4 June	7 Squadron	Hudson	Bairnsdale
5 June	6 Squadron	Hudson	Richmond
5 June	18 Squadron	Mitchell	Canberra
6 June	22 Squadron	Boston	Richmond
10 June	22 Squadron	Boston	Richmond
22 July	BTU	Beaufort	Nowra

[32] Area Intelligence Officer to Staff Officer Volunteer Air Observer Corps Eastern Area, 6 December 1943, 6/2/19, CRS A11066/1, AA.
[33] RAAF Attacks on Submarines in Australian Coastal Waters, ND, RHR.

28 July.	100 Squadron	Beaufort	Mallacoota
1 August	22 Squadron	Boston	Richmond
7 August	14 Squadron	Hudson	Pearce
15 December	7 Squadron	Beaufort	Horn Island
1943			
20 January	32 Squadron	Hudson	Camden
26 February	32 Squadron	Hudson	Camden
17 March	11 Squadron	Catalina	Cairns
	71 Squadron	Anson	Lowood
1 May	3 OTU	Catalina	Rathmines
18 June	32 Squadron	Beaufort	Coffs Harbour
	32 Squadron	Beaufort	Coffs Harbour
1944			
29 December	107 Squadron	Kingfisher	St George's Basin

Despite claims to the contrary, none of these attacks resulted in the sinking of an enemy submarine. A comparison between the two RAAF squadrons operating with RAF Coastal Command, that sank a total of 13 submarines,[34] and the lack of 'kills' credited to the Australian based squadrons, is misleading.[35] There is the matter of geography. German submarines operated from the French Brittany ports and transited across the Bay of Biscay en route to the convoy routes of the North Atlantic. Alternatively, U-Boats operated from German ports had to pass through choke points north of the British Isles. By comparison enemy submarines had relatively unrestricted access from the South Pacific Ocean to any point of the Australian eastern seaboard south of the Great Barrier Reef.

Air Force anti-submarine tactics will be discussed in more detail later. Of the 21 reported attacks on enemy submarines made by RAAF aircraft, few had any effect on Japanese submarine operations. For example, on 20 July 1942, Flying Officer

[34] No. 461 Squadron claims are published in N. Ashworth, *The Anzac Squadron,* Hesperian Press, Carlisle, 1994, pps 94, 96, 108, 115, 161, 175 and 177; No. 10 Squadron claims are published in K.C. Baff, *Maritime is Number Ten: The Sunderland Era,* Self Published, Netley, 1983, p 417.
[35] C. Boyd, & Akihiko Yoshida, *The Japanese Submarine Force and World War II,* Naval Institute Press, Annapolis, 1995, Appendix 9, pp 208-18.

Doug Avery was credited with sinking I-11 north east of Gabo Island. The combination of a diving aircraft and submarine gave a distorted visual impression to the crew of the attacking aircraft. In fact the Japanese submarine was in the process of crash-diving when the bombs were released. The top of the conning tower was some 12 metres beneath the sea when the 250-pound general-purpose bombs exploded. Even though the bombs dropped were unlikely to cause severe damage to a submerged submarine the wooden decking had been cracked by the blast. This minor damage did not effect the operations of the crew of I-11 (they claimed - an assertion not verified by Allied records - to have sunk a vessel northeast of Newcastle on 28 July) but the incident does underscore the vulnerability of surfaced submarines to aircraft.[36] The final operational cruise by a Japanese submarine off the east coast of Australia was made by I-174 during May-June 1943. Anti-submarine aircraft were a nuisance to the vigilant submarine crew, but did not seriously impede its operations..

The departure of I-174 from Truk on 16 May 1943 had been expected from radio intelligence sources. The lack of specific data was an operational deficiency that had to be overcome by Air Force reconnaissance flights to seaward. A No.32 Squadron Beaufort, based at Bundaberg, Queensland, reported an Air to Surface (ASV) radar contact, on 28 May. The alert crew of the I-174 crashed dived before the Beaufort could attack. The submarine commander, Lieutenant Nobukiyo Nanbu, decided to seek shipping further south in the Brisbane area. On 1 June he sank the *Point San Pedro* and ten Anson aircraft based at Lowood, Queensland, and Coffs Harbour, New South Wales, commenced an unsuccessful search for the Japanese intruder. Even with the knowledge of aerial activity over Moreton Bay and

[36] D. Jenkins, *Battle Surface: Japan's Submarine War Against Australia 1942-44*, Random House, Sydney, 1992, pp 256-61.

approaches, Nanbu attempted to attack a northbound convoy only to be thwarted by the activity of the convoy escort. Next morning he was able to surface and shelled the US Army Transport *Edward Chambers.* HMAS *Bendigo*, one of the escorts from convoy PQ 53 that was only 11 miles to the northeast, was diverted to investigate. The presence of the corvette and the increased air activity forced I-174 to remain submerged for the remainder of the day. By 5 June Nanbu had extracted his vessel from the Brisbane approaches and was operating near Coffs Harbour. Nanbu attempted to attack PQ 53. Anti-submarine aircraft that forced him to dive twice, thwarting his approach. On 7 June the Japanese submarine fired two torpedoes at the US Army Transport *John Bartram* to no effect before moving south to the Sydney area. Targets were not forthcoming so a disappointed Nanbu departed north from Sydney on the 10th. Stevens states that at 2250 14 June a No.32 Squadron Beaufort contacted the submarine on ASV radar and attacked, forcing the submarine to crash-dive. [37] RAAF records do not agree. The only recorded date of attacks by No.32 Squadron Beauforts in this period was on the night of 17/18 June. Stevens states that I-174 sank *Portmar* off Smoky Cape on the 16 June, was depth charged by HMAS *Warrnambool* and withdrew 200 nautical miles to the east. I-174 returned to Truk on 1 July. The Japanese submarine could not have been the subject of the Beaufort attack. Despite the doubt of the actual target, the No. 32 Squadron attack will be discussed later in depth.

Although Air Force anti-submarine operations did not actually effect enemy submarine operations off the Australian coastline, reported claims of success were morale raising. An example of this is the attack made off the Port Kembla/Smoky Bay

[37] D. Stevens, 'I-174: The last Japanese submarine off Australia', *Journal of the Australian War Memorial,* No.22, April 1993, pp 35-41.

area on 5 June 1942. The claimed sinking of a 'mother' submarine that had launched the midget submarine attack on Sydney Harbour on the night of 31 May-1st June made the crew 'for morale purposes … temporarily famous'.[38] The physical presence of aircraft escorting merchant shipping off the Australian coast also had a potential to affect labour relations. On 6 December 1943, after the decision had been made not to operate ships in convoy south of the 32nd parallel, Eastern and Southern Areas were instructed to maintain a visible presence over shipping routes to avoid potential strike action by merchant sailors.[39]

It is possible that more positive results may have been forthcoming had better procedures been followed .The sinking of the SS *Recina* on 11 April 1943 expedited the formation of the Anti-submarine Warfare Division and highlighted weaknesses in tactical communication between escorting ships and aircraft. The ship had been in a convoy en route from Melbourne to Sydney with an aerial escort supplied by an Anson aircraft from No.67 Squadron. At 1400 hours, the aircraft turned a mile in front of the convoy. Ninety seconds later, the pilot turned again, and noted that there were only twelve vessels in the convoy instead of thirteen. A disturbed patch of water and large clouds of brown smoke marked the last resting place of the *Recina.* The crew sighted floating timber, petrol drums and other debris as the Anson flew over the disturbance caused by the sinking ship before searching to starboard of the convoy. Both convoy escorts were also searching on that side of the convoy, and the aircraft returned to patrol in advance of the ships. 'Eight to ten' minutes later one escort returned to the front of the convoy and the other dropped 'two or three depth charges

[38] S.L. Carruthers, *Australia Under Siege: Japanese Submarine Raiders 1942,* Sulus Books, Sydney 1982, p 144.
[39] RAAF Command to Headquarters Eastern Area and Southern Area, 9 December 1943, 565/4E/Pt 3. A1969/100, AA.

three or four miles to the starboard side of the convoy line of advance. The Anson flew over the spot where the depth charges had been dropped, circling in ever widening arcs, but nothing was visible. The aircraft then returned to the front of the convoy before proceeding down the port side to the rear where HMAS *Moresby,* the corvette that dropped the depth charges, signalled "come over wreck with me". This the Anson did, flying at 50 to 100 feet over the debris, sighting 'six or seven men on a raft and one clinging to some wreckage'. The aircraft's crew advised HMAS Moresby of their presence by Aldis lamp prior to the ship picking up the survivors.[40]

The aircraft captain followed standard procedure in that, as a submarine had not been actually sighted, he did not break wireless silence to report the incident before he landed 1 hour and 35 minutes later.[41] Based on the report given to the Intelligence Officer at Bairnsdale, the aircraft captain had reacted positively to the situation as he saw it. He was not given, nor did he seek, guidance from the escorting vessels until being directed by HMAS *Moresby* to combine with the vessel to seek survivors. Even then communication was by Aldis lamp and not by radio. In his report on the incident to RAAF Command and the Secretary of the Air Board, Group Captain C.W. Pearce, the Operations Officer at Southern Area, was critical of the communication procedures followed. He argued that a 'reasonable suspicion [and]...extraordinary circumstance' was a legitimate ground for breaking wireless silence. He continued that the training given 'has been too binding - with the result that captains have been scared to use their own initiative in respect to taking action and making reports by wireless'. He also raised pertinent matters related to the

[40] Intelligence Report from Intelligence Officer, No.1 OTU, Bairnsdale 12 April 1943, 'Sinking of SS *Recina* on 11 April 1943', 565.4E, CRS A11093/1, AA.
[41] G. Odgers, *Air War Against Japan 1943-1945*, Australian War Memorial, Canberra, 1968, p 142.

operational use of aircraft over convoys. Pearce, accepting that the navy controlled convoy operations, was critical of the restrictions this placed on the captain of an escorting aircraft. The requirement that 'permission must be obtained from the escort vessel before the aircraft departs to investigate a suspicious object', inhibited any initiative an aircraft captain had to investigate suspicious objects.[42] The foregoing indicates that there were problems in tactical communication between escorting ships and aircraft. The operation of three No. 32 Squadron Beaufort aircraft on the night of 17/18 June 1943 illustrates the importance of accurate intelligence, briefing and the following of correct procedure.

Just after dusk on 16 June, Convoy GP55 was south east of Coffs Harbour, tracking north with an escort of a single RAN destroyer and four corvettes when the US Army Transport *Portmar* was torpedoed. A single Anson, that was due to be replaced by a Beaufort from Coffs Harbour, supplied the aerial escort. This aircraft escorted the convoy throughout the night, and a single Beaufort was detailed to undertake a 'reconnaissance in the area about the area of [the] attack' by HMAS *Warrnambool* on the submarine, with a negative result. During the 17th, Anson aircraft covered the most likely escape routes of the submarine with the aim or ensuring that it remained submerged and surface during the night. To meet this contingency 'the night search was designed and Beauforts were despatched from Coffs Harbour to cover the area continuously during the night of 17/18 June'. These tactics appeared to have been vindicated when several ASV contacts were received, the last of which was identified 'at the last minute' as an enemy submarine. The resultant attack allegedly damaged the submarine; 'the submarine trailed oil … [that] extended two miles astern and was

[42] Group Captain Pearce to RAAF Command and Secretary, Air Board, 23 April 1943, 565.4E Pt 1, CRS A11093/1, AA.

about ¼ of a mile wide.' It was at this point that incorrect briefing concerning radio frequencies negated the positive aspects of the operation to date.

The aircraft had been briefed to operate wireless communications on the 'Second Alternative Night Reconnaissance' frequency. HMAS *Deloraine* was detailed to patrol in the area. However, as the communications staff aboard had been briefed to keep a radio watch on the Primary Reconnaissance frequency, they were not aware of the contact made by the Beaufort aircraft. Nor was HMAS *Deloraine* enlightened by subsequent actions at Eastern Area Headquarters. Three reports had been received from the aircraft at 0126, 0200 and 0310; as a result of the second the Headquarters originated a message for forwarding to the vessel through Naval Base Headquarters. This signal was encoded and transmitted on the 'Bells' frequency. This was not the only breakdown in procedures that night.

The Beaufort crew continued to 'shadow and illuminate the target in order to attract the attention of [the] relief aircraft and surface vessels'. A second Beaufort sighted flares fired by the first crew and also attacked the submarine. The first Beaufort was forced to return to Coffs Harbour and the crew of the second, after their attack, flew seven miles on an unsuccessful attempt to contact a corvette visually. The Beaufort pilot then attempted to gain the attention of the ship by firing illuminating cartridges (an attempt to drop a reconnaissance flare was aborted due to the flare becoming 'hopelessly jammed in the chute'). The pilot claims he then made gunnery attacks on the submarine before again attempting unsuccessfully to visually contact the corvette. In another attempt to gain the vessel's attention the Beaufort attacked the target with gunfire; 'this time the submarine returned fire'. The Beaufort then returned to Coffs Harbour. Subsequent searches by two more aircraft did not make contact with the alleged submarine. However the last crew reported a 'continuous oil streak on the

surface of the water extending for 40 miles'. A naval vessel obtained oil samples and analysis indicated that it was burnt oil from the *Portmar.* At the position of the attacks on the submarine 'large oil patches were found, but no oil trail led away from these large patches'.[43]

The above operation was planned in accordance with then current operational procedures which, when combined with sound intelligence, exhibit a robust tactical approach. The RAAF has been criticised for pursuing an offensive anti-submarine policy.[44] This is not wholly correct. Although the Air Force did not establish an organisation on the Royal Air Force Coastal Command model, it did dedicate seven squadrons (Nos 14, 32, 66, 67, 71, 73 and 107) to the task and considered a combined offensive/defensive approach to handle this asset. On 21 May 1943 Flight Lieutenant H.G. Pockley,[45] the Staff Officer Operations with extensive anti-submarine experience with No.10 Squadron in Europe, forwarded an appreciation to the Senior Staff Officer Eastern Area concerning the submarine threat off eastern Australia and the aerial countermeasures to be followed. Pockley appreciated that submarines would be concentrated 'within comparatively small areas surrounding points on the coastline' for several reasons including the 'stream of shipping past the point and the lack of reefs or other obstructions which might complicate close in-shore torpedo attacks. etc.' Normally, submarines would travel submerged by day and on the surface at night and he conceded that the 'effectiveness of day escort by aircraft was proved to be low'

---

[43] SASO Headquarters Eastern Area to Headquarters RAAF Command, *Report on the Operations concerned with the attack against enemy submarine on the night of 17/18 June,* undated; Naval Officer-in-Charge Sydney to Air Vice Marshal Commanding Eastern Area, 18 June 1943, 8/2/36, CRS A1969/100/2, AA.

[44] D. Stevens, 'South-West Pacific Sea Frontiers: Seapower in the Australian Context', Stevens (ed), *The Royal Australian Navy in World War II,* p 95.

[45] See D. Wilson, 'Dash tempered with Discretion', *Sabretache*, VolXXV11(January-March 1986), pp 3-12

and cited the fact that two attacks had been made on convoys between 17 March-17 May 1943 without warning being raised by either the naval or air escorts. He advocated that non-ASV equipped aircraft should patrol defensively over areas known to be used by enemy submarines to ensure that 'they do not surface by day and cannot proceed further than their submerged range of approximately 60 miles'. ASV equipped aircraft would provide night escorts. As such an action would be inhibited by confusion of radar contacts from the convoy, roving escorts and coastal returns, Pockley recommended that ASV equipped aircraft be utilised in offensive patrols 20 miles ahead of the convoy.[46]

Three days later Pockley again wrote to the Senior Staff Officer explaining the RAF Coastal Command philosophy. From May 1941 the Coastal Command offensive was aimed at attacking U-Boats in areas to the north of Scotland, south east of Iceland and in the Bay of Biscay, thus preventing them from interdicting the convoy routes. However, where an aerial presence was required over a threatened convoy, the aim was to force submarines to remain submerged, thus losing tactical mobility. However, in the Australian context it was not possible to take the offensive against Japanese submarines en route by day. Night offensive patrols over areas where submarines were known to be operating was a 'method [that] received the highest priority in Coastal Command and in view of the fact that all attacks by Japanese submarines have been close in-shore to the east coast of Australia an exceptional opportunity to carry out these attacks is obvious'.[47] The Air Officer Commanding Eastern Area forwarded Pockley's reports to Headquarters RAAF Command and 'urged [that] favourable

[46] Flight Lieutenant H.G. Pockley, Staff Operations, to Senior Staff Officer, Eastern Area 21 May 1943, 8/1/16, CRS A11066/1, AA.
[47] Flight Lieutenant H.G. Pockley to Senior Staff Officer, Eastern Command, 24 May 1943, ibid.

consideration' is given to the recommendation that the policy of night offensive operations be implemented.[48]

RAAF Command's response was a compromise. It stated that the current policy laid down in RAAF Command directives CMD209 of 12 May and CMD 213 of 13 May 1943 were to remain in effect. However:

> ...where the position of a submarine has been established beyond doubt the AOC Eastern Area after consultation with the appropriate Naval authorities may divert ASV aircraft from night escort operations in order to proved a complete 24-hour coverage over an area where a submarine is known to be operating.
> Reports of torpedo tracks, submarine sightings in which no engagement takes place, or DF [Direction Finding] fixes cannot be accepted as conclusive evidence [of the presence of a submarine].[49]

This response took into account the paucity of dedicated units available for the anti-submarine task. As at 2 August 1943 the only unit equipped with ASV was the Camden-based No. 32 Squadron. Beauforts from the unit were detached to Bundaberg, Queensland, and Coffs Harbour, New South Wales. With the exception of the Kingfisher floatplane equipped No 107 Squadron, the other units were flying obsolete Anson aircraft. In a document drafted in February 1943, Headquarters Southern Area recorded its misgivings on the fitting of radar and its detrimental effect on the already limited operational potential of the Anson. The normal bomb load of an Anson was 360 lb.[50] For a radar equipped Anson to carry an offensive load of 500 lb, and not exceed the maximum permissible all-up-weight of the aircraft, the front gun, its ammunition and the self sealing material from the fuel tanks had to be removed. This would enable a 'second depth charge' to be carried. Mr J.H. Taylor served with

---

[48] AOC Eastern Area to AOC RAAF Command, 27 May 1943. ibid.
[49] Headquarters RAAF Command to Headquarters Eastern Area, ibid.
[50] Wilson, *Military Aircraft of Australia,* p 24.

No.71 Squadron and recalled that when the radar was fitted, the Anson was limited to a load of 2x100lb anti-submarine bombs.[51] Without defensive armament the aircraft was an operational liability, being required to stay out of the gunfire range of a surfaced submarine. Given that aerial depth charges were designed to be dropped from low level and straddle the target, such tactics would negate the already meagre offensive capability of the aircraft. There were also misgivings about the workload on the wireless air gunner who was expected to maintain a listening watch on the radio simultaneously with operating the radar. The memorandum concluded that if the ASV radar was removed an extra 20 gallons of fuel could be carried. This increase in fuel capacity 'was of considerable importance in this area where many of the ships being escorted have to be picked up and escorted at a considerable distance from the nearest aerodrome. Even a small increase in range has considerable effect on the number of details required for a dawn to dusk cover. It is therefore recommended that the

[51] Correspondence, J.H. Taylor to author, 6 December 1998.

question of fitting ASV equipment to Anson aircraft be reconsidered.'[52] These recommendations were not heeded.

The advice of practitioners was also ignored in the case of the patrol profile to be flown by aircraft escorting a convoy during daylight hours. This was the 'W' patrol, so called because the outline flown was a gigantic letter 'W' over the ships being escorted. RAAF Command promulgated Operation Instruction No.57/1943 on 30 June 1943 but the procedure to be followed was considered to be impractical in the case of the Anson equipped units. The commanders of these squadrons objected to the implementation of the operational instruction. Squadron Leader E.W. Cooper from No.73 Squadron referred to the sub-standard performance of the Anson, arguing that at its cruising speed of 90 knots the aircraft would require one and a quarter hours to complete a single 'W' patrol. Such timing would enable a submerged submarine time to surface, enter the so called torpedo danger zone, make its attack and submerge without aerial opposition.[53] Further criticism of the patrol profile was based on the assessment that the navigator's work rate would become so high that it would be impossible for him to maintain the aircraft's relative position with the convoy. The navigator would also be a less effective lookout, thus depriving the crew of another set of eyes searching for signs of submarines. Lastly, as many of the convoys escorted were routed inshore, one or more of the legs of the 'W' patrol would be a non-productive sweep over land. Squadron Leader R.F. Willey, the commander of No.66 Squadron, simply stated that the 'W' patrol was 'not suitable for this area'.[54]

From the foregoing it is obvious that the lack of communication compatibility

---

[52] S. Wilson, *Anson, Hudson and Sunderland in Australian Service,* Aerospace Publications, Canberra, 1992, p 29.
[53] Cooper to RAAF Command, 10 August 1943, 8/1/16, CRS A1969/100/2, AA.
[54] Willey to RAAF Command, 21 August 1943, ibid.

between the Navy and Air Force was a major operational problem. Efforts were made to develop a better understanding between the two Services at an operational level. However, the problem was overcome by events. The fate of Flight Lieutenant Miedecke, mentioned above in the context of the confusion regarding communication with the Anti Submarine Division, is an example of the mutual lack of foresight at that level. On 14 July 1944 Air Vice Marshal Bostock was advised by the Secretary, Department of the Navy, that the Commander, Seventh Fleet, had advised him that that air cover would only be given to Allied convoys north of New Guinea when there was actual evidence of enemy submarine activity. This assessment that the submarine threat was negligible enabled the Naval Board to inform Bostock that 'the full time duties' of a RAAF representative on the staff of the Anti Submarine Division would not be required. While on duty with the Division, Miedecke had been predominantly concerned with the preparation of the South-West Pacific Convoy Instructions, a task that 'is now completed'. The Naval Board expressed its appreciation 'for the valuable assistance and the able co-operation' given during his period of service with the naval staff.[55] The RAAF officer was transferred to flying duty and, although RAAF Command sought an 'assurance that the establishment for [a] RAAF representative on WASD [sic] is kept in being' there is no reference to the appointment being filled.[56] The Air Force had lost an avenue for direct consultation on maritime operations at the staff level.

Attempts were made to give realistic training and an understanding of naval anti-submarine problems. On 13 March 1943 Wing Commander D.T. Forsyth, the

[55] Secretary, Department of the Navy, to AOC RAAF Command, 14 July 1944, 36/501/429, CRS A1196, AA.
[56] AOC RAAF Command to Secretary, Department of the Navy, 24 July 1944, ibid.

Senior Air Staff Officer at Headquarters Western Area, wrote to the commanding officer of No. 25 Squadron at Pearce advising that arrangements had been made with the Commander Task Force 51 to enable as many aircrew as possible to witness submarine diving exercises and thus 'familiarise themselves with the actual appearance of a submarine when diving, proceeding at periscope depth and surfacing'.[57] Arrangements were formalised in Fremantle Secret Memorandum No.7. *Combined Training Exercises for Allied Ships, Aircraft and Submarines,* dated 29 October 1943. Six exercises were outlined, the latter three designed to train pilots in anti-submarine attacks and familiarise operating personnel with recognition procedures, to familiarise pilots with surface ship anti-submarine procedures and the appearance of submarines at various depths and to train pilots in radar search and night anti-submarine attacks.[58] Although no report was found on file of the squadrons based in Western Australia availing itself of the opportunity thus given, there is a report of an attempt by the Air Force to gain first hand naval experience. On 10 August 1943 Squadron Leader W.H. Arnott boarded HMAS *Vendetta* at Brisbane to observe operations aboard the destroyer. He remained afloat until *Vendetta* returned to port on the 18th after exercising with a submarine, being 'dive bombed' by No. 23 Squadron Vultee Vengeance aircraft and 'pattern bombed' from high level by Ansons operated by No. 71 Squadron. In his report, Arnott raised many of the matters raised in this thesis - lack of intelligence regarding the position of ships to be escorted, variations to the make-up of the escorting force, correct identification and communications between ship and aircraft. In a single paragraph Arnott succinctly addressed the Service's current problems related to anti-submarine warfare:

[57] Forsyth to Commanding Officer No.25 Squadron, 13 March 1943, 41/41/Air, CRS K827/3, AA.

> Aircraft on anti-submarine patrol are an intangible form of assistance or protection for escort vessels, who rarely see the aircraft it has once made recognition on taking patrol, [sic] and have little idea of what the aircraft is doing, or why. The 'W' Patrol and its principles was not known. The altered degree of protection which the aircraft may be affording due to the change of visibility, sea and weather conditions is not known. Little confidence appeared to be placed in the efficacy of anti-submarine patrol. All this could be greatly improved by more contact between pilots and ship's officer, and a subsequent understanding of each other's difficulties. This seems a most desirable step.[59]

Whether this 'desirable step' was taken is debatable. Crew records are too imprecise to ascertain whether naval officers actually flew on anti-submarine operations off the east coast of Australia with the RAAF units.

It was fortuitous for both the RAN and RAAF that the Japanese Navy's submarine doctrine was based on its use as a reconnaissance and strike force for employment against an aggressor's battle fleet and not, as in the case of the German submarine arm, a predominantly mercantile raider. The sinking of I-124 off Darwin in on 21 January 1942 [60] was the Navy's only success against Japanese submarines operating off the Australian coastline. It is conservatively estimated that the RAAF lost 23 individual aircraft and 104 airmen during convoy escort and anti-submarine patrols off the Australian coastline. It had not been a successful campaign. The irony was that a decade later the RAAF was to develop a high quality anti-submarine force and it may be argued that the lessons of 1942-1945 were finally recognised, absorbed and acted upon.

---

[58] Fremantle Secret Memoranda (FSM) FSM No.7 Combined Training Exercises for Allied Ships, Aircraft and Submarines, 29 October 1943, ibid.
[59] Squadron Leader W.H. Arnott, Observations on HMAS *Vendetta* 10-18th August 1943, 30 August 1943, 353/6b, CRS A11093/1, AA.
[60] D. Jenkins, *Battle Surface! Japan's Submarine War Against Australia 1942-1944*, p 103; Gill. *Royal Australian Navy 1939-42,* p 533.

5

LOCATION, TRAINING AND SUPPORT OF THE TORPEDO BOMBER STRIKE FORCE

As already noted the torpedo bomber had been an important element in RAAF pre-war concepts for the maritime defence of Australia. The original Air Board plan advocated in 1920 called for a torpedo bomber force, and the plans for the expansion of the Air Force in the later 1930s argued for the inclusion of this type of aircraft in the Order of Battle. The fiscal circumstances of the economic depression of the 1930s prevented the introduction of any new capability to the RAAF, and the raising of torpedo bomber units was opposed, on grounds of 'high cost' and the 'purported high capital expenditure involved', by the Army and Navy Boards.[1] Although the paper on naval cooperation had identified the torpedo bomber as the 'best means of attack' against enemy capital ships[2], and therefore a viable deterrent against the threat of an enemy cruiser force operating near maritime focal points, the consideration of the replacement of the Anson was confined to general reconnaissance aircraft, such as the Bolingbroke. It was the non-availability of this aircraft that resulted in the purchase of the Bristol Beaufort, a type that combined the general reconnaissance and torpedo bomber role that gave the RAAF the platform to develop a torpedo bombing capability. Although it had not previously operated torpedo bomber units, there is no evidence that the RAAF sought advice on the organisational or training requirements to support aircraft in the role, from the RAF in general or Coastal Command in particular, before 1941. Even if it had, British expertise was limited. The reality was that Coastal Command was the 'Cinderella among the RAF Commands, [and] torpedo

[1] Stephens, *Power Plus Attitude*, p 35.
[2] Knox Knight to Secretary, Air Board, 15 October 1935, 15/501/3, CRS A1196, AA.

bombing was equally the neglected child of Coastal'. When war was declared, the Command 'was virtually without a torpedo-striking force at all'.[3] The torpedo bomber strike force, comprised of Nos 22 and 42 Squadrons, had been equipped with the 1928 vintage Vildebeeste bi-planes, since May 1934.[4] Even so, the successful attack by Royal Navy Swordfish torpedo-bombers (of a similar vintage to the Vildebeeste) on the Italian fleet at Taranto on 11 November 1940 heartened advocates of the torpedo and illustrated the efficacy of the weapon against a fleet at anchor. In the attack the Italian battleship *Cavour* was sunk. Two other battleships, *Littorio* and *Duilio,* required five and six months repair, respectively, before being available for further service.[5] Even so, it was not until early in 1941 that the RAAF decided to procure torpedoes to enable plans to develop a shipping strike force, armed with the weapon, to reach fruition.

On 24 June 1941 the Air Member for Personnel (AMP), Air Vice Marshal H.N. Wrigley, and the Director of Training (DT), Air Commodore George Jones, were advised that the decision had been made to adopt the torpedo as an alternative to the semi-armour piercing bomb (SAP) armament for the Beaufort aircraft. Both officers were directed to 'consider personnel … and training problems' that would arise as a result of this decision.[6] The notification also stated that the advice of the Air Ministry and Headquarters Royal Air Force Far East would be sought to supply information regarding organisation of the squadrons and requisite maintenance and repair units. The decision to raise four squadrons[7] was one that Air Commodore Bostock, the

---

[3] Wing Commander P. Gibbs, *Not Piece but a Sword*, Grubb Street, London, 1993, p 59; Goulter, *A Forgotten Offensive,* p 114.
[4] 'No. 22 Squadron' in *The Illustrated Encyclopaedia of Aircraft, p 3676.*
[5] Hezlet, *Aircraft and Sea power,* pp 61-2.
[6] Chief of the Air Staff to Air Member for Personnel and Director of Training, 24 June 1941, 59/501/63, CRS A1196/6, AA.
[7] CAS to AMP and DT, 26 June 1941, ibid.

Deputy Chief of the Air Staff (DCAS), approached with circumspection. He argued that the quantity of 90 Beaufort aircraft on order was 'barely enough' for the new force to be viable. Although Bostock had publicly advocated the introduction of the torpedo bomber as an important element of Australia's maritime defence he clearly identified major operational problems with the introduction of the weapon. He stated that:

> The torpedo, unlike bombs, must be operated from comparatively elaborate base support with workshops, maintenance facilities, charging facilities, etc, and is therefore unsuitable for distribution to advanced bases. On the other hand, it is desirable to have torpedoes distributed to our focal areas as far as practicable and it seems necessary, therefore, that we should locate [a] torpedo squadron (and place torpedo reserves) at: Darwin, Richmond, Laverton and Pearce. At all these RAAF Stations good workshop facilities exist.[8]

Burnett agreed to Bostock's recommendations on the same day.

The physical parameters for a torpedo bombing range had been established at a conference convened to discuss the training of RAAF torpedo maintenance staff on 2 July 1941. The minimum requirements for the torpedo bombing range were for a torpedo run of 5000 yards, with at least 20 fathoms depth of water at the drop point and 10 fathoms at the recovery point. These were factors considered by a group composed of a Royal Air Force torpedo engineer from Singapore, Squadron Leaders W.A.C. Dale, Acting Director of Works and Buildings, I.H. Smith, an armament specialist, and an engineer, G.H. Ell, that undertook an inspection of likely sites on the eastern Australian seaboard. Dale had invited a naval representative to participate in the study, but the short notice given made it impossible for one to participate.[9]

---

[8] Bostock (DCAS) to Burnett (CAS), 8 August 1941, 36/501/237, CRS A1196/6, AA.
[9] Squadron Leader Dale to DOM (Navy), 8 September 1941; DOM (Navy) to Dale, 16 September 1941, 151/1/680, CRS A705, AA.

As a result of this study, Dale recommended that Williamtown, New South Wales, and Bairnsdale, Victoria, be developed as the site for torpedo sections.[10] Air Marshal Richard Williams, the Air Member for Organisation and Equipment, agreed with the proviso that 'there seems no doubt as to Williamtown being the best site for one of our torpedo squadrons but we may yet be forced to use it as an Operational Training Unit [OTU]…'.[11] These were prophetic words. No. 4 OTU was established at Williamtown on 1 October 1942.[12] Prior to this, the base was the focal point for the establishment of squadrons that were destined for overseas service under the Empire Air Training Scheme and as a base for United States Army Air Forces fighter units.[13]

Although Bairnsdale was also suitable there was a practical difficulty concerning the provision of using passing convoy traffic as training targets for aircrew from Bairnsdale. The Navy advised on 1 November 1941 that they 'could not agree to the diversion close inland of all shipping at Lakes Entrance, Bairnsdale, because of the necessity of sweeping an extra 26 miles and the absence of navigation aids'. Although a minesweeper or similar vessel could be diverted to give occasional target practice, normal convoy traffic would be routed 70 miles to seaward, thus restricting their training value to tyro torpedo bomber crews.[14]

The other site reconnoitred by Dale and his party was Nowra. On 26 September 1941 the Air Board approved the development of the civil airport there as a two-squadron general reconnaissance station.[15] Part of the update was the construction

---

[10] File note, 29 September 1941, ibid.
[11] File note, 1 October 1941, ibid.
[12] RAAF Historical Section, *Units of the Royal Australian Air Force: A Concise History, Volume 8, Training Units,* Australian Government Publishing Service, Canberra, 1995, p.70.
[13] RAAF Historical Section, *Units of the Royal Australian Air Force: A Concise History, Volume 1, Introduction, Bases, Supporting Organisations,* Australian Government Publishing Service, Canberra, 1995, p 168.
[14] File note, 1 November 1941, 151/1/580, CRS A705, AA.
[15] Air Board Agenda No. 3448, dated 26 September 1941, RHR.

of an all-weather runway from which torpedo aircraft could operate under 'most conditions'.[16] However, doubts regarding this assertion were voiced at the 27 November 1941 meeting convened to discuss the selection of sites for torpedo bomber squadrons and arrangements were made for a qualified Beaufort pilot to investigate the 'suitability of the Nowra aerodrome for operating Beauforts'.[17] Two days later Wing Commander L.V. Lachal flew to Nowra and reported that, although an experienced pilot could operate a fully loaded Beaufort from the aerodrome, he considered that it was unsuitable as an operational station. To bring it to an operational standard required the extension of the runways to 5000 yards and the clearing of the landing approaches. At the same time the site at Jervis Bay was studied. This site was considered superior to the Nowra airfield and it was recommend that the site be developed in lieu.[18]

The decision regarding sites for torpedo bomber facilities on the East Coast was made between these three possible sites. As the Director of Operations wrote to DCAS on 6 November 1941, Williamtown 'selects itself as a site'. However, the choice between Nowra and Bairnsdale was not so self-evident. DOPS explained:

> Nowra is conveniently situated in so far as access to the water, and to a suitable torpedo range is concerned. The aerodrome at Nowra will require construction of runways and these will be necessary for any GR squadron, which we will establish there. On the other hand Nowra is not conveniently situated for the operation of a torpedo unit between Sydney and Adelaide, but the very existence of Bass Strait has a controlling effect with regard to the approach of enemy sea-borne forces to the Victorian or South Australian coastline
>
> From a tactical point of view Bairnsdale is the better location for a torpedo unit, [but]…I think that we must sacrifice some tactical advantage in order to maintain the maximum facilities for training and maintenance purposes.

[16] Notes of meeting held on 27 November 1941 to select the site for torpedo bomber squadrons, Appendix B, Nowra, 151/1/680, CRS A705, AA.
[17] ibid.
[18] Report on inspection of Nowra, 29 November 1941, Report to CAS, 6 December 1941, ibid.

> I recommend that Williamtown and Nowra should be selected as the sites for the torpedo units…[19]

On 20 January 1942 the Air Board agreed to the recommendation that the facilities at Nowra be upgraded to enable the facilities to be used as a base for torpedo carrying Beaufort aircraft. [20]

The plans to meet Bostock's stated aim to develop facilities in the North and West did not reach fruition. Darwin did not meet the laid down requirements due to the cost of constructing appropriate buildings and engineering services, the unsuitability of the harbour as a torpedo range, and the fact that the only alternative site was ten miles south of Bathurst Island, some forty miles from the RAAF Base.[21] The other contender was at Busselton, south of Perth. The landing ground was 'excellent' but shipping for use as targets would be routed up to 70 miles from the coast and could not be diverted. At Busselton marine craft would have to be left in the water at all times.[22] When requested to comment on this aspect, the DCNS advised the Director of Staff Duties on 18 December 1941 that the prevailing weather conditions in the area made it 'hard to imagine a more unsuitable place in which to have marine craft in the water …'[23]

The decision to develop Nowra as the site for torpedo training and maintenance illustrates the lack of priority that was given to the weapon in the RAAF. The rejection of Williamtown confirms the higher priority being given to its development as a fighter operational training unit, and even the Nowra facility was an

---

[19] File note, DOPS to DCAS, 6 November 1941, 151/1/680, CRS A705, AA.
[20] Air Board Agenda No.3672, 20 January 1942, RHR.
[21] Notes of meeting held on 27 November 1941 to select the site for Torpedo Bomber Squadrons, Darwin Appendix, 151/1/680, CRS A705, AA.
[22] Notes of meeting held on 27 November 1941 to select the site for Torpedo Bombing Squadrons, Busselton appendix, 151/1/680, CRA A705, AA.
[23] Ops Navy to DCNS, 18 December 1941, ibid.

operational compromise. Even though it had been recognised that the torpedo was a weapon that required sophisticated maintenance facilities, Nowra was a thousand miles from the ultimate area of operations and it was not possible to supply the maintenance support that was essential for the torpedo to be used to its full potential. This point will be discussed later in the context of torpedo bomber operations.

Due to the development of Williamtown for other uses and the inadequacy of Darwin and Busselton, Nowra became the primary torpedo training, development and maintenance facility within the Air Force. RAAF Station Nowra was raised on 7 May 1942 under the command of Wing Commander John Lerew. Wing Commander N.C. Walker (RAF) was appointed as the specialist torpedo officer in charge of the Torpedo Range Section.[24] The United States Navy showed considerable interest in developments at Nowra, providing a torpedo maintenance section and specialists to supervise the training of ground personnel.[25] To rationalise the organisation at Nowra, the Base Torpedo Unit (BTU) was established on 7 September 1942. This unit, commanded by Squadron Leader J.O.P. Dibbs, combined all torpedo functions at Nowra and was directly responsible to the Air Board for matters related to torpedoes, technical equipment, tactics, training and the establishment of torpedo units and sections.[26] By June 1943 it was obvious that the BTU was 'becoming unwieldy and incapable of carrying out its dual function, ie functions of torpedo aircrew training base and chief technical centre for all torpedo matters'. After discussion between RAAF Headquarters, RAAF Command and staff of the BTU the decision was made to split BTU. As a result No.6 OTU was raised on 5 June 1943.[27] This unit operated

[24] BTU, ORB, August 1942; RAAF Station Nowra, ORB, 7 May 1942, RHR.
[25] BTU ORB, August 1942.
[26] RAAF Station Nowra ORB August 1942, Appendix F.
[27] 6 OTU ORB, 6 June 1943, RHR.

from Nowra until the decision was made on 8 September to transfer its operations to the newly developed airfield at Jervis Bay. Training was undertaken from this site until 4 March 1944 when the unit moved back to Nowra where it 'ceased to function' at the end of the month.[28]

Technical support of the weapon to be used by the operational squadrons was of prime importance, and problems associated with maintenance in the field will be discussed later. To meet the maintenance requirement the Air Force organised a two-tier maintenance structure. To support the squadrons Mobile Torpedo Sections (MTS) were established, the first being raised at Nowra during July 1942. Commanded by Flying Officer A.H. Campey, this section was destined to support the first torpedo strike flown by No.100 Squadron from Milne Bay, Eastern New Guinea, later in the year. Campey commanded 16 junior non-commissioned officer and airmen, six of whom had graduated from the first Fitter IIE Torpedo course at Flinders Naval Depot and BTU.[29] Such was the urgency that No.2 MTS was formed at Nowra on 7 September, and it was planned that another ten would be raised by 25 April 1943.[30] These MTSs would be administered by four Torpedo Maintenance Units (TMU), which would undertake extensive maintenance, supply storage facilities, and replenish the MTSs. It was planned that of the four TMUs, one each would be would be located at Charters Towers, North Queensland, Adelaide River, Northern Territory, and Bulga, New South Wales and Perth, Western Australia. The final unit at Perth would be established during March. The three remaining TMUs would remain under the auspices of the BTU.[31]

---

[28] *Units of the Royal Australian Air Force, Volume 8, Training Units,* p 74.
[29] RAAF Base Nowra ORB, August 1942, RHR.
[30] RAAF Organisation Memorandum No.160, MTSs, 11 September 1942, 320/99A, CRS A1969/100/6, AA.
[31] RAAF Organisation Memorandum No.178, 12 October 1942, ibid.

Only two TMUs were raised. Flying Officer M. Murray commanded No. 1 TMU when it was raised at Breddan, near Charters Towers, on 18 November 1942.[32] No. 2 TMU had strength of four officer, 11 non-commissioned officers and 76 airmen under the command of Flying Officer W.T. Smith when established at Nowra on 1 February 1943. This unit finally settled at Batchelor, Northern Territory, in May.[33] Only five of the planned 12 MTSs were actually established. On 2 February 1944 they were located as follows:

> No. 1 at Nowra, training for Mk XII torpedoes, but not yet equipped;
> No. 2 and No. 5 at Goodenough Island equipped with American Mk XIII torpedoes serving No. 8 Squadron; and
> No. 3 at Cairns, No. 4 at Higgins Field, North Queensland with Mk XIII torpedoes serving No. 11 and No. 20 Squadrons.[34]

Air Vice Marshal Bostock noted two days later that No. 8 Squadron would discontinue its torpedo role. Torpedoes would, however, be utilised as a secondary weapon on Catalina flying boats. He planned for all the mobile torpedo maintenance sections, with the exception that a single unit would move to Darwin to support the Catalina squadrons based in the area, to be withdrawn to Nowra and disbanded.[35] As a result of this decision No. 1 TMU and No. 2 TMU had been disbanded by the end of June 1944, leaving No.3 Mobile Torpedo Maintenance Unit to support Catalina operations from Darwin. This unit was formed from a section of No.1 TMU at Nowra and moved to Darwin in April 1944. Flying Officer R.A. Jones, his 23 airmen and one US Navy torpedo specialist remained at Darwin until the small unit was disbanded in September 1945.[36] There are no unit records available regarding the activities of the other MTSs.

---

[32] *Units of the Royal Australian Air Force, Volume 7, Maintenance Units,* p.113.
[33] ibid, p 115.
[34] Minute, 2 February 1944, 320/99M, CRS A1969/100/6, AA.
[35] ibid, 4 February 1944.
[36] *Units of the Royal Australian Air Force, Volume 7, Maintenance Units,* pp 79-80.

A solution to the manning problem was sought in parallel. Air Commodore Jones had responded to the Air Member for Personnel and the Director of Staff Duties on 27 June 1941 with respect to the training of personnel. Jones advised that there were no qualified torpedo technicians in Australia and identified two courses to meet this deficiency. First, airmen could be attached to the RAF at Singapore. Jones considered that it was 'unlikely that suitable facilities exist[ed]' in Singapore to undertake the specific training. Secondly, airmen would be trained at naval units in Australia and Jones recommended that the services of two qualified Engineer (Torpedo) Officers be obtained from the RAF to establish training in Australia.[37]

The decision to arm the Beaufort aircraft had been made without any discussion with the Navy. On 9 May 1941, Captain G.D. Yates, the Superintendent of Training at Navy Headquarters, wrote to the Naval Board as a result of a 'perusal of the daily press and other sources' that torpedo-carrying aircraft were being produced in Australia. There was no indication regarding any intention to actually arm the aircraft with torpedoes. He was concerned as to 'whether RAAF personnel [were] to be trained in the care and maintenance' of the weapon. He argued that the Australian Services should adhere to the United Kingdom model where a small number of RAF personnel undertook the Royal Navy's Long Torpedo Course annually. Instruction should be at the RAN Torpedo School and appropriate instructional training equipment being purchased from the United Kingdom to meet the Australian requirement would be required even if the RAAF decided to open its own training facility.[38]

---

[37] Air Commodore G. Jones (DT) to AMP and DSD, 27 June 1941, 59/501/62, CRS A1196/6, AA.
[38] Captain G.D. Yates, Superintendent of Training, to Secretary, Naval Board, 9 May 1941, ibid.

The AOC Eastern Area forwarded a paper prepared by Wing Commander N.C. Walker to the Air Board on 9 June 1942.[39] A scheme based on the RAF model for the introduction of torpedo specialist trades was advocated. There were important variations to overcome an inherent weakness in the British system. A Fitter Torpedo in the RAF remained in the same trade category for their whole Service career, thus creating promotion and motivational problems. Therefore specialist torpedo maintenance technicians were employable, solely, with torpedo bomber units. Due to limited posting vacancies promotion was very slow which, 'coupled with the rather monotonous work, leads to a dead end for those who make the RAF a career and which can make an airman lose interest very easily'. Walker advocated a training and management scheme where trainees would be drawn from high quality Fitter IIE [Engine Fitter] trade graduates - those who obtained an assessment of over 75 per cent - and not lose seniority in comparison with their peers when considered for promotion. Walker considered that a Fitter Torpedo would not 'lose any skill or knowledge in their basic trade because they will be working with Beaufort or other modern aircraft and so, if they are keen, they will be au fait with the engines'. However in reality a Fitter Torpedo was a specialist tradesman who was physically located at a unit separated from an operational squadron. Walker's argument proved incorrect in the light of actual operational experience.

The other new trade introduced was that of Aircrafthand (Torpedo), on who would fall the 'lot of preparing torpedoes for running, fetching them back and blowing them through [sic]'.[40] There would be no non-commissioned officer Aircraftmen (Torpedo); those promoted would revert to the basic aircrafthand trade group.

---

[39] AOC, Eastern Area, to Secretary, Air Board, 9 June 1942, 59/501/62, CRS A1196/6, AA.
[40] ibid.

Lieutenant Commander R.V.C. Hutchison RAN supported Jones' preferred option to train RAAF technicians at navy training facilities at a conference convened on 2 July to consider the training of RAAF personnel in torpedo maintenance. To maintain each operational squadron's establishment (36 operational, 18 Mk VIII training and nine dummy torpedoes) would require a work force of 19 non-commissioned specialists comprising of a Flight Sergeant supervisor and five instrument makers. They would undertake a seven-week specialist course. The remaining 13 Fitters Torpedo would undertake a course of between five and six weeks, depending on their experience and pay groupings. The torpedo maintenance section thus established would be the responsibility of an Engineering Officer, a graduate of a 14-week specialist torpedo course.[41] The time frame for training of Fitters Torpedo was considerably shorter than that allocated by the RAF where Torpedo Ground Personnel Fitters undertook courses between six and 12 weeks.[42].

The Director of Training had pre-empted the development of policy regarding the training of torpedo technicians when, on 10 March 1942, he obtained 21 volunteers from various Air Force maintenance and training units to undertake a six week Fitter IIE (T) [Torpedo] maintenance course at Flinders Naval Depot, beginning on 12 April.[43] Available records indicate that training at Flinders appears to have been of short duration. On 26 May and 8 July the men were posted to Nowra to complete their training.[44] When the last trainees graduated from the BTU on 8 June 1944, three Fitter Armourer, nine Torpedo Pistol, 17 Aircrafthand (Torpedo); ten Fitter IIE (Torpedo); two Fitter IIE (T) Mk XII Conversion, and one Fitter Armourer Torpedo Mk XII Conversion course had processed - in total, over 450 students. The duration of

[41] Notes of conference with Lieutenant Commander R.V.C. Hutchison, 2 July 1941, ibid.
[42] Air Liaison Officer, London, to Air Board, 14 August 1941, ibid.

the courses ranged from approximately two weeks for the Aircrafthand course to two months for a Fitter IIE (Torpedo) and Mk XII conversion course.[45]

The training of torpedo technicians was well in hand. However, the preparation of combat crews and the organisation of the torpedo strike force was another question. For a pilot to be considered operationally trained would require a three-month course of training in torpedo dropping techniques and tactics. To provide instructors, it was recommended that one pilot be trained at each of the RAF Torpedo Training Unit (TTU) and RN Aerial Torpedo School (NATS). Once qualified, these two pilots would train the first RAAF course of eight 'carefully selected' General Reconnaissance pilots at TTU, from which a proportion of senior pilots would qualify as instructors. Thus the graduates of the British schools and the instructors prepared under their tutelage would be responsible for the training of No. 2 course of 20 pilots. These pilots would undertake a course of 37.5 hours of instruction. [46]

Torpedo training of aircrew commenced at BTU, Nowra, on 21 June 1942 with aircrew from the B-26 Marauder equipped No.22 Bombardment Group US Army Air Corps (USAAF).[47] The first Marauder course was completed on 9 July, to be followed by a second that commenced training on 17 July. Eight aircraft participated.[48] Further training of American crews was curtailed due to the urgent RAAF requirement to train the Beaufort crews of No. 100 Squadron in its prime role.

The commanding officer of No. 100 Squadron, Wing Commander J.R. Balmer, led five crews and four aircraft to Nowra to commence training on 4 August.

---

[43] Director of Training Minute, 10 March 1942, ibid.
[44] RAAF Station Nowra, Personnel Occurrence Report (POR), May and July 1942, RHR.
[45] RAAF Station Nowra; BTU, POR, 1942-1945, RHR. Data is not available for No. 1 and No. 4 Torpedo Pistol and No. 4 Aircrafthand (Torpedo) courses.
[46]Air Board to AAHQ Brisbane, June 1942, 59/501/62, CRS A1196/6, AA.
[47] Minute, 5/3/Air Pt 1, CRS AA1969/100/160, AA: BTU, ORB, Appendix A, August 1942, RHR.
[48] BTU, ORB, Appendix A, August 1942, RHR.

The course was completed on the13th, and was superseded by another training element of 11 crews. This group commenced training on the 17th and completed training 12 days later. As Balmer led the squadron back to Laverton on the 29th, No. 100 Squadron practiced attacks on Lieutenant Commander H. Weston's HMAS *Deloraine*. The results of this activity (and the colour film that had been exposed by one of the students, Flying Officer Kym Bonython) identified training weaknesses.[49] After Balmer's flight completed their training Wing Commander Walker reported to the Air Board that more instructors were required and that a torpedo sight was imperative, as 'the need for accuracy in aiming cannot be overstressed'. Further, he identified the need for a target ship to be made available for the sole use of the BTU. Arrangements had been made for ships in transit to be used as targets, and this expedient 'worked fairly well for small numbers of pupils, but when 16 or more crews have to go through their course in 3 or 4 weeks' it was not practicable. The alternative of using routine convoys as targets, due to their inability to undertake evasive manoeuvres, was not contemplated at the time. Another option - attacking minesweepers outside Sydney - was, in Walker's opinion, 'hard on engine hours and causes confusion with pupils as other ships of greater size confuses the pupil in his estimation of range ... '.[50]

The Air Board discussed the matter on 24 September 1942. As it was not possible to regularly co-ordinate shipping movements to coincide with torpedo bomber training commitments, the use of individual ships and convoys was not a viable option. In addition, Navy operational commitments made it impossible to

[49] BTU, ORB, August 1942, RHR.
[50] Wing Commander N.C. Walker, Commanding Officer, RAAF Station, Nowra, to Air Board, 13 August 1942, 59/501/62, CRS A1196/6, AA.

provide a suitable target ship specifically for the training of Beaufort crews. The Minister for Air approved the Board's recommendation that the Department of the Navy be requested to acquire a suitable target vessel for torpedo training at the BTU.[51] As a result the Department of the Navy acquired the ferry *Burra Bra*, and the vessel was taken over and fitted out for service at a total cost of £76,262.10.8.[52] The employment of *Burra Bra* did not mean that coastal convoys were no longer used as training vehicles, and the courses obtained significant comment on training effectiveness from the escort vessels. Lieutenant Commander H.A. Litchfield reported on a mock torpedo attack made on 11 August 1943 by aircraft from Nowra on the convoy in which his vessel, HMAS *Kalgoorlie,* was an escort. He was critical in that the aircraft had been located by radar at a range of 15 miles and that they had not taken any avoiding action during the approach. From the torpedo launch height of 30-100 feet the Beauforts gained height over the convoy and 'made good targets of themselves'.[53] The commander of HMAS *Warrnambool* also criticised an attack that took place on 28 August 1943. He reported that:

> At least one aircraft should have been shot down by ship and in second attack all aircraft would have been under fire with possible casualties. There was not much avoiding action after delivery of attacks. Considered land background rendered [the aircraft] less visible than a sea horizon.[54]

[51] Air Board Agenda No. 4261/1942, 24 September 1942, RHR.
[52] Air Board Agenda No. 8115, 8 May 1947, RHR.
[53] Lieutenant Commander H.A. Litchfield, Commanding Officer, HMAS *Kalgoorlie,* to Commanding Officer, RAAF Base Nowra, 16 August 1943, 8/2/Air, CRS A1969/100/160, AA.
[54] Commander, HMAS *Warrnambool,* to Officer Commanding, RAAF Base Nowra, 28 August 1943, ibid.

However, the trainees appear to have gained some confidence and to have developed better tactical technique before the experience was repeated. Even so, when the Nowra based Beauforts again focussed on the convoy escorted by *Warrnambool* on 5 September the subsequent report indicated that there was still room for improvement:

> There appears to be more avoiding action than in my previous observations dated 28 August but aircraft closed to within easy gun range of escort and were in level flight for considerable time. There was not much element of surprise in either case. The conditions being overcast with medium height clouds made the aircraft more visible at low altitude than high altitude. Aircraft should have been able to approach unseen from above the clouds in this case but they would have probably have been a better radar target had they done so. Assessment of casualties is very difficult, probably 50 per cent of aircraft whose letter are noted would have been shot down by *Warrnambool* and some of the other ships of convoy and another escort. Ship casualties are unassessable without an observer in target ship. There appears to be some improvement in breakaway tactics by greater movement in height.[55]

In January 1944 RAAF Headquarters announced that approval had been given for torpedo bombers to make dummy attacks on individually routed merchant vessels within forty miles of Jervis Bay during daylight hours. Adherence to this new procedure was entirely voluntary. Masters of vessels would be warned of the arrangements. If they wished to enliven the voyage south the signal flags 'peter easy' was to be hoisted when in the target area to indicate their willingness to participate in exercises; RAAF pilots were instructed to undertake dummy attacks only on ships showing these flags.[56] Such procedures developed between various Air Force Area Headquarters, training units and Naval authorities and vessels were significant elements in the training of the RAAF's torpedo bombing strike force. Further assistance and advice concerning operational matters related to the deployment of

---

[55] Commander, HMAS *Warrnambool,* to Officer Commanding, RAAF Base Nowra, 5 September 1943, ibid.
[56] RAAF Headquarters to No. 6 OTU, RAAF Forward Echelon (for RAAF Command), 13 January 1944, ibid.

RAAF torpedo bomber squadrons and their training was supplied by Lieutenant Commander P.E. Carr, attached to the RAAF by the Naval Board, who gave both operational and training advice to 9 Operational Group (OG) and the BTU. Lieutenant Commander G.M. Haynes DSO was also appointed to HMAS *Cerberus* for duty with the RAAF Directorate of Training, thus giving a Navy perspective to training policy and procedures.[57]

Training was not a sinecure and placed considerable strain on the men and their aircraft. As Kim Bonython, an operational torpedo bomber pilot, instructor and trials pilot has written, practice attacks:

> ... called for wild manoeuvres that were hard on the aircraft. Control cables needed constant tightening to compensate for the strain, and the sudden yaws and jerks could be equally hard on aircrew. One of my crew, Flying Officer Geoff Brokenshire, suffered a broken arm.
>
> But we instructors had to drill the trainees into this vigorous but skilful manoeuvring and emphasise that by the time they dropped torpedoes they were at point blank range of enemy gunners, so they had to do everything possible to distract them.
>
> The attacks were as spectacular as they were dangerous. We flew so low that the slipstream threw up great rooster tails of water behind us ... [58]

Torpedo training and subsequent operations called for precise flying. Most Beaufort squadrons were operational in the general reconnaissance and bombing role and limited training in low level formation flying was flown at No.1 OTU. Although OTU crews graduated at a generally high standard, there were training weaknesses to be overcome to ensure aircrew proficiency in the torpedo bomber role. In undated correspondence (probably early 1943), the Commanding Officer, RAAF Base Nowra, emphasised that formation flying at low levels was the basis for successful torpedo

---

[57] RAAF Headquarters to Headquarters Eastern Area, 1 December 1942, 8/2/Air, CRS A1969/100/160, AA.

[58] K. Bonython, *Ladies' Legs and Lemonade,* Rigby, Adelaide, 1979, p 65.

actions, and requested that '[as] it will be of great assistance to this unit if this aspect of the [No. 1 OTU] course can be as strongly emphasised as possible without detriment to the other forms of training required at your unit'.[59] The request was heeded. The interim report on the progress of No. 10 Beaufort course made by No. 6 OTU later in the year states that 'in general the standard of flying on the course appears to be slightly higher than the average previous course this year'.[60]

The relationship between flying experience and its effect on the accident rate is of interest. During its working up period, No.100 Squadron recorded no losses or incidents. However, the experience of No.7 Squadron is not so favourable. On 24 September 1942 a Beaufort was lost after its propeller tips had clipped the surface of the sea.[61] During March/April 1943 crews straight from No. 1 OTU were under training and there were seven incidents involving trainees. The most famous occurred on 14 April, when two aircraft were lost over Jervis Bay. Seven crew members were killed.[62]

Realistic training was hazardous but essential to ensure operational success. The effectiveness of these operations will now be discussed.

---

[59] Commanding Officer RAAF Station Nowra, to Commanding Officer, 1 OTU, nd, 5/6/Air, CRS A1969/100/160, AA.
[60] Commanding Officer, 6 OTU to Director of Training, nd, ibid.
[61] BTU ORB, 24 September 1942, RHR.
[62] ibid, 15 March, 3 April, 5 April, 12 April, 14 April 1943, RHR. This accident was filmed and has been shown as part of a popular documentary series *This Fabulous Century* and stills reproduced in many publications.

6

TORPEDO BOMBER STRIKE OPERATIONS AND THE DEMISE OF THE TORPEDO STRIKE FORCE

The initial RAAF torpedo bomber operations were undertaken during the pivotal battles of the Pacific War. The Battle of the Coral Sea, a Japanese strategic defeat, had been fought in May 1942. The decisive US Navy victory at Midway in June did not prevent further Japanese aggression in the South West Pacific and South Pacific areas. In July a Japanese force landed at Buna, on the north coast of Papua New Guinea, prior to advancing over the Kokoda Trail with the aim of capturing the important airfields and port facilities at Port Moresby. During the night of 25/26 August, Japanese forces attacked Milne Bay. This operation was preceded by the US Marine Corps 2nd Division landing at Guadalcanal on the 7th, instigating a bloody campaign for control of the island. This period of strategic flux, of thrust and counter thrust, that finally established the primacy of Allied force over Japanese militancy, was an anxious period for authorities in Australia.

Several RAAF units were formed hurriedly and, ill trained and equipped, deployed north to defend New Guinea. One such unit was No. 100 Squadron, formed at Richmond, New South Wales, on 25 February 1942. Equipped with Beaufort aircraft, the Squadron moved to Mareeba, Queensland, from where it flew anti submarine patrols and bombed enemy shipping off Salamaua. The squadron withdrew to Laverton, Victoria, and a total of 15 Beaufort crews commenced torpedo bomber training at Nowra on 29 August. This activity was a learning process. The squadron flew practice attacks against HMAS *Deloraine,* resulting in ‘a considerable revision in

tactics and methods of instruction',[1] and it is obvious that the Squadron was not fully operational in the torpedo bomber role before it was deployed. However, the critical tactical situation at Milne Bay, where Japanese forces had landed on the night of 25 August and the Japanese Navy harassed the defenders of the bay on a nightly basis, had to be countered. After ten days of intense fighting, the Japanese suffered their first defeat in the Pacific.[2] The withdrawal did not give the Allied defenders any respite from naval incursions; on the night of 7 September the motor vessel *Anhui* overturned at the wharf at Gili Gili after being hit by a salvo of shells.[3]

Group Captain W.H. Garing, who assumed command of all Air Force elements at Milne Bay on 29 August, was aware of the operational status of No.100 Squadron and of its potential. The two fighter squadrons based at Gurney airfield, Milne Bay, had gained aerial superiority, but were not capable of preventing enemy naval incursion or of preventing transports landing reinforcements. For two days prior to assuming command, Garing had, with typical bluntness, demanded that 'if Beauforts can carry ... torpedoes they should be despatched immediately at once to fly them to Port Moresby'.[4] This request did not meet with universal approval. Squadron Leader I.H. Smith (Ops 5) at RAAF Command Headquarters, noted that the squadron would have to be withdrawn from training and loaded en route at Nowra, a procedure that Smith considered as 'most undesirable'.[5]

---

[1] Base Torpedo Unit ORB, August 1942, RHS.
[2] Accounts of this battle include Gillison, *Royal Australian Air Force 1939-1942* ,pp 603-622; D. Wilson, *The Decisive Factor-75 and 76 Squadrons-Port Moresby and Milne Bay*, Banner Books, Melbourne, 1991, pp 77-195; W. Deane-Butcher, *Fighter Squadron Doctor,* privately published, nd, pp 116-175, gives a eye-witness account by the Squadron doctor; C. Baker & Greg Knight, *Milne Bay 1942*, Australian Military History Publications, Loftus, 1991, (and subsequent reprints), gives a mixture of anecdotal and official accounts of the battle. The same publisher's *Clowes Report* is a reproduction of the report submitted by Major General C.A. Clowes, the Army commander, after the battle.
[3] Wilson, *The Decisive Factor,* p 180.
[4] Milne Bay - Appreciation of Situation, RHR.
[5] Squadron Leader I.H. Smith, Ops 5, 28 August 1942, CRS 320.99, A11093/1, AA.

As a result of Garing's pleading, six Beaufort aircraft from No.100 Squadron (and three No. 30 Squadron Beaufighters) arrived at Gurney on 6 September. The Beauforts had departed from Laverton on the 4th, stopping at Nowra en route to load American Mk XIII Mod 1 torpedoes of 21-inch diameter. The Beaufort was designed to carry the 18-inch diameter English torpedo, and the carriage of the American torpedo ensured that the bomb bay door could not be closed.

On the morning of 7 September, two Hudson aircraft from No. 6 Squadron sighted, and subsequently attacked, a Japanese cruiser and destroyer. The report of the sighting had been passed to Gurney and a strike force of six Beauforts, three Beaufighters and ten Kittyhawk fighters took off at 0830, planning to intercept the enemy warships fifteen miles east of Normanby Island. The strike force did not make contact with the enemy. Fuel shortages among the escorting fighters made an extensive search for the enemy vessels impossible, and the aircraft returned to Gurney.[6] However, they were not to be denied. A later sighting report resulted in a combined force of Beaufort, Beaufighter and Kittyhawk aircraft attacking late in the afternoon.

The strike force comprised of six Beauforts, two Beaufighters (the third became unserviceable on take-off) and 16 Kittyhawks. Unfortunately the eight fighters from No. 75 Squadron that had intended to supply top cover for the formation were the last to take off and, due to cloud and rain, did not participate. The other eight were to combine with the Beaufighters in strafing the warships to suppress defensive fire. The Beaufort crews sighted the enemy warships from a range of six miles, closing from dead ahead before splitting into two flights of three aircraft. Three Beauforts

[6] Wilson, *The Decisive Factor,* p 182.

attacked in line astern from port and three from starboard of the cruiser. At a range of 2500 yards the formations turned inward toward the target. Flying in at an altitude of 150 feet, the torpedo bombers were harried by defensive gunfire from the main armament and anti-aircraft guns of the ships, before dropping torpedoes at between 1200-1700 yards.[7]

The attack was the classic counter to the 'cruiser raider' scenario of pre-war doctrine. However, no hits were achieved. One reason for this lack of success was the malfunction of the torpedoes. The TS1 RAAF Headquarters, Wing Commander T. Curnow, subsequently, in a confusing mixture of fact and fallacy, reported to the DCAS, that the 'torpedoes did not function correctly. The torpedoes all appear to have run astray, breaking away from the bow, and with one possible turn-about'. This statement varies with the initial report stated that two torpedoes did run satisfactorily. Although the United States Navy had been suffering embarrassing torpedo failures in their submarine fleet with similar torpedoes, Curnow implied that 'conditions [are] serious reflections on the operational conduct of the squadron, and/or the stand-by instructions given'. Only six aircraft were deployed, and they all participated in the attack. However, he was on stronger ground when he asserted that they were armed with torpedoes that had been loaded 'without essential maintenance'. Due to the constant rain, muddy airfield and primitive conditions at Gurney, the weapons may have been permeated by mud and the sensitive gyroscopes effected. Further, he downplayed the fact that the aircraft had not been fitted with torpedo sights - all the attack reports refer to sightings being made by 'sighting deflection marks on [the]

[7] This account of the attack is reconstructed from No. 100 Squadron Attack Reports, 7 September 1942, RHR; Report from Fall River (Milne Bay) to ACH Port Moresby, ACH Townsville, and Central War Room, 7 September 1942; Report to Headquarters Allied Air Force, Brisbane, 11 September 1942, 60/501/115, and Headquarters 9 OG to Air Board, 14 October 1942, 60/501/62, CRS A1196/6, AA.

windscreen' - and asserted that the drop should have been made at a 'a closer range (RAF practice was 800-1000 yards).' Patronisingly, he realised that the crews were 'inexperienced, although not untrained', and conceded that inexperienced crews tended to under-estimate ranges over water by at least half. Curnow inferred that it was lack of aggression by the crews that led to the 'abortive attack'. To Curnow the saving grace was that 'redemption has been obtained by the reconnaissance and bombing action of the Hudson and co-operation given by the Beaufighters and the P-40s'.[8]

Smith had prophesied the result in his comments of 28 August. He believed that the deployment of the Beauforts at this stage would be 'unlikely to achieve success owing to the present state of training of the crews involved and the lack of a torpedo sight'.[9] What is evident is that the torpedo element of the force was not strong enough; the initial report advocated that 12 aircraft was the minimum number required for actions against warships. Curnow conceded that the plan of attack was sound. From the timings reported on individual attack reports, the various elements of the strike force required better coordination. The strafing aircraft attacked ten minutes before, and not coincident with, the torpedo drop. The Hudson strike force should have been simultaneously bombing the target but did not do so until after the main torpedo attack, without registering any hits. This strike blooded the torpedo force, frustrated the practitioners, and gave rise to cynicism and doubt as to its efficacy.

The initial RAAF torpedo bomber operation has been described in detail as it illustrates many of the problems that were met in the subsequent 18 operations flown by Nos. 100 and 8 Squadrons between 3 November 1942 and 4 December 1943.These

[8] Wing Commander T. Curnow to DCAS, 25 September 1942, 60/501/115, CRS A1196/6, AA.
[9] Squadron Leader I.H. Smith, Ops 5, 28 August 1942, 320.99, CRS A11093/1, AA.

operations focus attention on operational and equipment deficiencies that contributed to the failure of the force.

The 3 November attack on warships and merchant vessels in the Faisi-Buin-Tonolei area of Shortland Island was undertaken at the extreme range of the Beaufort aircraft. The round trip was approximately 950 nautical miles. The aircraft landed with between 25 to 100 gallons of fuel in their tanks and one explanation for this low quantity of petrol was that the RAAF had little experience in the operation of Beaufort aircraft in tropical conditions. All performance figures were based on tests flown under British or temperate climatic conditions, and the higher temperatures and humidity that prevail under tropical conditions could effect fuel consumption and range calculations. Precise flying and fuel management was imperative for the successful return of the strike force to Milne Bay.

All the attacks were made in less than ideal conditions, but were comparable with the parameters laid down by the BTU at Nowra for the dropping of torpedoes - a height of 150 feet, speed at 150 knots and a range of 1200 yards.[10] However, no hits were made. Squadron Leader Owen Dibbs, an RAF torpedo expert and the Chief Instructor at the Base Torpedo Unit, later reported that the failure of the torpedoes was probably due to being dropped within 'minimum arming range' and alluded to the difficulty of estimating ranges accurately at night.[11] Dibb's comment indicates one major reason for the failure of RAAF torpedo bomber operations - the unreliability of the American Mk XIII torpedo with which it was armed. The problems related to depth keeping, erratic tracking and the defective firing pistols were faced by the US

[10] BTU to HQAAAF, HQNEA, HQEA, HQSA, 2/9/42, 320.99, CRS A11093/1, Draft Torpedo Tactical Memorandum, 3 September 1942, 501/94/Arm, CRS A1969/100/3, AA.
[11] Squadron Leader Dibbs to Air Board, Eastern Area, 9 OG and RAAF Command, 19 November 1942, 5/1/11, CRS A11066/1, AA.

Navy submarine service.[12] Several RAAF combat reports vouched to the erratic behaviour of the torpedo. Phrases like 'no run was observed',[13] the torpedo 'hooked 60 degrees to starboard and missed',[14] 'made a good entry and then transferred approximately 50 yards to port … from the description of the entry and subsequent hook it appears to have straightened but missed [by] a few yards',[15] are testimony to the unreliability of the weapon, even after attacks had been flown within the parameters established for the accurate launching of the torpedo. On occasion combat reports noted that the torpedo tracked accurately, but the torpedo was seen to 'make a good run right up to the ship amidships ... either the torpedo hit the ship without exploding or … narrowly missed', indicating a potential problem with the firing pistol.[16]

Following this Shortland Island strike, the Beauforts flew from the airfield at Gurney, or Vivigani, Goodenough Island, to attack shipping in the harbour at Rabaul or in the vicinity of the islands of New Britain, New Island and the Buna-Gona-Sanananda area of northern New Guinea. The latter operations were in support of Allied operations that had, by November 1942, forced the Japanese invaders back to an enclave in the Buna-Gona-Sanananda area on the north coast of Papua New Guinea. The enemy force remaining in this area was dependant on the Japanese Navy to supply it with men and provisions and the No. 100 Squadron torpedo carrying Beaufort aircraft contributed to the aerial blockade. Operating at night, the crews

---

[12] C. Blair Jr, *Silent Victory: The U.S. Submarine war against Japan,* Bantam Books, New York, 1985, pp 169-70, 435-39.
[13] No. 100 Squadron, Narrative Report, Strike - 4 Enemy Destroyers - Buna Bay, 21 November 1942, RHR.
[14] No. 8 Squadron ORB, 15 October1943, No. 8 Squadron Narrative Report, 15/16 October 1943, RHR.
[15] Strike by No. 8 Squadron against Keravia Bay and Simpson's Harbour, 15th November 1943, 4/1/Air, CRS A1969/100/301, AA; No. 8 Squadron, Narrative Report, ORB, 5 November 1943, RHR.
[16] Strike - Enemy Shipping - Gasmata, 20 February 1943, 60/501/62, CRS A1196/5, AA; 100 Squadron ORB, 20 February 1943, RHR.

utilised Air to Surface Vessel (ASV) radar and flares to find and illuminate enemy shipping. The squadron achieved limited success. A warship was torpedoed during the night of 9 January 1943,[17] an event that is confirmed in the Official History as the squadrons' first success with a torpedo.[18]

The last operational mission undertaken by No.100 Squadron using the torpedo was on the morning of 3 March 1943 - the climatic day of the Battle of the Bismarck Sea.[19] On the morning of 1 March 1943 a Liberator of the 321st Squadron, 90th Bomb Group sighted, and reported, a sixteen-ship convoy on course along the north coast of New Britain. Eight transports, escorted by the same number of destroyers, were to reinforce and replenish the Japanese Army garrison at Lae with 6004 soldiers. The convoy was harassed by long range B-17 Flying Fortress bombers and their P-38 fighter escort. During the night of 2/3 March the force had been shadowed by a RAAF Catalina and, early in the morning, would be in range of the Gurney based Beauforts.

Nine crews were briefed to undertake the strike. The first Beaufort, using visual surveillance and ASV radar, dropped ten flares to guide the strike force. A combination of carelessness (one aircraft was recalled due to having taken off with the torpedo transportation lock still being in position in the torpedo) and bad weather that extended from East-North-East of Cape Nelson prevented three other crews from

---

[17] No. 100 Squadron, Narrative Report, Strike-Enemy Warship-South of Gasmata, 9 January 1943, RHR.
[18] Gillison, *Royal Australian Air Force 1939-1942,* p 675.
[19] There is extensive literature on this famous battle including Gillison, *Royal Australian Air Force 1939-1942,* pp 691-97; George C. Kenney, *General Kenney Reports,* Office of Air Force History, Washington, DC, 1987, pp 197-206; B. Graham & Frank Smyth, *A Nation Grew Wings: The Graphic Story of the Australian Built Beauforts of the Royal Australian Air Force in New Guinea,* Winterset House, Melbourne, 1946, pp 39-44; Air Vice Marshal J.E. Hewitt, *Adversity in Success,* Langate Publishing, South Yarra, 1980, p 68, and L. McAulay, *Battle of the Bismarck Sea,* St Martins Press, New York, 1991.

reaching the target. Only two crews attacked, with one dropping ineffectually and the other being frustrated by the torpedo not releasing from the aircraft.[20]

The outstanding success of the attacks made later in the day by a combination of low level skip-bombing B-25 Mitchell bombers that immediately followed strikes by RAAF Beaufighters to suppress ship-board anti-aircraft defensive fire relegated the efforts of the Beauforts as a footnote to most accounts of the battle. The result of No.100 Squadron operations did not enhance the torpedo bomber force's fragile credibility.

The attack on the morning of 3 March was the last torpedo operation flown by No. 100 Squadron. Subsequently, the responsibility for torpedo operations in the RAAF fell on the crews of No. 8 Squadron. Although this squadron, in company with No. 6 and No. 100 Squadrons, formed No. 71 Wing,[21] the two torpedo trained units did not combine on operations. The operational experience of No. 8 Squadron was remarkably similar to that of its predecessor.

One operation is, like the initial operation flown in September 1942, worthy of detailed study. The Air Officer Commanding No. 9 Operational Group (No. 9 OG) RAAF, Air Commodore J.E. Hewitt, aware of the daylight strikes made by US Naval carrier-borne dive and torpedo bombers on Rabaul during 5 November,[22] planned to put the full weight of the Beauforts of No. 6, No. 8 and No. 100 Squadrons in a night strike on the same target on the 8th. Hewitt was a strong willed, dominating (detractors would claim arrogant), officer who evoked strong passions among his

[20] Strike - Large Enemy Convoy - Huon Gulf, 3rd March 1943, 60/501/62, CRS A1196/6, AA.
[21] *Units of the Royal Australian Air Force, Volume 3, Bomber Units,* p. 29.
[22] C.G. Reynolds, *The Fast Carriers: The Forging of an Air Navy,* Naval Institute Press, Annapolis, 1992, pp 97-9.

subordinates.[23] A controversial commander, his role in the planning and mounting of the night's operation is noteworthy. Hewitt 'felt [that he] should leave tactical planning to Wing Commander G.D. Nicoll [the commanding officer of No. 8 Squadron]; it was his show and right up to the last moment some changes might be necessary'.[24] However, Hewitt was to be influenced by pressure from his superiors that affected his judgement. He received a letter from Colonel Meriam Cooper, Chief of Staff, 5th Bomber Command, US 5th Air Force, who advised Hewitt that the night of 8 November 'would be as good as any we could expect for a torpedo-cum-bomber attack on Rabaul'.[25]

In the meantime Nicoll had, without seeking the permission of Headquarters 9 OG, ordered a reconnaissance of Rabaul. The aircraft sighted five enemy warships and reported that, although the target area was clear, the weather en route was marginal.[26] Considering that the Beaufort aircraft was not suitable for night formation flying, and the prevailing weather en route, Nicoll decided to abort the operation. Hewitt, who had flown to the squadron base at Vivigani, considered that the reconnaissance mission was unnecessary and could 'prejudice the surprise' sought for the success of the operation. Influenced by Cooper's suggestion, Hewitt over-ruled the squadron commander and requested volunteers to fly the torpedo aircraft on the strike.[27] Three pilots stepped forward: Wing Commander Nicoll, Squadron Leader O. Price and Flight Lieutenant N.T. Quinn.[28]

---

[23] A. Stephens, *High Flyers: Leaders of the Royal Australian Air Force,* Australian Government Publishing Service, Canberra, 1996, p 97.
[24] Hewitt, *Adversity in Success,* p 193.
[25] ibid, p 194.
[26] No. 8 Squadron, Narrative Report, 7/8 November 1943, RHR.
[27] Hewitt, *Adversity in Success*, p. 194.
[28] No. 8 Squadron ORB, 8 November 1943, RHR.

The original plan had been for twelve Beauforts from No. 8 Squadron to make the strike in the early hours of 9 November. Despite the perfectly timed diversionary attacks by No. 6 and No. 100 squadron, the three torpedo bombers attacked through strong defensive fire, claimed a 'probable hit' on a *Nachi* class cruiser. Price did not return.[29] Hewitt observed the attack from a Beaufort and 'felt [that the] attack could well have been carried out in full strength, admittedly with some tactical alterations'.[30] Hewitt's involvement raises fundamental issues related to the operation of the torpedo strike force.

One of these was the attitude of the Allied commanders. Even within the RAAF itself there was a divergence of opinion. As previously mentioned B-26 Marauder aircraft of the 22nd Bombardment Group undertook torpedo training at Nowra in June 1942, but there is no record of the 5th Air Force using the weapon; indeed there is evidence that it was not the 5th Air Force's weapon of choice. General Kenney had placed his faith in the 'skip bombing' technique and claimed vindication of this tactic as a result of the Bismarck Sea action on 3 March 1943. In his memoirs Kenney remarks that after 38 medium and heavy bombers had bombed from 7000 feet:

> ... thirteen Australian Beaufighters swept in at deck height, strafing the whole length of the convoy ... twelve of my new B-25 commerce destroyers skip-bombed, followed by twelve A-20 light bombers, also "on the deck" ... .
>
> [The B-25's] dropped 37x500-pound bombs, scoring 17 direct hits, and the A-20s, which also skip-bombed, scored 11 direct hits out of the 20x500-pounders they let go.[31]

[29] No. 8 Squadron Narrative Report, 9 November 1943, RHR.
[30] Hewitt, *Audacity in Success*, p 196.
[31] Kenney, *General Kenney Reports*, p 203.

It will be recalled that No.100 Squadron had flown an early morning strike on the same convoy, but with no result.

Kenney's attitude was known to the RAAF. Lieutenant Commander G.M. Haynes, who had been seconded to the RAAF to advise on torpedo operations, visited Milne Bay, Goodenough and Kiriwina to 'determine whether some radical alteration of [the] present system of training was necessary to make the Beaufort torpedo aircraft more attractive to the 5th Air Force and No. 9 Operational Group'. In his report Haynes states that the 5th Air Force had no interest in the torpedo and that 'No.9 Operational Group [had] lost all faith in the weapon' and were using 'the aircraft in general reconnaissance work and occasional bombing attacks'.[32] This is borne out by operational statistics. During the four month period from December 1942-March 1943, No.100 Squadron flew 67 per cent of its flights on reconnaissance duties and 15 per cent on bombing operations. The Squadron did not fly an operational torpedo bombing sortie after 3 March 1943. Haynes is critical of the tasking of No.100 Squadron, considering that:

> ... since we have a fully equipped torpedo squadron available in the operational area it would be used against torpedo targets now being sighted almost daily. These targets may be a passing phase but as laden supply ships they are very important. I submit that if we were to sink but one a month we would be achieving more than we are at present with our reconnaissance over areas already covered by the 5th Air Force and SOUPAC [South Pacific] forces.[33]

Haynes was advocating a role - attack mercantile traffic and supply vessels - similar to that being developed for the RAF strike wings by RAF Coastal Command. However, an analysis of the actual targets of the RAAF torpedo bomber units shows that the

[32] Report. Lieutenant Commander Haynes on visit to Milne Bay, Goodenough Island and Kiriwina, 16 September 1943, 320.99, CRS A11093/1, AA.
[33] ibid.

main object was, in accordance with pre-war doctrine, the destruction of enemy naval vessels.

Air Commodore Hewitt was ambivalent to the deploying of torpedo bombers. He recognised that daylight operations would only be successful if they were coordinated effectively with bombing attacks, and 'had little inclination to take part in an aircraft torpedo attack by day or expect anyone else to'. However, he envisaged a role for the Beauforts as undertaking 'sneak or long range attacks on a mass of shipping by night [that] should produce some successful results if weather conditions were favourable'.[34] He was aware of the attitude of Whitehead and Cooper - both considered that the Beaufort would be more effective if armed with two 1000 pound bombs or a single 2000 pound bomb[35] - and was willing, depending on the operational requirements, to use the aircraft with either bombs or torpedoes. The Chief of the Air Staff, Air Vice Marshal Jones, while advocating that No. 8 Squadron should be utilised in the torpedo bomber role, accepted this mode with 'some reluctance'. Hewitt, with some perspicacity, wrote in his memoirs that:

> Much expense had been involved in fitting out and training No.8 Squadron; torpedoes are an expensive weapon; and I wondered to what extent anxiety for justification of that expense conditioned his thinking.[36]

The pressure Hewitt exerted on the squadrons of 9 OG to match the operational effort of the US 5th Air Force and make a 'worthwhile contribution',[37] justifies Hayne's criticism that the torpedo bomber force was being misused. Hewitt's ambition to ensure that the units of 9 Operation Group make a significant contribution to Allied air operations is a factor in the decision to mount the ill-considered operation

[34] Hewitt, *Audacity in Success,* p 65.
[35] ibid, p 147.
[36] ibid, p 151.
[37] ibid, p 64.

against Rabaul during the night of 8 November. Whitehead, Hewitt admitted, was disappointed that only three aircraft had been deployed.[38]

Jone's attitude must be seen in a broader context. There were a number of non-operational factors that were to have a profound effect on the torpedo bomber force. To meet supply deficiencies the Australian Government had made a substantial investment in the local production of British Mk XII torpedoes. On 23 September 1942 War Cabinet approved the purchase of 360 Mk XII torpedoes from British sources. However the inability of British suppliers to meet the requirements of the RAF forced a review of possible alternatives. As a result War Cabinet approved Agendum No.301/1941 for the expenditure of £1,000,000 to establish an Australian torpedo manufacturing capacity. Deliveries of the Australian built torpedo were planned to commence in September 1943 at a rate of ten per week.[39]

In the interim the Air Officer Commanding RAAF Command, Air Vice Marshal Bostock, wrote to Admiral Carpender, Commander Allied Naval Forces, and the Air Board early in 1943 seeking the provision of 500 American Mk XIII Mod 1 or 2 torpedoes to be held at the four TMU for RAAF use.[40] The Commander US Naval Aircraft South-West Pacific advised Admiral Carpender that he considered that the RAAF requirement of 500 was 'excessive'. After informal discussions with RAAF Command, the figure was reduced to 342 torpedoes. The Commander, US Naval Aircraft South-West Pacific recommended that the US Navy 'provide torpedoes and necessary tools and equipment …'.[41] Carpender recommended approval and

---

[38] ibid, p 196.
[39] Air Board Agenda 4546/1942, 11 January 1943, RHR.
[40] AVM Bostock to Commander, Allied Naval Forces, and Air Board, 23 December 1943, 320.99, CRS A11093/1, AA.
[41] Commander, US Naval Aircraft, South West Pacific Force, to Commander, South West Pacific Force, 11 February 1943, ibid.

forwarded the matter to General MacArthur on 15 February. The proposal did not gain the support of Washington authorities. Air Vice Marshal Bostock advised RAAF Headquarters Forward Echelon on 19 May 1943 that the Commander 7th Fleet had been advised by the Navy Department in Washington that 'direct allocation of torpedo tools and workshop equipment … cannot be furnished at the present time …'.[42] Attempts to obtain torpedoes met a similar fate. 'Washington authorities … decided against direct supply to the RAAF.' Instead a directive was issued to the Commander Allied Naval Forces, South-West Pacific Area, where he would 'make available such torpedoes that might be necessary for the operational requirements' of the RAAF and US forces.[43] In effect a torpedo pool was created, but RAAF Headquarters had no control or influence in the allocation of the weapon.

Bostock did not greet this situation with equanimity. In his advice to Forward Echelon on 19 May, Bostock requested detail on the availability of British torpedoes in the interim before the delivery of the first Mk XV (the Australian manufactured British Mk XII). He also requested advice on whether the September delivery schedule would be met and if the first production torpedoes had been reserved for supply to the RAAF. The advice from the Air Member for Supply and Equipment was not heartening. There were only 50 Mk XII on hand from Admiralty sources and 26 had been assigned for delivery from production in May, to be followed by another 82 from future production.[44] With the uncertainty of supply of American Mk XIII torpedoes due to the pooling arrangements and the deficiency in numbers of British torpedoes before deliveries from the Australian manufacturer commenced in

[42] AVM Bostock, RAAF Command, to RAAF Headquarters, Forward Echelon, 19 May 1943, ibid.
[43] Air Board Agenda 4546/1942, 11 January 1943, RHR.
[44] Air Member for Supply and Equipment, to RAAF Command, 28 May 1943, 320.99, CRS A11093/1, AA.

September, Bostock was forced to suggest to RAAF Headquarters that drastic action be taken. On 2 June 1943 he wrote to RAAF Headquarters Forward Element to advise that he had

> … decided to delay the formation of the last two [torpedo bomber squadrons] until next year. The supply of British torpedoes contemplated should be ample for these two operational squadrons and for the reduced training programme. Therefore … the large order for US torpedoes, tools and equipment should be modified or cancelled and a changeover to British torpedoes made as soon as possible with the exception of torpedoes for Catalina aircraft.[45]

Bostock made his decision with the knowledge that he had only one active torpedo bomber squadron in the theatre and that there were serious doubts as to the viability of the weapons systems. The basic fault was the American torpedo. Trials conducted at Jervis Bay were a matter of record. The results of trials between English Mark XII torpedo when compared to the American Mk XIII dropped at the same time, 'were astonishing in that the XII's all ran perfectly, while the majority of the XIII's ran very erratically and would be useless in an attack'.[46] These trials were undertaken at 6 OTU from 5-11 June. Four out five Mk XIII dropped had run erratically compared with three 'excellent' runs by the Mk XII's.[47] From the operational experience gained by No.8 and No.100 this result is no surprise. However, it is also misleading, as development trials of these two torpedoes and the Australian Mk XV, at various combinations of speeds from 160 knots to 275 knot and altitude of 165 to 300 feet resulted in inconsistent behaviour in all types. The results reported ranged from 'excellent', 'running in circles', 'broached and ran erratically', 'slight broach, ran well for 4000 yards and sank' and 'hooked then ran true course'.[48] Clearly the torpedo

[45] RAAF Command to RAAF Headquarters, Forward Echelon, 2 June 1943, ibid.
[46] RAAF Command to RAAF Headquarters, Forward Echelon, 22 June 1943, ibid.
[47] 6 OTU ORB, 5, 8, 9, 11 June 1943, RHR.
[48] 6 OTU ORB, 28 August, 11 November, 8 November 1943, RHR.

required development to ensure that it would evolve into a reliable and accurate weapon. One of those who flew on the trials during 1944 was Kym Bonython, who recalls that he dropped 47 torpedos (including the Australian Mk XV), and comments 'the whole operation seemed rather pointless because the RAAF had phased out torpedo bomber operations'; a cogent comment, in the then current operational sense.[49]

Although the Beaufort was considered by the RAAF in December 1942 as being 'very suitable for torpedo work'[50] the aircraft was rapidly approaching obsolescence. RAF Coastal Command flew its final operation with the Beaufort during July 1942,[51] two months before the first RAAF operational sortie. The replacement for operation in the Coastal Command strike role was under active consideration during June 1942. At this stage Coastal Command believed that the Beaufort was 'not considered completely satisfactory as a torpedo bomber' but were reconciled to the fact that it would continue in production 'indefinitely because [a] suitable replacement' had not been developed.[52] One option suggested was the Bristol Buckingham II torpedo bomber, but this design had not advanced sufficiently to enable an order to be placed; in fact the proposal was abandoned in view of plans to introduce the Beaufighter. The second option was the redesigning of the Beaufort with higher power Wright Cyclone 2600B engines and a capacity to carry a 21 inch torpedo and two 250 pound bombs under the wings.[53] On 17 August 1942 the Ministry of Aircraft Production in the United Kingdom advised that they did not consider the

---

[49] Bonython, *Ladies' Legs and Lemonade,* p 68.
[50] Wilson, *Beaufort, Beaufighter and Mosquito in Australian Service,* p 43.
[51] R. Haywood, *The Beaufort File,* Air Britain, Tonbridge, 1990, p 27.
[52] RAAF Overseas Headquarters London, to Air Force Headquarters, 19 June 1942, 1/502/1 CRS A1196/6, AA.
[53] ibid.

Cyclone option as a good one. The much faster and heavily armed Beaufighter superseded the Beaufort in RAF service. Despite the latter type being built under licence in Australia, it was not operated as a torpedo carrying aircraft in RAAF active service.

The RAF developed a very successful 'strike wing' concept that involved the close cooperation of torpedo armed Beaufighters and rocket and cannon armed Beaufighter or Mosquito strike aircraft, all protected by long range Mustang fighters, operating in wing sized formations to attack enemy shipping in the North Sea and Norwegian fjords.[54] This was a concept that, in the context of the campaign in the South West Pacific, was beyond the physical capability of the RAAF. Strike wings in Britain were based on permanent bases, attacking the mercantile commerce of an industrial nation. The South West Pacific campaign was one for that required highly mobile, operationally versatile, units to operate from rudimentary facilities. The torpedo bomber force did not meet these requirements (a proposal to redress this situation will be discussed later). Indeed, as the campaign progressed, appropriate targets were rare. Even if the technical support for the squadrons could be mobilised, the tactical requirement for the weapon system had passed, and the presence of such a force on limited airfield space, could not be justified. Indeed, the future of the torpedo as a weapon system within the Service was, by mid-1943, subject to critical examination.

During the period 5-7 July 1943 Lieutenant Commander P.E. Carr from RAAF Command held talks with Group Captain F. Thomas at Air Force Headquarters. On 9 July he reported to Bostock that the 'present deployment to forward bases' would

---

[54] I. Gordon, *Strike and Strike Again: 455 Squadron RAAF 1944-45,* Banner Books, Belconnen, 1995; C. Bowyer, *Coastal Command at War,* Ian Allen, London, 1979; Goulter*, A Forgotten Offensive.*

enable Beaufort to strike at enemy shipping. Operations of this nature would be of short-term viability. Once the enemy bases in New Guinea and Dutch New Guinea had been effectively neutralised there would be no targets within Beaufort range. The two officers discussed two possibilities. The first reflected the reality that 'shipping routes between the East Indies and Japan [were] essential' to the Japanese war effort. These routes could be subject to interdiction by long range torpedo carrying aircraft based in North Western Area or in the north west of New Guinea. In Carr's opinion, aircraft with a radius of action of at least 1,000 miles should replace the Beaufort. These could, in addition to the torpedo bomber role, be used for mine laying operations - an area in which Carr had particular expertise (as will be discussed later).[55] This recommendation would not have come as a surprise to Bostock. In his letter of 22 June 1943, he had raised the issue of 'Catalina squadrons [being] trained to use the Mk XIII torpedo for the present', but an operational role had not been discussed.[56] Thomas undertook to obtain information on the operation of Wellington aircraft in the long range torpedo bomber role from the RAF. This should not have been a difficult task as No. 458 Squadron, one of the Australian Empire Air Training Scheme units, was currently operating the type in that role in the Mediterranean theatre. The two officers also discussed the development of the rocket projectile. Thomas considered that, when fitted to a Beaufighter, that it 'might prove to be a better offensive aircraft with this weapon than with a torpedo'.[57]

An indication of the priority given to the subject may be the fact that it was not until 9 December that the DCAS, Air Commodore J.P.J. Macauley, convened a

[55] Lieutenant Commander P.E. Carr (Ops 3 (T)), Report, 9 July 1943, 320.99, CRS A11093/1, AA.
[56] Air Vice Marshal Bostock to RAAF Command Forward Echelon, 22 June 1943, ibid.
[57] Lieutenant Commander P.E. Carr (Ops 3 (T), Report, 9 July 1943, ibid.

meeting to discuss 'the future of the torpedo and consideration of extensive commitments already undertaken in provision of torpedo facilities'.[58] Group Captain W.N. Gibson represented RAAF Command and those in attendance included Wing Commander Dibbs from No. 6 OTU and Lieutenant Commander Haynes. The conference, rather than making a definite recommendation, canvassed the issues. Given that four squadrons were the 'minimum number of torpedo squadrons which could [justify] the use of manpower and equipment' and that in 'a force of 60 squadrons [the RAAF] could not afford any squadrons that are primarily torpedo squadrons', the future of the torpedo bombers units was doubtful. Another view was to retain the existing organisation and preserve the torpedo role in the post-war RAAF. Such a view was based on the financial commitment (over £2 million in torpedoes and equipment) made by the Australian Government. This figure did not include the provision of aircraft or base facilities for support and maintenance. Aligned with this view was that the weapon would be retained in a secondary role. American torpedoes could be used operationally by Catalina flying boats against stationary targets and Mk XII 'could possibly be used by Lancasters [sic]'. However, the American authorities did not favour such a deployment. Gibson advised conference members that, in the opinion of the Commander Allied Air Forces, there was no requirement for torpedo squadrons in the South-West Pacific Area. The conference consolidated current thinking on training and operating of the torpedo bombing force. McCauley summed up by saying that 'the decision on the future of the torpedo rested with the CAS'. Any decision would be based on 'the preference of Allied Air Headquarters for a fighter squadron in lieu of a torpedo squadron in the [RAAF] 60 squadron [expansion] plan, the extent of RAAF expenditure on torpedo

[58] DCAS to AOCRAAF Command, 2 December 1943, 320.99, CRS A11093/1, AA.

development [and] the value of the torpedo as a weapon and its place in long range planning for the RAAF'.[59]

Bostock forced the issue on 4 February 1944 when he sought, and obtained, approval from Air Force Headquarters to change the role of No. 8 Squadron, the sole operational torpedo bomber squadron, to that of general reconnaissance/bomber. At the same time No. 6 OTU and No. 1 TMU were disbanded.[60] This decision reflected developments in the New Guinea campaign, and of the role that was expected of the RAAF. The Japanese Navy, having been forced out of Rabaul by air power, had an inconsequential presence. Japanese strongholds, bi-passed and contained by Allied forces, were resupplied by submarine or small, shallow draught vessels that were inappropriate torpedo targets. A more efficient mode of interdiction of this traffic was by strafing attacks by rocket or bomb equipped Beaufighter or Kittyhawk aircraft. Except for specific operations undertaken by Catalina aircraft of No. 43 Squadron in July 1944, the anti-shipping role of the torpedo in the RAAF had ceased. Operations in New Guinea were either close air support operations with the army or convoy protection and anti-submarine patrols until hostilities between the Allies and Japan ceased on 15 August 1945.

Advancements in bombing techniques and the development of the rocket projectile are the tactical and technical reasons for the demise of the operational torpedo units. The US 5th Air Force 'directed that [skip bombing] be included in the training program of all Bombardment Groups' in January 1943[61] and this decision was

[59] Notes on Conference on Torpedoes held by DCAS at RAAF Headquarters on 9 December 1943, 59/501/62, CRS A1196/6, AA.
[60] RAAF Headquarters, to Rear Headquarters, 9 OG, 10 OG, Forward Echelon, RAAF Command, 17 March, 20 March 1944, 320.99, CRS A11093, AA.
[61] Colonel K.B. Hobson, Deputy Chief of Staff, Headquarters Advanced Echelon, V Bomber Command, 14 January 1943, 12/2/1068, CRS A705/2, AA.

vindicated by the result of the Bismarck Sea battle in March. The RAAF did not favour the 'skip bombing' technique that involved the dropping of bombs from 50 feet short of the target prior to the pilot flying over the ship. The bombs would be horizontal when they either hit the ship or, if short, expected to 'skip' to hit the ship at the waterline. The RAAF favoured the RAF 'mast height' attack. A report received by Headquarters 5th Bomber Command Office of the Ordnance Office on 11 January 1943 included data from Flight Lieutenant D. Passmore of RAF Coastal Command that outlined the technique. An aircraft flying on patrol at an altitude of between 500 and 1,000 feet would, on sighting a target, drop down to 20 feet above sea level. At this height it was considered that the aircraft would not be sighted until it was within 1000 yards of the target. When detected, the pilot would climb to 50 or 100 feet and take avoiding action. Approximately 100-200 yards from the target the aircraft would be dived and two to four bombs, with a spacing of 20 feet between them, aimed at the waterline. The attacking aircraft would then pass directly over the target at about 200 feet prior to diving down to sea level, increasing speed and making flat evasive turns to elude enemy anti-aircraft fire. Passmore recorded that 74 single plane attacks on merchantmen resulted in the sinking of 49 enemy ships - a 66 per cent success rate. The aircraft loss rate was 10 per cent[62] compared to the 13 per cent casualty rate sustained by the two Australian torpedo bomber squadrons in their prime role.

Air Commodore Hewitt reported to the Secretary of the Air Board on 12 May 1943, outlining his conclusions on 'skip bombing' trials. He wrote that:

[62] Headquarters V Bomber Command Office of the Ordnance Officer, 11 January 1943, ibid. Compare with the data forwarded by Allied Headquarters to Headquarters Southern, Eastern, North Eastern, North Western and Western Areas on 11 July 1942 that UK based Hudson aircraft were obtaining 77 per cent hit rate using 6x100 plus 2x250 pound anti-submarine bombs at a spacing of 20 feet between bombs using mast height attacks, 501.94 ARM, CRS A1969/100/3, AA.

> ... it is considered that skip bombing has no advantage over low level masthead height bombing and is, in fact, inferior, chiefly owing to the difficulty of deciding on the correct point of release ...
>
> In addition, there is no certainty that bombs will penetrate even if hits are achieved. Furthermore, the most satisfactory bombs at presently available for this type of attack are USAAC types - further complicating the supply position for RAAF units.
>
> Units under the control of this Headquarters have been instructed that no skip bombing attacks as such are carried out against shipping. When it is necessary to carry out low level attacks against ships, such attacks will continue to be masthead height method of attack, with sticks so arranged as to ensure at least one hit. A certain percentage of bombs falling short may ricochet from the water on to the target, but this is considered incidental to the main object of the attack, not the primary object.[63]

Hewitt's stand was supported by the results of trials undertaken by No. 2 and No. 18 Squadrons ordered by Headquarters, North Western Area, to assess the worth of a low level bomb sight. The subsequent report stated that the use of the sight would place aircraft in jeopardy by committing the aircraft to 'fly straight and more or less level at the target as does the torpedo dropping aircraft. ... The diving weaving attack necessary for successful mast head bombing precludes the use of the sight ... Skip Bombing is "out". Best results are obtained by aiming at ship's waterline or just short of it, releasing bombs either singly or in a closely spaced stick.'[64] Implied in both reports was that, compared to a torpedo bomber, normal bomber aircraft using mast height attacking techniques had greater tactical flexibility, a lower loss rate and a higher probability of success. The comparative results of the two methods of low level bombing attack were in favour of the mast head attack and the RAAF trials reinforced the tactical doctrine and experience of RAF Coastal Command.

The RAAF also obtained advice from RAF Coastal Command on the

---

[63] Air Commodore J.E. Hewitt, AOC 9 OG, to Secretary, Air Board, 12 May 1943, ibid.
[64] Group Captain R.H. Sims, Senior Air Staff Officer, North Western Area, to Air Board, 17 June 1943, ibid.

operation of the rocket projectile (RP) in anti-shipping operations. RAF experience had shown that a single underwater hit by a RP on a medium sized merchant ship was sufficient to flood a single watertight compartment. Given that the flooding of three of the five watertight compartments of an average merchant ship would cause it to sink, the firing of a salvo of eight RPs had an acceptable success rate. Hits by RPs fitted with armour piercing heads on the ship above the water line would cause considerable damage to external fittings and have a distinct morale effect on the gun crews. Compared with a torpedo, the rocket was a more flexible weapon. Coastal Command Tactical Bulletin No. 45 describes the expected effect of a combination of cannon and rockets with the respective sights harmonised at 1000 and 600 yards respectively. As the

> … range [was] closed to 700 yards with the cannon striking the superstructure, a salvo of RP is fired. They should produce 2 RP hits 15-20 feet below the cannon zone; two hits 20 feet short, 2x40 feet short and a further 60 feet short of the target. Any RPs released at a range slightly greater than 700 yards will give a greater number of underwater hits, while RP at a lesser range will record a greater number of dry hits.

There was a choice of 25 or 60 pound heads available. Coastal Command preferred to use the former due to its accuracy and more lethal underwater trajectory. This warhead was the weapon of choice against destroyers, escort vessels, flak ships, surfaced submarines and merchant shipping. The strike velocity of a projectile fitted with a 25 pound head armour piercing head was 1,500 feet per second. An RP hitting with that impact was expected to hole the bottom of a 5000 ton merchantman. The 60 pound head was considered to be more efficient for surface targets. Reflecting the differing types of targets being sought in Europe and the South-West Pacific, the 60 pound head was fitted to RPs that armed Australian Beaufighter units

Being armed with RPs also gave anti-shipping aircraft greater chances of survival. Diving attacks could be made from directly ahead. Such an attack would also prevent the full weight of anti-aircraft armament from bearing on the aircraft at any one time.[65]

However the great advantage of the bomb and rocket compared with the torpedo was simplicity. The RP was propelled by cordite fitted into a simple tube, guided by tail fins and aimed using a standard gunsight. A bomb had the same simple structure; a given explosive content detonated by a nose or tail fuse and exploder train. Both required minimal maintenance. In comparison the Mk XII torpedo weighed 1,548 pounds (702 kilograms) and was much more complex in construction. A typical torpedo was approximately 23 feet (7 metres) in length and constructed in sections. In the nose was the explosive warhead (in the case of the Mk XII this was 388 pounds (176 kilograms)). Next came the detonation pistol followed by a compartment containing the propulsion unit. A fourth compartment contained a bouyancy chamber to 'balance' the weapon evenly in the water, to give it the proper 'sit' below the waves. The propelling shaft passed through this compartment and stabilising gyros were also fitted into this area. At the tail were fitted contra-rotating propellers and vertical and horizontal rudders, the latter being controlled by variable depth gear and

[65] Coastal Command Development Report No. 44/67, 4 October 1944, Appendix B, 471.2Y4, CRS A11093/1, AA.

gyroscopic controls.[66] Specialist training had to be supplied to technicians in torpedo maintenance. As noted by Bostock in 1941 and inherent in the training and maintenance organisation established, the weapon could not be deployed without considerable technical support to ensure the efficiency of the RAAF operational squadrons in New Guinea.

Wing Commander Dibb's visit No. 1 Mobile Torpedo Maintenance Section at Milne Bay on 18 October 1942 vividly portrayed the environment problems faced. He found that the unit 'had been doing a very good job in maintaining general serviceability to a high working standard in spite of the adverse conditions' which included 60 per cent of the staff suffering from malaria or the after effects of the disease.[67] Conditions at Milne Bay, where the average yearly rainfall was 100 inches (2,540mm) per annum,[68] with consequent high humidity and mud, were not a suitable environment for the maintenance of sensitive instruments in a relatively complex weapon. The original commander of the unit, Flying Officer A.H. Campey, recommended to the commander of BTU on 21 August 1942 that the section be withdrawn to the mainland. His reasons were based on operational safety and practicalities. The site of the unit was restricted in area making the dispersal of equipment difficult and therefore vulnerable to air attack. Secondly, the terrain and weather immobilised the transport required to convey torpedoes from the working area to the airfield, making it impossible to arm aircraft 'in any reasonable time'. The fact that the unit operated the only compressor (used for pressurising the oxygen bottles that were to provide motive power for the torpedoes' engine) available in

[66] P. Smith, *Ship Strike: The History of Air-to-Sea Weapon Systems,* Airlife, Shrewsbury, 1998, pp 40-1.
[67] BTU ORB, October 1942, Appendix B.
[68] Wilson, *The Decisive Factor,* p 79.

North Eastern Area meant that if this was destroyed or damaged no operations could be undertaken at all. The commander also recognised that the ten torpedoes held would be an insufficient quantity to maintain an intensive operational effort.[69]

The solution, Campey argued, was that the section should be 'brought back to a suitable aerodrome within reasonable air range of Milne Bay'. Aircraft would arm at this base before refuelling at Milne Bay before undertaking operations. This would not create operational restrictions if the 'Mk XIII torpedoes once checked daily for a period of one week at the MTS can normally be relied upon to retain pressure for from three to four days'.[70] A variation on this theme was discussed between Lieutenant Commander P.E. Carr, Ops 3, RAAF Command, and Lieutenant Commander Haynes on 29 May 1943. The two officers discussed the raising of an air portable mobile torpedo maintenance section, complete with tools and a compressor. They envisaged that two transport aircraft would be allocated to the unit to give the operational squadrons a degree of mobility that was denied by a static maintenance organisation.[71] Dibbs supported this concept, and discussed the matter with Commander Glynn of the United States Navy. Glynn had been 'plugging this suggestion for some time … and is raising it on his return to Brisbane'.[72] The lack of transport aircraft within the RAAF, and the fact that in 1943 it was under American control, ensured that this proposal never reached fruition. Even when Air Commodore A.H. Cobby, the AOC 10 OG, requested that Dakota transports be allotted on 'the area or force level' in October 1944 there was a low probability of acceptance of the proposal.[73] Although Jones

---

[69] Flying Officer Campey to Squadron Leader O. Dibb, CO BTU, 21 August 1942, 320.99, CRS A11093/1, AA.
[70] ibid.
[71] HQ BTU, to Secretary, Air Board, 29 May 1943, 4/6/Air, CRS A1969/100.301, AA.
[72] Wing Commander Dibb to Lieutenant Commander Haynes, 29 August 1943, ibid.
[73] Air Commodore A.H. Cobby, AOC 10 OG, to AVM G. Jones, 9 October 1944, AOC's DO Correspondence, Exhibit No.102, 25/7/1948, Barry Commission Papers, RHR.

replied that he 'was anxious to carry by air as much as possible of your requirements' once he had control of the tasking of the transport squadrons, the promise was not delivered. In February 1945 Cobby was still having problems with the allocation of aerial transport within 10 OGs successor, 1st Tactical Air Force.[74] The Carr/Haynes proposal, although made at an earlier date, would have been afforded a very low priority. Theoretically the status of 1st Tactical Air Force as the premier operational RAAF formation should have ensured that it was given priority for all types of equipment. The prevarication regarding the allotment of transport assets is beyond the scope of this thesis, but it is raised to indicate that the torpedo bomber force was not likely to gain support from the CAS to make it a more viable weapon system. Both examples testify that the CAS's inability to recognise that the lack of mobility of RAAF formations and units was a severe restriction on their operational effectiveness.

In June 1943 Bostock had decided that there was no operational future for Beaufort torpedo bomber operations. Therefore there was no Australian operational reason to retain the maintenance and training facility at Nowra. However, the deployment of the RN into the Pacific ensured the short term future of the facility. On 24 October 1944 work commenced on the construction of domestic accommodation for 90 officers and 1,731 ratings of the RN Fleet Air Arm. FAA air operations began in October 1944 and the British presence remained until 18 March 1946.[75] The only RAAF unit based at Nowra, the BTU, undertook torpedo trials to support the RN and test torpedoes constructed in Australia.

The potential of the torpedo bomber force was not fulfilled for the reasons outlined above. The RAAF had recognised that the weapon could be of value in the

[74] Jones to Cobby, 23 October 1944; Cobby to Jones, 13 February 1945, ibid.
[75] Gillett, *Wings Across the Sea,* p.122.

defence of Australia against maritime raids but was unable to train and develop operational experience before the advent of the Beaufort aircraft. The late decision to arm this aircraft with the weapon for which it was designed did not enable aircrews to become familiar with the complete weapon system. Even when the decision was taken it was found impossible to procure British torpedoes and the RAAF was forced to undertake operations with an American weapon for which the aircraft had not been designed. In addition to the physical problem of carriage in the aircraft, the American MkXIII torpedo was subject to technical problems that seriously impaired its operational effectiveness. However, the major reason for the lack of apparent success of the torpedo bomber strike force was a the lack of direction and planning. No. 7 Squadron was trained for, but never utilised, in the role. Due to a lack of faith (or operational experience) in the weapon system, operational commanders did not give the two operational units a clearly defined role. The continual transfer of the operational focus between ground support and torpedo bomber operations ensured that crews could not retain operational proficiency in the latter role. It also lead to inefficient aircraft usage - considerable time was required for ground crews to replace torpedo carriage equipment with normal bomb racks or vice versa.

In 19 attacks made between 7 September 1942 and 4 December 1943, No. 100 and No. 8 Squadrons dropped 56 torpedoes in anger. The cost was seven Beauforts lost and 26 aircrew killed or declared ‘missing in action’, and two made prisoners of war. Nine hits were claimed against all targets. This rate of 16 per cent does not compare favourably with various figures supplied by the Admiralty in March 1941. Based on an expenditure of 149 torpedoes the Fleet Air Arm claimed 51 - 54 per cent hits against stationary defended targets (in harbour), 26 - 32 per cent hits against escorted transports and merchantmen underway and 8 - 15 per cent hits against all

types of warship underway, an average hit rate of 28 - 33 per cent.[76] The two Australian squadrons flew 122 operational sorties losing one aircraft per 17 sorties. Thirteen percent of the 53 individual aircraft operated were lost during operations. One hundred and forty five pilots and their crews were trained at the BTU and/or No.6 OTU. Thirteen percent of those trained were posted to non-torpedo bombing units, and of those that graduated and posted to No.8 or No.100 Squadron only 30 per cent actually participated in one or more operation.[77]

Wartime torpedo bomber and anti-submarine operations undertaken by the RAAF in the South-West Pacific area were not a success. However, in the post-war context the combination of anti-submarine torpedo and purpose designed anti-submarine aircraft was to give the RAAF a potent anti-submarine force.

[76] Secretary, Department of the Navy, to Secretary, Department of Air, 18 June 1941, 1/501/395A, CRS A1196/2, AA.
[77] Figures derived from 8 Squadron ORB and Narrative Reports; 100 Squadron ORB and Narrative Reports, BTU ORB; and 6 OTU ORB, RHR.

7

OPERATIONS MOUNTED BY NORTH WESTERN AREA 1942-1945

The effect of the 'Singapore Strategy'

To fully understand the operations mounted by Allied Air Forces from the North Western Area of Australia one must be cognisant of the implications of pre-war strategic thinking and its impact on decisions related to the employment of Air Forces in the area. It has been noted that the 'Main Fleet to Singapore' concept was the basis of British Far Eastern Strategy and that Australian Governments had reservations on its efficacy. By the end of the 1930s the ability of the RN to able to meet the combined threat of the German, Italian and Japanese navies was a matter of intense debate.

To the RAF the defence of Singapore Naval base was fundamental. An Air Staff paper of 17 June 1935 called for a force of six 'defence' squadrons, one squadron of flying boats, two land based long range reconnaissance aircraft and a flight of 'spotters' for the defence of Singapore. This force was designed to meet an assessment that a surprise attack was the most likely method of attack on the British base. The staff assessment alluded to the

> … vital importance to Japan of the capture of Singapore before the arrival of the British Main Fleet, and the fact that success would practically eliminate the possibility of a subsequent fleet action. Japan would probably use all four of her aircraft carriers … in order to make the fullest possible assurance of obtaining local air superiority during the landing and other operations for the capture of the island. … the main objective of her carrier borne aircraft would be the defending air forces, and she might well hope to launch initial air attacks in maximum strength before her carriers had been located.

Air Staff considered that, due to the 'advantages of shore-based aircraft over carrier-based both from a general operational point of view and the performance of individual aircraft' a ratio of one land based aircraft to two carrier-based was an acceptable

balance of forces. The Air Staff estimated that the four Japanese aircraft carriers carried 158 aircraft and that British forces would meet that parity after reinforcement in 1937/38.[1]

Group Captain A.T. Harris represented the Air Ministry at a Committee of Imperial Defence, Joint Overseas and Home Defence Committee, on 26 July 1935. He minuted that the Admiralty 'were insistent upon the provision of aircraft to fill the gap caused by a deficiency in surface vessels of the eastern end of [sic] the distant reconnaissance cruiser screen'.[2] Harris identified the inability of the RN to deploy a adequate force to protect the Singapore base as a major weakness, and the role that the Air Force could assume as a result. If the RN was not able to deploy sufficient naval force to Singapore for its defence, the RAF perceived that it was its duty to protect the base until the RN could deploy a battle fleet from Great Britain. Three years later the Air Officer Commanding, Headquarters RAF Far East, Air Vice Marshal J. Babington, identified a basic flaw in the plans for the defence of Singapore. He wrote to the Deputy Chief of the Air Staff (DCAS), Air Vice Marshal R.E.C. Peirse, on 28 October 1938 in an attempt to gain financial support for the development of advanced operational airfields, arguing that 'we must be able to strike the enemy before he is able to consolidate his positions for an assault on Singapore. We must be able to dispute Japanese attempts at the establishment of Naval bases or shore based aircraft facilities on the approaches to Singapore. That cannot be done from Malayan bases alone.'[3]

---

[1] Air Staff Paper, 17 June 1935, Air 2/2695, PRO.
[2] Committee of Imperial Defence, Joint Overseas and Home Defence Committee, 26 July 1935, ibid.
[3] Air Vice Marshal J. Babington, to Air Vice Marshal R.E.C. Peirse, 28 October 1938, Air 2/2130, PRO.

Babington had little confidence in the existing plan for the defence of Singapore. The defensive nature of the plan where forces would retreat to Singapore and hold pending the arrival of the main fleet from England lacked focus and forward vision. On arrival the fleet would 'in due course "advance". It is not clear where it is to advance.' To Babington it was obvious that 'it would be for the Air Force to meet and defeat Japanese raids or Japanese invasion … ' and if this action was not successful the Singapore Naval Base would become 'useless for fleet purposes and the main military reason d'etre for the fortress would have gone … the utility of Singapore … [is] almost entirely dependent upon air action'.[4] Although Peirse was sympathetic toward Babington's policy of forward defence, the RAF did not have the resources to develop air bases in adjacent areas like Borneo. He advised that 'the answer … is that our limited strength does not permit an offensive in the first instance, as the defence of Singapore is the vital need, we must concentrate there the forces that are available with their stores and maintenance facilities …'.[5] Peirse did not abrogate the responsibility of the RAF for the defence of Singapore. The General Officer Commanding (GOC), Malaya, who wrote to the War Office on 13 April 1940, reinforced the importance of the RAF role. Due to the inability of the RN to assemble a superior force in a satisfactory time frame, he stated that

> It remains to utilise the air force.
>
> In adopting this method of defence, I suggest that the RAF could and should be made absolutely responsible for the detection and destruction of an expedition before it reaches these shores, then at least for ensuring that no bases can be maintained and no line of communications consisting of a single line of rail and/or a single road,

[4] ibid.
[5] Peirse to Babington, 20 January 1939, ibid.

> can be operated within striking distance of our aerodromes, the defence of which against air attack must be taken into consideration.[6]

Obviously, with the failure of the RN to be able to deploy sufficient force to protect Singapore, the aircraft of the RAF were considered a substitute for the vessels that were the theoretical backbone of Commonwealth defence in the Far East.

To ensure that this 'substitution' policy could be effective, the RAF required the active assistance of the RAAF. On 1 June 1937 the British Air Staff noted that it would be in the 'interests of the Empire generally and this country and Australia in particular to encourage Australia to co-operate in the defence of Singapore'. A five-fold concept was outlined. First, the RAF and RAAF were to formulate plans for the rapid reinforcement of RAF squadrons in Singapore by RAAF squadrons in periods of 'emergency or strained relations'. Secondly, there should be periodical exchange of visits by squadrons of the two Services from their respective bases in Australia and Singapore, and, closely aligned with this point, the actual exchange of units. In addition, one RAAF Squadron would be permanently based at Singapore. The fifth proviso was that one or more RAAF officers would be appointed to the staff of Headquarters RAF Far East at Singapore.[7]

The last mentioned was seen as the first step in obtaining RAAF agreement to the other four options. On 11 November 1937 the Deputy Director of Operations RAF suggested that a position at squadron leader rank should be established at Headquarters RAF Far East. This officer should have graduated from the RAF Staff College prior to his appointment. Air Chief Marshal N.L.N. Newall, the RAF's CAS,

---

[6] Major General L.V. Bond, General Officer Commanding, Malaya, to War Office,13 April 1940, Air 2/7174, PRO.
[7] Air Staff Note on Australian Co-operation in the Defence of Singapore and the Far East, 1 June 1937, Air 2/2199, PRO.

made the offer to his Australian counterpart on 8 January 1938.[8] Williams responded negatively on 10 March, stating that the RAAF was 'very short of officers with any sort of experience not only for Staff Duties but also for command of units, and I cannot see any possibility of making an officer available for this appointment for some time'.[9] Even considering that the RAAF had just commenced a re-equipment program, it is difficult to reconcile Williams's attitude on this matter. The precedent of Australian officers commanding RAF Squadrons or accepting senior staff positions at RAF Headquarters had been well established. Of the 19 squadron leaders listed in the *Air Force List 1937*, nine had graduated from the RAF Staff College. Four of these officers were promoted to the rank of Wing Commander within a year, but there were still seven squadron leaders who met the criterion for an appointment to the RAF Far East Headquarters staff in 1938. Two more Australian squadron leaders were students at the RAF Staff College in 1938, and three were attached to the RAF in England.[10] It is conceivable that arrangements could have been negotiated for one of these officers to undertake their post-graduate attachment at Singapore. Williams lost a golden opportunity for a squadron leader to gain extensive staff experience in a geographical area that was of considerable strategic importance to Australia.

Newall did not drop the matter. He approached the current RAAF Chief of the Air Staff, Air Vice Marshal Goble, on 22 February 1939 again raising the question of the filling of a RAAF squadron leader position in RAF Headquarters Far East, but there is no record of any response on the file.[11]

---

[8] Newall to Williams, 8 January 1938, ibid.
[9] Williams to Newall, 10 March 1938, ibid.
[10] *Air Force List 1938*, RHR.
[11] Newall to Goble, 22 February 1939, ibid.

In the 1937 correspondence suggesting that a squadron leader position should be made available to the RAAF, the Deputy Director of Operation's opinion was that 'the appointment of a Royal Australian Air Force officer as AOC Far East would more than anything else .... stimulate Australian interest in the Far East'. Air Vice Marshal Williams and Air Commodore Goble were the two officers considered. The former was considered as too senior for the appointment and the fact that he had not held an Air Ministry appointment or RAF Command was not in his favour. Goble, due to his attendance at RAF Staff College, Imperial Defence College, and appointment in the Air Ministry as Deputy Director of Operations prior to his appointment as AOC No.2 (Bomber) Group, was the more acceptable of the two candidates. The suggestion was made that the Australian Government be approached 'with a view of inquiring if they were willing to agree to Air Commodore Goble succeeding Air Vice Marshal Tedder [as AOC Far East Command] in 1939.[12]

Peirse agreed that this course of action would be 'a valuable step in ensuring that an Australian squadron [would be deployed to Singapore]'[13] and wrote to Newall suggesting that informal discussions with Goble should take place. Peirse discussed the matter with Goble and gave him a copy of the minute forwarded to the CAS 'for his private information'.[14] No documentation is on file to prove that further action was taken. However the crisis in the domestic organisation of the RAAF that resulted from the report of Sir Edward Ellington on his visit to Australia in 1938 would have negated any positive outcome. The ramifications of Ellington's visit and comment in relation to the control of maritime air assets has been discussed previously. One result

[12] Deputy Director of Operations (RAF) to Deputy Chief of Air Staff (RAF), 11 November 1937, ibid.
[13] ibid.
[14] Peirse to Newall, 29 November 1937, ibid.

of the Ellington Report was that Goble superseded Williams as CAS on 28 February 1939.[15]

The presence of Australian squadrons, either on rotation or on a permanent basis, would ease RAF manning, equipment and reinforcement problems. In the Air Staff note of 1 June 1937 the RAF Singapore reinforcement rationale (and the RAAF role) was explained. The paper asserted that RAAF squadrons would:

> … be able to reinforce Singapore in accordance with a timetable in emergency and play a pre-arranged part from allotted aerodromes in its defence. …. Probably the most valuable contribution Australia could make to her own and Imperial defence in the Far East would be the provision at Singapore of a RAAF squadron as part of the permanent air strength of the Far East Command. This would not only relieve the burden of the United Kingdom's contribution to the defence of the Far East, but also sponsor a spirit of co-operation between the air forces of this country and Australia in the best possible way … [16]

Of course this attitude was based on the premise that the RAAF was equipped with suitable aircraft, and in 1937 it was not. As already noted the RAAF was negotiating for the supply of Bolingbroke aircraft to equip general reconnaissance squadrons and delivery of these aircraft in 1938/9 would give the RAAF the capability to deploy to Singapore in a single day in an emergency. In the meantime the exchange of units was a matter that could be considered further. The matter was again raised in December 1939. The staff of the Deputy Director of Plans suggested that the RAAF could send a squadron of Ansons in exchange for one of Vincents. Given the obsolescence of the latter (an army co-operation bi-plane with a maximum speed of 156 mph and a range of 630 miles) it is understandable that the staff considered that it would be 'hardly

---

[15] For an in-depth discussion of these matters see C.D. Coulthard-Clark, *The Third Brother,* pp 114-18, and ' "A Damnable Thing": The 1938 Ellington Report and the Sacking of Australia's Chief of the Air Staff', *The Journal of Military History*, Volume 54, No. 3, July 1990, pp 307-23.

[16] Air Staff Note on Australian Co-operation in the Defence of Singapore and the Far East, 1 June 1937, Air 2/2199, PRO.

good policy to send … such an antiquated type to Australia after all the talk we hear about the modernisation of our forces'.[17]

Pre-war RAAF plans did not include any contingency for units to be deployed outside of continental Australia. But political pressure from the British government effected change. For example, on 28 June 1940 the Dominion Office telegraphed the governments of Australia and New Zealand that the Chiefs of Staff 'considered that the urgent move of a one Division and two squadrons [of] aircraft to Singapore to Malaya is desirable as an added deterrent'.[18] By October 1940 there were two RAAF Hudson squadrons (Nos. 1 and 8) and a Wirraway unit (No. 21 Squadron) based in Singapore. In February 1941 the RAAF supplied three of the eight squadrons based on the island. This represented 37 per cent of the number of squadrons deployed and 41 per cent of the actual aircraft strength.[19] When one considers that two Hudson squadrons were earmarked for forward deployment to Ambon and Timor to help protect the Netherlands East Indies and the supply line to Singapore, it is obvious that the commitment to Singapore placed severe pressure on the operational units of the RAAF. This obligation was not eased by the attitude of a Netherlands East Indies government that was under economic pressure from the Japanese to supply oil and other primary materials. The signing of the German-Italian-Japanese pact on 27 September 1940 further complicated the situation.[20] This pact had, in the opinion of Joseph Grew, the United States Ambassador to Japan, the potential for 'a possible

[17] Plans 4, to Deputy Director of Plans, 4 February 1939, ibid.
[18] Telegram, 28 June 1940, to governments of the Commonwealth of Australia and New Zealand, Air 2/7174, PRO.
[19] Gillison, *Royal Australian Air Force 1939-1942,* p 152.
[20] Gillison, *Royal Australian Air Force 1939-1942,* p 142.

ruthless application of power by Germany in Holland to bring about changes in the situation in the Dutch East Indies'.[21]

At the Far Eastern Defence Conference held at Singapore on 22 October 1940, the Australian delegation conceded that in certain circumstances two squadrons of land based general reconnaissance aircraft could be made available for operation from Dutch bases in the Netherlands East Indies (NEI). Such action would be 'practicable only after staff conversations with the Dutch authorities'.[22] Anglo-Dutch-Australia staff talks commenced in February 1941 and at the Singapore Conference in April 1941 the RAAF undertook the responsibility for 'reconnaissance northward and to provide a striking force to operate in the Dutch area'.[23]

The result of these talks was a short-lived period of practical liaison between NEI and RAAF units. NEI based aircraft had visited Australian bases between 16-19 May 1941 when three Glen Martin bombers and three Dornier DO-24 flying boats, under the respective commands of Captain G. Roos and Lieutenant Commander R.T.A. Meester, visited Darwin. These aircraft returned to NEI accompanied by a formation of five Hudsons that proceeded to Koepang, Laha and Namlea. Three aircraft returned on 22 May; Wing Commander J.R. Balmer, the commander of No. 13 Squadron and the fifth aircraft returned two days later.[24] This was a far more positive approach than the action taken by a Netherlands East Indies Fokker floatplane that shadowed a Seagull on 10 April 1940. The Australian aircraft had been launched from HMAS *Westralia* to identify and photograph the German vessel *Scheer*

---

[21] N. Tarling, *Britain, Southeast Asia and the Onset of the Pacific War,* Cambridge University Press, Cambridge, 1996, p 149.
[22] Notes for guidance of Australian Delegate, 12/501/58, CRS A1196/6, AA.
[23] 'ADA' Conference, April 1941, 12/501/85, CRS A1196/6, AA.
[24] No.13 Squadron ORB, entries 16, 19, 22 and 24 May 1941, RHR.

at Macassar. As the Australian amphibian approached the three-mile limit, the NEI aircraft flew alongside and ordered the Seagull to return to the *Westralia.* The Seagull crew ignored the order, identified the *Scheer* and then, due the 'Fokker [becoming] persistent', returned to the ship. Next day the German ship was photographed and the aircraft was not interfered with.[25] The Australian crew was infringing on national sovereignty and the action of the Fokker crew was therefore justified. This minor incident, and the proprieties to be followed by visiting allied aircraft illustrate the delicacy of diplomatic negotiations between Great Britain and the Netherlands East Indies and other potential allies in the area.[26]

During this period an Air Liaison Officer position was established at Bandoeng and began forwarding periodic reports to the Australian Air Board in May 1941. Where 'the importance of close liaison [between the RAAF and the NEI Naval Arm] has already been apparent and close touch is already kept with Lieutenant Commander Meester, Staff Officer Air', the attitude of the NEI Air Force was not so compliant. The lack of co-operation given to the RAAF to enable the development of facilities at Laha, the airfield on the island of Ambon, was frustrating. The NEI Air Force attitude was that neither force would operate together at Laha and that the NEI Air Force units would withdraw to bases 'closer to Java should hostilities commence'. The Australian's attempt to establish facilities to enable two squadrons to deploy, partially in defence of the NEI and as portion of the RAAF forward defensive stance, was being hampered by NEI recalcitrance. The NEI defensive mind-set did not favour the building of additional airfields unless they were located away from the coastline

[25] No. 9 Squadron UHR, HMAS *Westralia* Detachment, 10/11 April 1940, RHR.
[26] For a comprehensive discussion of these negotiations see N. Tarling, *Britain, Southeast Asia and the Onset of the Pacific War,* pp 79-96, 139-58; 212-38 & 303-14.

and could be protected by defensive posts located in adjacent hills.[27] A further difficulty was the Far Eastern European attitude that 'time seems no object'. Group Captain C.S. Wiggins, the Director of Signals, was faced with this problem when he attempted to obtain progress reports on the development of Wireless Telephony huts at Laha and Namlea (on the adjacent Buru Island) during May/June 1941. He found it 'impossible to find information whatsoever' and requested permission for a Hudson to meet him at Koepang (Timor) and transport him on an inspection of Namlea and Laha.[28] The circumstantial evidence is that he did not visit these bases until 5 July. On this date Wing Commander J.R. Balmer flew from Darwin to Koepang, Ambon and Namlea, returning on 8 July 1941.[29]

Such prevarication by NEI authorities was reflected in arrangements for training flights between NEI Air Forces. On 18 July 1941 the General Headquarters Bandoeng advised that the NEI Governor General had agreed to the Department of War proposal to allow British and Australian aircraft to periodically visit bases that they would occupy in time of war. Reciprocal rights were given to NEI air forces aircraft. There were restrictions applied to the deployment of RAAF aircraft and airmen. Flights were not to receive any publicity or coincide with the presence of civilian aircraft at any of the airfields. Any deployment was not to exceed one week. All crews were to wear civilian clothes when leaving the bases. If the presence of British or Australian aircraft required explanation, the official reply was that its presence was 'necessary to fight the possible presence of German or Italian raiders or

[27] Air Liaison Officer Bandoeng, Operational Report No. 2, 25 May 1941, 60/501/58, CRS A1196/6, AA.
[28] Air Liaison Officer Bandoeng, Operational Report No.6, 26 June 1941, ibid.
[29] No. 13 Squadron ORB, entries 5 and 8 July 1941, RHR.

that [the] British aircraft [was] flying via NEI aerodromes to Malacca or British Borneo'.[30]

Prior to the outbreak of war in the Pacific Ocean, No. 13 Squadron flew to the NEI on two occasions. Two separate formations of four No. 2 Squadron Hudson flew reconnaissance missions from Koepang, Namlea and Laha between 26 September and 8 November 1941.[31] There is no evidence of any combined operations being conducted with NEI forces, although there were plans for a combined exercise to be undertaken during December 1941. The RAAF took these exercises seriously, and 'considered that if the operations room of ACH (Allied Combined Headquarters) was fully furnished and sections set up in a temporary nature the exercise could be completely carried out'. Thus the command and control staff could be exercised in addition to the two flights of four aircraft from each of No. 13 and No. 2 Squadrons based at Namlea and Laha respectively. The exercise was planned for a period of three to four days followed by a two-day debriefing session. The DCAS approved the deployment of a single flight from each squadron, but the advent of war on 7 December took precedence.[32]

The operational readiness of the Hudson squadrons was a matter of conjecture. Wing Commander W.H. Garing, the Senior Air Staff Officer, attended a conference held at Northern Area Headquarters on 4-5 June 1941. He assessed pilots being posted to the squadrons as being 'not fit [to be] Hudson captains' but, realistically, prophesied that this problem would be negated once a relevant

[30] Air Liaison Officer Bandoeng, Operational report No. 10, 24 July 1941, 60/501/58, CRS A1196/6, AA.
[31] No. 13 Squadron ORB, May-December 1941; No. 2 Squadron ORB May-September 1941, RHR.
[32] Air Liaison Officer Bandoeng, Operational report No.12, 14 November 1941, 60/501/58, CRS A1196/6, AA.

operational training unit was established. (The Hudson Operational Training Unit, No. 1, was established on 8 December 1941.) Of immediate importance was that he was 'far from happy … regarding Hudson serviceability' and that petrol supplies at advanced operational bases were 'inadequate for our needs'. Plans for the replenishment of these bases during operations appeared to be 'impractical and dangerous'.[33] In a subsequent letter to Group Captain F.W. Lukis, Officer Commanding Northern Area, Garing asserted that the 'operational squadrons in Northern Area [were] not fully prepared for war operations and in a crisis it is doubtful if they can operate continually for more than 10 or 12 days, mainly due to lack of maintenance support for the aircraft'.[34] Despite the lack of preparation the two Hudson units, No. 2 and No. 13 Squadrons, deployed from Laverton to Darwin and Koepang on 10 December and Laha and Namlea on 7 December 1941, respectively. Maintenance support for both squadrons was organised at Darwin[35] but this placed restrictions on their operations. Major maintenance could not be undertaken at the advanced bases and the squadrons were linked to Darwin by a tenuous supply line and, as the Japanese air raids on the township on 19 February 1942 was to prove, Darwin was virtually unprotected. The only RAAF unit based in the area, after the deployments of No. 2 and No. 13 Squadrons to their advance bases, was the Wirraway equipped No. 12 Squadron. The RAAF legacy of the Singapore strategy was that squadrons had been deployed to assist with the direct defence of the island, and to protect the lines of communication between Singapore and Australia, to the detriment of the local defence of vital strategic points, such as Darwin, by the RAAF.

---

[33] Conference Northern Area June 1941, 12/501/89, CRS A1196/6, AA.
[34] Wing Commander Garing to Group Captain Lukis, Officer Commanding Northern Command, 25 June 1941, ibid.
[35] No. 2 Squadron ORB, 10 December 1941, RHR.

A combination of ill-preparedness and lack of cohesion between the Allied forces ensured that they were unable to effectively counter the Japanese assault. The Malayan/NEI campaign has been well documented, and it is not intended to cover this subject.[36] In the context of this study it is important to stress that the RAAF maritime strike force was decimated during this period. No. 2 and No. 13 Squadron lost a total of 56 aircraft to all causes in the period between 7 December 1941 and 30 December 1942. The two Malaya based units, No. 1 and No. 8 Squadron, lost 30 aircraft in the same period.[37] These four squadrons were responsible for the loss of 35 per cent of the RAAF's total Hudson fleet. As this aircraft type was the backbone of the maritime reconnaissance and strike force this was a significant figure. When coupled with the loss of experienced air and ground crews that could not be readily replaced, the magnitude of the defeat cannot be underestimated. The aircraft selected to replace the Hudson in these squadrons is indicative of the equipment problems that was faced by the RAAF. The four units were either re-equipped or reformed between March 1943 and January 1944. No. 1 Squadron flew Beaufort aircraft in North Western Area from February 1944 until January 1945. No. 2 Squadron operated Mitchell bombers from June 1944 until March 1945 while No. 8 Squadron flew Beaufort aircraft operationally along the north coast of the island of New Guinea from September 1943. No. 13 Squadron returned to Gove in the Northern Territory with Ventura patrol bombers in August 1944.[38] The Mitchell was the only first class aircraft of the three

---

[36] Examples are Gillison, *Royal Australian Air Force 1939-1942;* E.R. Hall, *Glory in Chaos,* Sembawang Association, Melbourne, 1989; J. Bennett, *Defeat into Victory,* RAAF Museum, Point Cook, 1994*;* W. Brooke, *Demon to Vampire,* Demonvamp Publications, Melbourne, 1986; J. Balfe*, War Without Glory*, MacMillan, Sydney, 1984.

[37] S. Grantham, *The 13 Squadron Story*, Dee Why, Sydney, 1991, Appendix D; J. Bennett,. *Highest Traditions: The History of No. 2 Squadron, RAAF,* Australian Government Publishing Service, Canberra, 1995, pp 379-86; Wilson, *Anson, Hudson and Sunderland in Australian Service,* pp 135-6.

[38] *Units of the Royal Australian Air Force: A Concise History, Volume 3, Bomber Units*.

types operated by the ex-Hudson equipped squadrons to operate from bases in the NWA. As will be discussed, these aircraft types were of peripheral value in enabling an aggressive strategic maritime policy to be followed by the RAAF in 1944 and 1945.

Bombing

When Air Commodore F.M. Bladin assumed command of North Western Area on 25 March 1942, he was presented with the challenge of preventing the Japanese from gaining a foothold in the area and of conducting Allied offensive operations against enemy concentrations and facilities.[39] The Japanese Navy and Army air raids on Darwin on 19 February 1942 exposed the weakness of the Allied situation in the Northern Territory. The RAAF had to consolidate its position prior to turning to the offensive. To meet the defensive aspect of his directive, Bladin had to establish fighter defences and develop airfields and support facilities. To meet these requirements it was planned to construct 33 airfields, and establish three servicing units and a stores depot.[40] The year 1942 must be seen as being one of defence and consolidation. The fighter defence of Darwin on 19 February 1942 depended on transient USAAF units en route to Java. There were no fighter squadrons in the RAAF Order of Battle in Australia in February 1942 and even when the first three were raised in March they were deployed to meet threats in New Guinea. The first RAAF fighter squadron deployed to defend the Darwin area, No. 77, did so in July. After the Battle of Milne Bay (August–September 1942), No. 76 Squadron flew to Strauss, south of Darwin, on 9 September. These two Kittyhawk squadrons were the only RAAF fighter units in the

[39] Helson. P, 'The Forgotten Air Force: The establishment and employment of Australian Air Power in the North-astern Area 1941-1945', MA Thesis, University of New South Wales, 1997, p 75.
[40] ibid, p 88.

area until the Spitfires of No. 1 (Fighter) Wing arrived in January 1943.[41] The final Japanese air raid on the Northern Territory was on 12 November 1943[42] During the defensive phase of NWA aerial campaign 'kills' favoured the Allies: 59 defending aircraft were destroyed or missing, but the Allied pilots claimed that they had inflicted 125 confirmed losses on the enemy raiders.[43] Japanese attempts to prevent the increase in air strength in the North Western Area met solid resistance. By mid-1943 the fighter squadrons had established the security of the bases required for the development of offensive operations. This was the basic provision of the pre-war Air Force maritime doctrine.

At the end of 1942 the aerial assets of North Western Area had been further augmented by the arrival of the heavily armed twin-engine Beaufighters of No. 31 Squadron. No. 1 Photographic Reconnaissance Unit (renamed No. 87 Photographic Reconnaissance Squadron on 9 September 1944) arrived at Coomalie Creek in November. In addition, No. 12 Squadron had replaced its Wirraways with Vultee Vengeance dive-bombers and flew the first operational sortie with the type on 2 December. For reasons beyond the scope of this discussion, the Vengeance was not an operational success and the Squadron was destined to serve at Merauke in Dutch New Guinea before being equipped with Liberator bombers and rejoining the war in North Western Area in 1945. The RAAF could argue that the deployment of long-range strike fighters, modern medium bombers and a rudimentary photographic reconnaissance capability in the Northern Territory gave it a limited offensive

---

[41] A detailed account is in ibid, pp 84-119; B Alford, *Darwin's Air War*, The Aviation Historical Society of the Northern Territory, Darwin, 1991; J. Grant, *Spitfires Over Darwin 1943,* R.J. Moore, Melbourne, 1995; J.D. Rorrison, *Nor the Years Contemn: Air War on the Australian Front 1941-1942,* Palomar Publications, Brisbane, 1992.
[42] *Raids on the Australian Mainland,* RHR.
[43] Alford, *Darwin's Air War,* pp 78-9.

capability. The photographic reconnaissance capability would be enhanced with the advent of the F-4 Lightning in October 1942 and the introduction of the superb De Havilland Mosquito in May 1944.[44] The equipment basis for future operations was being laid, but it was based on five different aircraft types with different performance and operational capabilities. The lack of heavy bombers and long-range escort fighters was one factor that restricted strategic offensive operations.

The Hudson crews of the seriously under-strength No. 2 and No. 13 Squadrons fought with such valour and distinction that they were awarded a United States Presidential Unit Citation for their individual efforts. The citation for the award (with an identical form of words for both squadrons) reads:

> Number Two Squadron, Royal Australian Air Force is cited for outstanding performance of duty in action during the period from 18 April 1942 to 25 August 1942. Operating from bases in North Western Australia, this Squadron equipped with aeroplanes highly vulnerable to enemy fighter aeroplanes made repeated attacks on enemy shipping, aerodromes, troops and installations on and near Timor, Amboina and other Islands in the Banda Sea, inflicting heavy damage to enemy material and causing numerous casualties. It successfully maintained continuous long-range reconnaissance over the waters to the north west of Australia. The courage of its members in combat and the high morale of this Unit under hazardous combat situations, contributed greatly to the success of operations in the area.[45]

The Mitchells of No. 18 (NEI) Squadron arrived at Macdonald airfield in December to give much needed reinforcement to the medium bomber force. However, the advent of the Dutch squadron did not, in the opinion of the Group Captain Gibson, the Senior Staff Officer, RAAF Command, give immediate succour to the hard pressed Allied forces. After an extensive tour of operational areas undertaken between 22 January and 5 February 1943, his opinion of the Squadron was scathing. Given that

---

[44] *Units of the Royal Australian Air Force, Volume 2 and Volume 3,* relevant squadron entries.
[45] Draft cablegram to the Dominions Office, 12 March 1943, copy held by RHR.

No.18 (NEI) Squadron had only commenced operations on 18 January 1943, Gibson's comment may be considered premature. He wrote that:

> No.18 Squadron is in a poor state owing to turret unserviceability. [Gibson] was not impressed with the spirit of No.18 Squadron. They had not got over the 'flesh pots' of Canberra. The Squadron seemed slovenly and their efforts generally on operations had been half-hearted and remarkably lacking in determination to close the target … [46]

The Squadron had commenced its move from Canberra on 11 December 1942 after many administrative prevarications. The preparation of the site at Macdonald and the modification to the aircraft fuel tanks at No. 1 Aircraft Depot was tardy. The main party was delayed by washaways on the main railway line between Terraria and Alice Springs until 13 December 1942 and the rear party that had travelled by sea did not arrive at Macdonald until 13 January 1943. Thus the Squadron had only been united for four days before flying its first operational sortie - an uneventful reconnaissance of Tanimbar Island.[47] Gibson's comment does highlight the logistic problems of maintaining a fighting force dependant on a tenuous communication link with the south - a link based on an incomplete single railway link, unmade 'fair weather' roads to north Queensland, long shipping routes and meagre air transport assets.

However, Gibson was not the only senior RAAF officer concerned with the performance of No. 18 Squadron. Bostock too perceived that the performance of the Squadron was a matter for concern. In the context of negotiations for the deployment of USAAF B-24 Liberator heavy bombers to North Western Area, Bostock questioned Bladin on whether he could obtain better operational availability from No. 18 (NEI) Squadron.[48] Bladin replied on 4 February 1943 to advise that he was 'dissatisfied too

---

[46] Group Captain Gibson, SASO, *Report of operational units and areas (with OPS1) between 22 January and 5 February 1943,* 319/1Q Pt 1, CRS A1969/100, AA.
[47] G. Wallace, *Up In Darwin with the Dutch,* Ringwood, Victoria, 1983, p 18.
[48] Bostock to Bladin, 2 February 1943, 320.5K3, CRS A11093/1, AA

with [No.] 18 Squadron and will visit [the squadron] today to investigate'.[49] This he did.[50]

North Western Area medium bomber assets were briefly augmented from USAAF sources in November 1942. On 30 October 1942 Bladin was advised that a squadron of B-26 Marauder medium bombers would be under his operational command to undertake four raids on targets in the Dili area. A bemused Bladin reported that the aircraft had arrived on the 30th, but that he required detail of 'any known purpose to be served in order [that the] most effective use can be made' of the aircraft.[51] Fifth Air Force, through its subordinate formations, 5th Bomber Command and RAAF Command, gave vague direction next day. The B-26s were to make an attack on 4 November before returning to their 'proper station in North Eastern Area on Thursday November 5'.[52] In fact the Marauders made five raids over Timor, claiming to have destroyed six enemy fighters in the process for the loss of one Marauder on 2 November. Twelve aircraft from the 2nd, 408th and 19th Squadrons of the USAAF 22 Bombardment Group participated.[53]

The Commander of the United States 5th Air Force, Lieutenant General Kenney, had no intention of basing medium bombers permanently in North Western Area. He instructed 5th Air Service Command, the formation responsible for aircraft maintenance and support facilities, to make the necessary arrangements at Darwin 'to accommodate air echelons of … 5th Air Force units as are required to operate *temporarily* [emphasis added] … [it is] desired you station the 43rd Service Squadron

[49] Bladin to Bostock, 10 February 1943, ibid.
[50] No. 18 NEI Squadron, ORB, 4 February 1943, RHR.
[51] Bladin to Bostock, 31 November 1943, 320.5K3, A11093/1, AA.
[52] Headquarters, 5th Air Force, to 5th Air Force Bomber Command and RAAF Command, 4 November 1942, ibid.
[53] Alford, *Darwin's Air War,* p 34.

… at Fenton … to prepare to receive, at short notice, up to two tactical units operating for not more than one week without reinforcing ground personnel …'.[54]

Squadrons of two USAAF Heavy Bombardment Groups were deployed to North Western Area. Units of the 90th Bombardment Group operated from February 1943 until departing from Fenton on 7 July. They had been progressively replaced by units of the 380th Bombardment Group, which remained in the area until the end of February 1945.[55] A study of the overall pattern of operations of these groups illustrates the multi-faceted nature of operations mounted from the Darwin area. On 16 January 1943 Kenney approved the deployment of a flight of four B-24 Liberator bombers to Fenton for 'visual, photographic reconnaissance and bombing [duties] until further notice'.[56] In response to Land Headquarters intelligence regarding a concentration of troops on Ambon, the AOCNWA approached Air Vice Marshal Bostock on 26 January requesting the deployment of a further 12 Liberators for a period of 7 days to enable strikes to be made against these targets.[57] Approval was given, but the priority task for these aircraft remained deep reconnaissance with the additional task of concentrated attacks on shipping and stores at Ambon, the naval base and shipping at Halong and the aircraft and aerodrome at Laha.[58]

Ten B-24s of the 319th Squadron, 90th Bombardment Group, landed at Fenton on 4 February. The squadron flew a long range bombing mission to Ambon on the following day and follow-up raids on 15 and 21 February.[59] The 319th, despite

---

[54] Headquarters, 5th Air Force, to Commanding Officer, 5th Air Service Command, 6 November 1942, 320.5K3, CRS A11093/1, AA.
[55] Alford, *Darwin's Air War,* pp 48-54.
[56] HQAAFSWPA, to AOC RAAF Command, 18 January 1943, 320.5K3, CRS A11093/1, AA.
[57] AOCNWA, to Air Vice Marshal Bostock, 26 January 1943, ibid.
[58] RAAF Command Headquarters to AOCNWA, 27 January 1943, ibid.
[59] Alford, *Darwin's Air War,* p 48.

problems with the supply of engines and maintenance personnel,[60] flew 75 missions - one, of 4000 kilometres [2500 miles], to Sourabaya. Forty-eight of the missions [68 per cent] were reconnaissance[61] and impressed Bladin. On 9 April he advised Bostock, with a copy to Headquarters 5th Air Force, that:

> [I consider that] 319 Squadron are doing excellent work and show high fighting spirit … I make these observations after watching every phase of recent strike on Babo including flying with them on [the] strike. Consider Squadron's work in no small part [due to] Lieutenant Olsen's leadership and recommend he be promoted Captain and left in command.[62]

Without specific data to confirm the assertion, it seems that the pattern of operations undertaken by the 380th Bombardment Group was similar to that of the 90th Bombardment Group. The 380th Bombardment Group undertook several long-range operations aimed at strategic targets. One in particular is indicative of the potential of North Western Area as a base for strategic missions. The example chosen for analysis, the attack by the Group on Balikpapan during January 1944 shows the multi-national aspect of operations in the area and the reality of strategic missions and their affect on the current maritime operational environment.[63]

The origin of these operations dates back to June 1943 when Intelligence Section, General Headquarters, advised RAAF Command that a Dutch officer had reported that 'periodical attacks on Balikpapan are likely to cause serious disruption to the enemy's supply organisation'. Bostock suggested to Kenney that the 380th Bombardment Group was capable of undertaking such an operation but that the effort would have to be maintained for, 'unless such attacks are persistent, they have relatively little effect other than an effect on the morale of the native population.'

---

[60] RAAF Command to NWA, 7 March 1943, 320.5K3, CRS A11093/1, AA.
[61] Alford, *Darwin's Air War,* p 48.
[62] Bladin to Bostock, 9 April 1943, 320.5K3, CRS A11093/1, AA.
[63] Alford, *Darwin's Air War,* p 50.

However, given the timing of *Cartwheel* operations against Cape Gloucester in New Britain, long-range efforts could 'militate against the concentration of strength on the closer enemy bases'. Bostock recommended that armed reconnaissance missions by 2 or 3 aircraft be undertaken until operations then in process were completed.[64] Kenney approved this course of action on the 20th but the planning for a major strike was placed in abeyance until the *Cartwheel* series of operations were completed.

The 380th Bombardment Group attacked Balikpapan on 13 and 16 August 1943. Both raids involved 11 aircraft. The combined effect of these attacks was the sinking of the *Katori Maru* and damage inflicted on the refinery, oil storage tanks and other facilities. This series of attacks earned the Group the first of its two Presidential Unit Citations awarded during its period of operation under Australian operational control.[65]

Although successful in themselves, the aftermath of these raids clearly vindicated Bostock's opinion that such an effort had to be sustained to be effective. On 15 November 1943 the Area Intelligence Officer reported to the Senior Air Staff Officer, NWA that indications were that Balikpapan remained 'in full operation as a fuel centre'. A reported 256,000 tons of shipping had used the port during the previous six weeks and 'refined products, including aviation gasoline [had] been shipped to Truk, Rabaul, Sourabaya, Ambon and Macassar'. During September 55,000 tons of crude oil had arrived from Tarakan for refining. The report concluded that heavy daylight raids on Balikpapan would place a heavy burden on enemy shipping (in particular tankers), as refined petroleum products would have to 'be brought from Sumatra or Japan to the forward area'. In the long-term air attacks on the

[64] Bostock to Kenney, 14 June 1943,373.6F, CRS A1969/100/6, AA.
[65] Alford, *Darwin's Air War,* p 50.

cracking plants and oil refinery could only exacerbate Japan's growing deficiency in oil. There would also be immediate tactical affects. The disruption of oil supplies from Balikpapan would cause an immediate shortage of lubricating oil for the forces facing the Allied offensives.[66] The value of disrupting Japanese oil supply from Balikpapan had obvious tactical and strategic repercussions and planning commenced in NWA for a long-range attack

The 380th Bombardment Group was still the only Allied formation in North Western Area capable of mounting the mission. The direct distance from Fenton to Balikpapan was 1,140 miles and to undertake the operation individual aircraft were required to be fitted with long-range tanks to give a total fuel capacity of 3,500 gallons. The aircraft, overloaded by 10,000 pounds and operating at extreme range, were faced with five heavy and one light anti-aircraft batteries at Balikpapan and possible fighter interception from the airfield at Mangar. Colonel William A. Miller, the commander of the 380th, considered the operation would be extremely hazardous, and estimated a loss rate of 20 per cent. Despite his foreboding, Miller was 'ready to attempt this mission and personally lead it, because of the importance of the target if we are prepared to accept the losses …'[67] Air Vice Marshal Adrian Cole, who had been appointed AOCNWA, disagreed with Miller's assessment. He considered that the loss rate would be in the order of 5 per cent, and requested permission to 'accompany this attack if carried out'.[68]

On 22 January 1944 Cole expressed his concern that due to 'the almost complete change of crews ... in 380th Bomb Group, the standard of efficiency is not

[66] NWA Intelligence Officer to Senior Air Staff Officer HQNEA, 15 November 1943, 373.6F, CRS A11093/1, AA.
[67] Minute, Colonel William A. Miller, 13 January 1944, ibid.
[68] Air Vice Marshal Cole to Headquarters RAAF Command, 14 January 1944, ibid.

good enough for heavy, very long, daylight sorties, through present weather, against well-defended enemy bases'. His solution was to use a flight of RAAF B-24 and expert crews and use them for use in the 'old pathfinder role to find and mark targets'. However, Cole did not wish to cancel his proposed daylight attack on Balikpapan; his letter did 'not cancel, but defers that recommendation.'[69] Kenney approved the plan for 18 aircraft to attack in daylight on 24 January; approval for the personal participation of Cole was not forthcoming.[70] The planning for the long-range daylight raid on Balikpapan illustrates the problems of operating separate national formations and of different strategic priorities.

The operation of the 380th Bombardment Group on the night of 12/13 January 1944 illustrates the practical problems of operating in the area. The Group's 531st Squadron was ordered to detail six bombers to attack the aviation fuel refinery at Balikpapan. Another six Liberators from the 528th Squadron aimed at bombing the benzine refinery and the remaining six bombers from the 530th targeted the cracking plant. The Macassar dock area and the town of Dili were designated as alternate targets.[71] The aircraft took off from Fenton and Long to face

> … the usual spectrum of Pacific weather that varied intensity and location within the bomber stream. There were at least three distinct weather fronts that challenged the airmen, one north of Timor in the Flores Sea and the other two blocking the Macassar Straits, Returning crews reported weather variations ranging from patchy thunderstorms to skyrocketing up or down drafts that threatened their very survival.[72]

Eight aircraft reached Balikpapan and hits were claimed on the aviation and benzine refineries, cracking plant and the wharves. The other aircraft were forced to attempt to

---

[69] Cole to AOC RAAF Command, 22 January 1944, ibid.
[70] RAAF Command to Headquarters NWA, 24 January 1944, ibid.
[71] 308th Bomb Gp (H), Field Order No. 78, 11 January 1944.
[72] G.R. Horton, *The Best in the Southwest: The 380th Bombardment Group (H) in World War II Southwest Pacific Area,* Mosie Publications, Savage, 1995, p 145.

bomb the alternate targets or jettison their bombs over the sea before returning to Fenton and Long. The last aircraft to land had been airborne for a total of 17 hours and 35 minutes; two of his engines stopped from lack of fuel as the aircraft turned off the runway at Long after landing.[73]

These operations must be seen in the perspective of Kenney's perception that operations from North Western Area were subsidiary to, and in support of, the main United States Army thrust through New Guinea and the northeastern islands of the Netherlands East Indies. On 20 May 1943 Kenney wrote to Air Vice Marshal Bostock directing that, because an

> analysis of enemy intentions has shown an uncertainty in his mind as to just where the Allied counter offensive will begin and when, in order to assist the New Guinea offensive and to further increase the confusion in the enemies plans you will take the necessary measures to increase the show of force in Northwestern [sic] Area.[74]

The increased strength of RAAF and USAAF bomber forces in North Western Area was deigned 'sufficient to permit periodic demonstrations to impress the enemy that large reinforcements have been made …'.Kenney concluded that the Japanese ability to respond to Allied action depended on the airfields located at Koepang, Kendari, Ambon and Babo that 'represent the natural objectives we would have if an actual offensive were being launched from Darwin'. Priority was to be given to the elimination of Koepang as a major staging area, forcing the Japanese to 'centre additional effort on developing the Kendari, Ambon and Babo Area. This is what we desire to do in assisting the New Guinea action'. To further the deception raids were to be undertaken using the maximum number of aircraft. Kenney's directive was

---

[73] Horton, *The Best in the Southwest,* pp 145-8; 380th Bomb Group, Report of Operation FEN3 on Jan 12th 1944, 15 January 1944.
[74] Kenney to AOC RAAF Command, 20 May 1943, 373.6F, CRS A1969/100/6, AA.

incorporated in RAAF Command Operational Instruction No.43/1943 that was issued on 25 May 1943.

This pattern of using North Western Area facilities to support the main thrust along the north coast of New Guinea into the Dutch East Indies and later campaigns reappeared in April 1944 when the airfields at Aitape and Hollandia fell to combined Australian and United States forces. Colonel G. Beebe, Chief of Staff, Headquarters AAFSWPA, wrote to Bostock voicing concern that Japanese forces concentrated in Borneo, Mindanao and on the Vogelkop peninsular could prove a threat to these operations. To meet this possibility, Beebe sought 'tentative arrangements for the transfer of heavy bombardment from New Guinea to Darwin during the period approximately three weeks following the *Reckless* [code name for the Aitape/Hollandia landing] operation so that Bombardment can reach as far to the Northwest as possible'.[75]

Operations in support of the landings at Aitape and Hollandia were aimed at neutralising enemy air bases within Geelvink Bay, Dutch New Guinea, harass enemy installations bordering the Timor Sea, undertake air reconnaissance 'of enemy air and sea forces at Manokwari, Moemi, Efman Island, Halmahera Islands, Nambire, Ambon, Babo and the sea approaches thereto' and assist the Allied Intelligence Bureau in the establishment, supply and maintenance of observation posts and advanced parties.[76] This was not the only impost placed on the North Western Area based units. The subsequent landings at Wakde and Biak in May were supported from North Western Area, but not without Bostock commenting to Kenney that 'the air

[75] Colonel Beebe, Chief of Staff, HQAAFSWPA, to AOC, RAAF Command, 11 April 1944, ibid.
[76] AOC, RAAF Command to Commander, Allied Air Forces, 24 April 1944, ibid.

operations required in support of this operation will consume the whole air effort available in NWA'.[77] The long-range effort fell upon the hard worked 380th Bomb Group. Group Captain Gibson was of the opinion that the Group would not be very effective due to 'crew fatigue … resulting from past concentrated operations' and sought the dispatch of the 90th Bombardment Group to augment the long-range bomber force.[78] Despite Gibson's misgivings, the 380th Bombardment Group performed admirably and was awarded their second Presidential Unit Citation for operations during 20 April to 17 May 1944.[79]

In March 1944 work commenced on the construction of facilities on Melville Island, north of Darwin, for three fighter squadrons. This airstrip was to support proposed amphibious operations in the Kai and Tanimbar islands. Although the airfield was completed the project that it was to support did not develop past the planning stage.[80] Kenney's attitude to this plan was, to say the least, cynical and indicative of his whole approach to operations mounted from North Western Area. He confided in the Commander, South-West Pacific Area, General Douglas MacArthur that:

> … I want to have the thing planned so that if any leaks come out and the Japs get wind of the show they move forces into the NEI and therefore divert their forces from Northwestern New Guinea … [81]

Therefore it was extremely difficult for Bostock to balance his ideal of consolidating a long-range strike force and mounting a strategic offensive from the Darwin area with

[77] Bostock to Kenney, 20 May 1944, ibid.
[78] Group Captain Gibson to Commander, Allied Air Forces, 24 April 1944, ibid.
[79] Alford, *Darwin's Air War*, p 51.
[80] D. Wilson, *Always First: The RAAF Airfield Construction Squadrons 1942-1974,* Air Power Studies Centre, Canberra, 1998, pp 39-40.
[81] George C. Kenney Papers, 31 March 1944, United States Air Force Office of History, Bolling AFB.

the ambitions of his superior officer. The current reality was promulgated in RAAF Command Operational Instruction No. 73/1943 *Employment of Air Forces* dated 4 August 1943. The general reconnaissance/bomber and medium bomber squadrons were tasked to undertake reconnaissance of the Timor and Arafura Seas and attack enemy installations in Timor, Tanimbar Islands, Kai Islands, Aroe Islands and the south coast of Dutch New Guinea. RAAF Command directed that the Heavy Bomber Squadrons should undertake reconnaissance flights and attack enemy bases and lines of communication. In the vicinity of Ambon, Ceram, Babo-Kaimana-Manokwari the target priority was dock installations, naval bases, aerodromes and shipping. The strategic importance of the oil refineries at Balikpapan, Tjepoe and Wonokromo was reflected in their being identified as potential targets, as were the docks, industrial areas and aerodromes located in the vicinity of Sourabaya, Macassar and Batavia.[82] The dearth of heavy bomber units in the North West made it extremely difficult for the Area Command to meet these strategic expectations.

This directive remained in force for the remainder of 1943, and an analysis of the operations of the relatively short-range strike fighter and medium bomber squadrons of the RAAF's No. 79 wing for five months in 1944 give a picture of the maritime defensive (even though tactically offensive) nature of the operations of these units. The four squadrons - No. 1 Squadron (Beaufort), No. 2 (Beaufort/Mitchell), No. 18 NEI (Mitchell) and No. 31 (Beaufighter) - flew 12,763 operational hours (1,542 sorties) during the period February-June 1944. Of these operational hours 5,885 (48 per cent) were on seaward reconnaissance duties, 307 (3 per cent) defined as 'fleet co-operation' and 3,649 (28 per cent) were strike missions. The remaining 2,922 hours

[82] Headquarters, RAAF Command, Operation Instruction No.73/1943, 4 August 1943, 381.91J Pt 3, CRS A11093/1, AA.

(13 per cent) included normal administrative, training and positioning flights.[83] As late as 21 November 1944 the Director of Operational Requirements at Air Force Headquarters, Group Captain W.H. Garing, reinforced the concept when discussing the primary role of the heavy bomber squadrons in North Western Area. His opinion reiterated the provisions of Directive 73/1943 in that they should undertake:

> … effective reconnaissance to seaward to provide positive or negative evidence of enemy seaborne activity. Aircraft must be prepared to report, shadow and attack as may be dictated or ordered by the tactical situation … reconnaissance of land objectives may be allotted as an additional role.[84]

The secondary task was that of the 'destruction of enemy land or sea targets by bombing attacks by day or night' and reconnaissance.

The No. 79 Wing statistics reflect the over-all defensive strategic posture and also their maritime nature. An assessment of later Australian B-24 Liberator operational statistics bear out the emphasis on dominating the maritime environment to deny freedom of movement to the Japanese. This policy ensured that Japanese island garrisons were isolated. The four squadrons (Nos. 12, 21, 23 and 24) flew 871 sorties between 30 April 1944 and 30 June 1945. Of these 601 (69 per cent) were searches to seaward and 166 (19 per cent) strike missions. The remainder were made up of a combination of harassing, armed reconnaissance and special (electronic intelligence, sorties in aid of the Allied Intelligence Bureau, special and leaflet dropping) operations.[85] During July 1945, 99 operations were flown by Liberators, 32 of which were aimed at aerodromes. The remainder were standard seaward reconnaissance flights (62), four searches of the Banda Sea and one armed

---

[83] No. 79 Wing, ORB, February-June 1944, RHR.
[84] Minute, Director of Operational Requirements, 21 November 1944, 15/501/245, CRS A1196/6, AA.
[85] Data is based on No. 12 Squadron, ORB, May 1944-August 1945; No. 21 Squadron, ORB, 28 December1944-31 May 1945; No. 23 Squadron, ORB, April-June 1945 and No. 24 Squadron, ORB, 1 July 1944-30 May 1945, RHR.

reconnaissance mission;[86] 67 per cent of the operations in July met the primary aims of Directive 73/43 and Group Captain Garing's pronouncement of 21 November.

Air Vice Marshal Adrian Cole was not prepared to accept that the Area should be involved in solely defensive operations, no matter how active these measures appeared. On 8 October 1943 he wrote to Air Vice Marshal Bostock suggesting a build up of facilities and combat units in North Eastern Area.[87] On 21 October Cole laid down the principles to be met before a 'suitably planned advance through this [NWA] area' could be mounted. He identified six:

> 1).The efficiency and scale of air cooperation decreased in direct ratio to the distance of that cooperation from its base;
>
> 2). Sufficient air power must be retained to protect the area against air attack, counter attack by seaborne forces and protect friendly shipping and lines of communications;
> 3). Air operations on an increasing scale would commence before the amphibious assault and the air component of the task force would do most of the operations to train [in] and learn the local area;
> 4). Local air superiority would be required for all phases of the assault;
> 5) Enemy must be prevented from reinforcing the assault area; and
> 6). Protect lines of communications and sea-lanes.

Cole was aware that it was not possible to mount the operation from the resources then currently available to him (one squadron each of Wirraway, Hudson, Mitchell and Beaufighter aircraft, three of Spitfires, one under-strength photographic reconnaissance unit and the 380th Bombardment Group) and had identified in his letter of 8 November 'the minimum air requirement for a successful operation against the closest suitable enemy territory …'[88]. His requirements were for an extra heavy bomber group, six to seven squadrons of medium bombers, three day interceptor and one night fighter squadron for the defence of Darwin, a long range strategic

[86] HQNWA to HQRAAF Command, 2 August 1945, 373.6F, CRS A11093/1, AA.
[87] Cole to Bostock, 8 October 1943, 15/501/237, CRS A1196/6, AA.
[88] Cole to Bostock, 21 October 1943, ibid.

reconnaissance unit and mobile force of long range and night fighters to give protection to the area being assaulted.

As an attachment to his monthly tactical appreciation to Bostock dated 1 June 1944, Cole included a report by Squadron Leader S. Jamieson, the Area Intelligence Officer, that of the 19 enemy airstrips and two seaplane bases within a 500-mile radius of Darwin, only two were serviceable, reasonably active and defended with any vigour. Throughout the area, the Japanese 'policy is to keep a limited number of strips serviceable (principally for reconnaissance purposes) while defence is left to ground troops [and the Japanese appear] to anticipate an Allied movement up the south west coast of Dutch New Guinea from Merauke and towards Timor from Darwin'. The area was of questionable economic value to the Japanese and its strategic value to the enemy diminished due to the Allied advance in New Guinea. However, from the Allied perspective 'they form a salient pointing south east from his [the Japanese] defence lines; a salient poorly defended'.[89]

The proposal to undertake more aggressive operations was forwarded to General Headquarters and Bostock advised Cole on 6 June that, although it was being actively considered, 'no firm decision regarding offensive operations in the Arafura Sea' had been made. The project, if approved, would most likely be 'of a more limited scope than first envisaged and may involve the occupation of the island of Selaroe only, as a first objective'. His own feeling was that

> if approved it would be a completely airborne operation … carried out by a Task Force comprising an air borne American regiment together with the necessary covering air force and supported by bombing and strafing operations by existing forces in your area, supplemented,

[89] E*nemy Policy in Arafura Sea Bases,* 30 May 1944, 319.1P7, CRS A11093/1, AA.

> possibly, by [an] American B-25 Group.[90]

In his June report, Cole was 'disappointed that no further information is available on any intended operation out of the [NWA] area' and argued that the negligible aerial defences of the Japanese bases within 500 miles of Darwin made them ripe for combined amphibious operations. As the Japanese troops in the area were building defensive positions, he asserted the capture of at least one of these airfields would have significant long-term strategic and short-term tactical advantages to the Allies. In support of Jamison's assessment, Cole asserted that 'the capture of one at least' of the bases would:

> (a) increase the war efficiency, striking power and radius of action of this Area;
> (b) be a relatively simple operation at the present time provided the shipping is available;
> (c) [be] now tactically necessary to protect the New Guinea flank and our shipping routes in the Arafura Sea;
> (d) retain the initiative and give a good platform for further advances to the North or West;
> (e) [be] liable to become more difficult to achieve as the enemy consolidate his beach defences;
> (f) considerably raise the morale in this Area; and
> (g) [use] facilities … in the Area to operate and stage through the reinforcement air forces necessary to achieve success.[91]

However, by July Cole tacitly admitted that the offensive operation that he envisaged was not likely to progress past the planning stage. On 1 August he acknowledged that the enemy build up on Timor meant an amphibious landing 'without close air support and air cover would be too risky to undertake, as also would a solely airborne operation.' The Selaroe operation, a 'far simpler and more economical' undertaking, would still enable forces from North Western Area to

[90] Bostock to Cole, 6 June 1944, ibid.
[91] HQNWA to HQRAAF Command, 1 July 1944, ibid.

dominate the entire south eastern area of the Netherland East Indies with medium bombers and allow fighter cover to be flown over enemy Arafura and Banda Sea bases. He also alluded to the forthcoming monsoon season: 'owing to change of monsoon, however, it should be pointed out that the problem will be a very different one by the end of August'. In a tone of exasperation, Cole concluded that he had 'stressed the importance and feasibility of this operation before and I do not propose to say any more at present'.[92] Anecdotal evidence is that the RAAF plan to capture and develop forward bases in the Arafura Sea was never a serious consideration. Kenney, as we have noted earlier, was cynically ambivalent and claimed that he attempted to influence General MacArthur to 'see that [General T.A.] Blamey [the Australian Land Force Commander] took the contemplated operation in the Arafura Sea more seriously. Blamey seems to feel that the show is off.'[93] Indeed, although the airfield at Melville Island was used by RAF Spitfire squadrons to mount fighter/bomber operations against targets on Timor, the operation was never mounted.

The decision not to proceed with Allied landings in the Arafura Sea must be placed in the context of the strategic debate between the US Navy Central Pacific thrust and MacArthur's planned advance through New Guinea, the Netherland East Indies to the Philippines. Phase 2 of MacArthur's plan (Reno IV) called for an advance north-westward along the north coast of New Guinea which was to be accompanied by the establishment of air forces in the Arafura Sea to undertake strategic bombing of the NEI for support of subsequent operations aimed at occupying the Geelvink Bay-Vogelkop area. The Joint Chiefs of Staff in Washington suggested that this phase of the Reno IV plan be abandoned and on 12 March 1944 directed

[92] HQNWA to HQRAAF Command, 1 August 1944, ibid.
[93] George C. Kenney Papers, 31 March 1944, United States Air Force Office of History, Bolling AFB.

MacArthur 'to conduct operations along the New Guinea coast in preparation for the Palau landing and the assault on Mindanao …[94] Given the timing of this decision, the cynical self serving approach of Kenney toward a loyal subordinate in allowing the planning effort to continue on an operation that had no chance bearing fruit is reprehensible.

The change of command in Darwin - Air Commodore A.M. Charlesworth assumed command of North Western Area from Air Vice Marshal Cole in September 1944 - did not vary the RAAF focus on operating an independent campaign from North Western Area. In Charlesworth's opinion the forces based in North Western Area could, if allowed to pursue 'our "local" war in eastern NEI … inflict much greater damage on the enemy than we have yet done'. To substantiate this assertion, he claimed that the emphasis to support the Allied advance in New Guinea and the Halmaheras enabled enemy shipping to pass unmolested to 'reinforce and supply the [Japanese] 19th, 2nd and 16th Army Areas for another 12 months'. The subsequent price of this enemy action 'must be paid for later by our ground forces' and RAAF resources in North Western Area were ill used in striking at targets such as Ambon where its 'effort was too small to be decisive …'. Given that there were no enemy aircraft based within 500 miles of Darwin and Darwin based air power essentially restricted major enemy shipping movements within that radius, the air resources based in North Western Area could be used more effectively against targets in eastern NEI. Japanese ground forces were in a 'state of confusion' and Charlesworth assessed that

> the situation is an ideal one for the use of air power though the opportunity may be limited. With unhampered use of our present medium and heavy strength for a few weeks we could measurably

[94] Odgers, *Air War Against Japan 1943-1945,* p 168; S.R. Taaffe, *MacArthur's Jungle War: The 1944 New Guinea Campaign,* University Press of Kansas, Lawrence, 1998, pp 18-24.

> shorten the campaign in NEI, which will eventually have to be faced by some section of the Allied Forces. … [95]

Charlesworth returned to this theme in his October 1944 Tactical Appreciation. After the successful landings in the Philippines, the tenuous China Sea route was the only one available to ship raw materials from the NEI to Japan. Due to the US Navy submarine blockade of Japan and the potential for aerial interdiction from the Philippines of the supply lines, only essential materials would be transported from the NEI. Due to the naval blockade, the likelihood of shipping reaching Japan was extremely low. Charlesworth asserted that there was no advantage in targeting sources of raw material and handling facilities. In fact such an action would 'merely damage Allied assets without adding to the enemy's difficulties', and called for a reconsideration of the current targeting policy.[96] Coincidentally a report requested by Bostock on 3 November and included in his response confirmed the general thrust of the Charlesworth argument. The report stated that, as targets in the NEI were out of range, the aim of units based in North Western Area should be the destruction of maritime transport and ship building facilities in the southern Celebes.[97]

On 5 April 1945 a combined force of nine B-24 Liberators from Nos. 21 and 24 Squadron combined with 20 B-25 Mitchell medium bombers from No. 18 (NEI) Squadron and No. 2 Squadron participated in a dramatic example of the implementation of the policy of destroying enemy maritime power. The force was detailed to strike a Japanese Navy light cruiser *Isuzu* and four escorts. No. 87 Squadron Mosquito aircraft and No. 43 Squadron Catalinas had tracked this force

---

[95] AOCNWA, to AOC RAAF Command, 4 October 1944, 319.1P7, CRS A11093/1, AA.
[96] AOCNWA, to AOC RAAF Command, 1 November 1944, ibid.
[97] AOC RAAF Command to AOCNWA, 9 November 1944, ibid.

since 5 April when it embarked Japanese troops from the port at Koepang, Timor. The enemy naval force departed from Koepang on 6 April and was intercepted southeast of Sumba Island. The Mitchells, operating at the limit of their range, were forced to attack 20 minutes before the arrival of the four-engine Liberators. They obtained two hits on the *Isuzi*. The Liberators dropped sixty 500lb Semi-Armour Piercing bombs, but only near misses were reported. The Australians lost two Liberators to enemy fighters and the ship's anti-aircraft fire. Although a US Navy submarine sank the *Isuzi* during the subsequent night, the aerial strike did not meet expectations.[98] There were two obvious lessons. Firstly, although air power, given the appropriate equipment and numerical strength, was capable of dominating an area and making it extremely difficult for the enemy to operate surface forces, there was a requirement for a trained specialist maritime strike force. The majority of the maritime patrols flown in the area were single aircraft, or small formations, missions attacking lightly armed vessels at low level. Rarely did the squadrons operate in large formations. The attack on the *Isuzi* was not co-ordinated. Secondly, the lack of a long-range fighter escort gave the enemy fighters the opportunity to successfully close with, and shoot down at least one, of the attacking heavy bombers. Tactically, it would have been preferable to strike at the cruiser while it was at Koepang, giving the bombers the advantage of bombing a stationary target. However, there is one truth from this operation. Successful maritime operations are a combination of signal intelligence, aerial surveillance and a combination of aerial and surface forces complementing each other to ensure that the desired result is achieved.

---

[98] No. 24 Squadron, Narrative Report, 11 April 1945; No. 21 Squadron Narrative Report, 11 April 1945; Odgers, *Air War Against Japan 1943-1945,* pp 405-9; Bennett, *Highest Traditions,* pp 230-3; Wallace, *Up in Darwin with the Dutch,* pp 31-2.

The presence of the *Isuzi* in the area to withdraw troops from Timor was vindication of the RAAF's aggressive policy. By dominating the Japanese maritime supply routes, the RAAF made the logistic effort to maintain an effective military presence in the area untenable.

There was an offensive future planned for North Western Area units. The Liberators of No 82 Bomber Wing that had operated from Morotai during the Oboe series of operations against Tarakan, Balikpapan and Labuan in Borneo were to be based at Balikpapan. From that base the wing would blockade the Western NEI and Malayan waters. The two operational squadrons of the Darwin based No. 85 Wing were to operate as far west as the Southern Celebes and Lesser Sundas. This combination of No. 82 and No. 85 Wing units would, in Bostock's opinion, 'completely neutralise' the NEI.[99] Even though Headquarters No. 85 Wing had been raised at Amberley, Queensland, on 10 March, it did not arrive in Darwin until June 1945.[100] Of the Wing's two operational units, only No. 12 Squadron was actually in Darwin in March and the second, No. 99 was not fully deployed until the end of September, a month after the armistice was signed. But the fact remains that, as at August 1945, North Western Area was a backwater. There was only one RAAF heavy bomber squadron (No. 12), three Spitfire fighter units of the RAF, two Catalina flying boat squadrons and No. 87 (Photographic Reconnaissance) Squadron in the area when the armistice was signed on 15 August 1945.

Reconnaissance

A severe constraint on the operation on the heavy bomber force was the lack of comprehensive aerial reconnaissance. The RAAF deployed No. 1 Photographic

[99] AOC RAAF Command to AOCNWA, 28 May 1945, ibid.
[100] No. 85 Wing, ORB, March & June 1945. RHR.

Reconnaissance Unit (PRU) equipped with Buffalo aircraft - the same type that had been severely mauled during the Malayan campaign - to North Western Area in August 1942. One of the aircraft was destroyed during an enemy air raid on Hughes airfield on 23 August, decreasing the strength of the unit to three.[101] The Buffalo aircraft lacked the performance and range to meet the reconnaissance requirements of North Western Area. However, the arrival of a single Lightning F-4 (the photographic reconnaissance version of the P-38E fighter) at the unit on 30 October 1942 promised rectification of weakness in long-range reconnaissance capability in the area.[102]

Promise was not matched by performance. No. 1 PRU operated three Lightning aircraft between November 1942 and August 1944. One was lost in a landing accident in August 1944, and the aircraft were plagued with problems related to the engine intercooling system and turbochargers. Severe maintenance problems naturally affected the ability of the aircraft from undertaking its main task. The following table gives an indication of operational viability of the type while in service of No. 1 PRU:

Month/Year	No. of Operational Sorties
November 1942	0
December 1942	0
January 1943	3
February 1943	0
March 1943	3
April 1943	7
May 1943	9
June 1943	8
July 1943	5
August 1943	3
September 1943	1
October 1943	0
November 1943	7
December 1943	2

[101] No. 1 PRU, ORB, August 1942, RHR
[102] ibid, 30 October 1942.

January 1944	1
February 1944	1
March 1944	8
April 1944	6
May 1944	8
June 1944	3
July 1944	1
August 1944	0[103]

Between January 1943 and July 1944 the Lightnings flew 75 operational sorties, but the difficulty in maintaining the serviceability of the type negated the work done.

Air Vice Marshal Cole called for a better solution to the problem. On 2 March 1944 he laid down his requirement for a photographic reconnaissance aircraft with a radius of action of at least 1000 nautical miles, the ability to loiter for 20 minutes over the target and high speed at high altitude. In his opinion 'even one Mosquito, modified for this work, would increase the potential of the forces available to me immeasurably'.[104] Bostock claimed that he had made urgent representations to obtain the first six production Mosquito aircraft to be allocated to No.1 PRU, but 'had serious doubts as to whether RAAF Headquarters will be prepared to meet the requirements since similar representations some months ago were refused on the grounds that it would interfere with production'.[105] To a degree, Bostock himself must take some blame for the uncertainty regarding the role of the Mosquito in the RAAF. In 1942 he had recommended that the aircraft be used as a long range fighter, with a secondary role as a low level attack bomber before the three versions - FB.40 (attack), PR.40 (photographic reconnaissance) and (T.43) trainer - were decided upon to meet Air Force requirements.[106] It must be conceded that the many problems that delayed

[103] ibid, November 1942-August 1944, RHR.
[104] Cole to Bostock, 2 March 1944, 319.1P7, CRS A11093/1, AA.
[105] Bostock to Cole, 19 March 1944, ibid.
[106] Wilson, *Beaufort, Beaufighter and Mosquito in Australian Service,* pp 167-8.

the introduction of the type in to service were beyond his control.[107] Although No.1 PRU received its first Mosquito in May, Bostock was still, in August, concerned about:

> The parlous condition of your [NWA] PRU unit … For more than a year I have been doing everything possible from this Headquarters to improve the situation. I am still at a loss to understand, with the number of Mosquitos there are available in the country and the urgent demand, which we have repeatedly made on RAAF Headquarters for PRU Mosquitos to be given first priority, why at least two more Mosquito aircraft have not been modified and allotted at this date … [108]

At the end of December No. 87 PR Squadron (No. 1 PRU was renamed on 30 September 1944) had five Mosquitos on strength. Unfortunately the unit reported a 'hardly satisfactory' serviceability rate of 43 per cent during the month.[109] The pressure exerted on Mosquito aircraft to undertake tasks from North Western Area had not been eased by the deployment of one each of the new aircraft to Biak and Noemfoor in July and August. The Mosquitos had been on loan to the US 5th Air Force to undertake reconnaissance flights over the Halmahera Islands and the Philippines. Although the operations were successful, Cole complained that the aircraft 'came back unserviceable having all leading edges literally sandblasted through by hail. The loan of the second [aircraft] from this area to the same force again left North Western Area with nil strength …'[110] Despite this the Mosquitos flew 82 operational sorties in the June-December 1944 period over areas as widely dispersed as Soerabaya, the Central Philippines, Balikpapan, Celebes and Timor.[111]

Prior to the arrival of the Mosquito aircraft the deficiency in photographic reconnaissance assets had to be overcome by utilising the long range B-24s. On 30

---

[107] For detail see ibid and D. Vincent. *Mosquito Monograph*, self-published, Highbury, 1982.
[108] Bostock to Cole, 9 August 1944, 319.1P7, CRS A11093/1, AA.
[109] No. 87 (PR) Squadron, ORB, December 1944, RHR.
[110] Cole to Bostock, 31 August 1944, 319.917, CRS A11093/1, AA.
[111] No. 87 (PR) Squadron, June-December 1944, RHR.

November 1943 Cole advised Bostock that to meet his photographic commitments that arrangements had been made direct with the USAAF for the fitting of a trimentron camera installation in each of six B-24 aircraft of the 380th Bombardment Group.[112] This expedient also placed pressure on the photographers of the Group and RAAF photographers were loaned to the Americans. Records are imprecise, but it is estimated that at least 16 photographers from No. 1 PRU undertook combat sorties with the 380th. The solution was not ideal and tended to dilute the strength of the long range striking force and to exacerbate the problem of aircraft availability. Cole was critical of the tactics that had been forced on his long-range bombers to undertake the reconnaissance role. The then current technique of flying a six aircraft formation (including one photographic aircraft) that had been 'forced upon us is extremely extravagant and … is unproductive, wasteful flying. Also it depletes the strength of any striking force, which may be mounted in the next 48 hours'.[113]

Another reconnaissance mission flown by NWA based units was related to the identification of Japanese radar and the subsequent negation of any influence they would have on operations. The records related to early electronic countermeasures are sparse, but anecdotal evidence is that it had its origin at Port Moresby in 1942. A team, led by Royal Navy lieutenant, included two RAAF wireless operator/air gunners, and a New Zealand Navy Leading Seaman, operated receivers during bombing missions flown by the USAAF 43rd and 90th Bombardment Groups. At the end of 1942 Lieutenant L.H. Mace RAN approached the US 7th Fleet with the suggestion that electronic countermeasures should be controlled by that Headquarters. This was agreed too, and Mace was located in room 22 at naval headquarters,

[112] AOCNWA, to AOC RAAF Command, 30 November 1943, 319.1P7, CRS A11093/1, AA.
[113] AOCNWA to AOC RAAF Command, 2 March 1944; 1 August 1944, 319.1P7, CRS A11093/1, AA.

Brisbane (hence the naming 'Section 22'). From anecdotal evidence the activities of Section 22 date from late 1942 or early 1943. The organisation was taken over by General Headquarters and the organisation formalised under the control of a US Army Signals Corps colonel as its director.[114]

Graduates of No.4 Wireless Air Gunners course continued training in radar techniques at No. 1 Radar Installation and Maintenance Unit before being posted for service with the USAAF 90th Bombardment Group at Port Moresby and Fenton in the Northern Territory. Other Australians joined the American Group, combining to installed the ECM equipment in the 380th Bombardment Group B-24 aircraft *Jaurez Whistle* in time for the aircraft to join one other in a photographic reconnaissance of the naval base at Soerabaya.[115] In addition, this flight obtained, 'the first bit of RCM intelligence in the SWPA'. [One assumes that the writer is referring to the NWA]. At least 28 (of whom five were killed in action) Australians and New Zealanders participated to some degree in ECM operations with the 380th Bombardment Group. [116]

By February 1945 the RAAF had conceived plans and procedures to find and evade enemy radar. Intelligence was gained by 'Ferret' aircraft and passed to the Intelligence Officer through Section 22. This information was then combined into monthly reports of radar activity in the area and upgraded by weekly conferences to co-ordinate photographic and electronic intelligence.[117] There is no doubt that the RAAF took the gathering of electronic intelligence seriously, raising a specialist

---

[114] E. Simmonds & S. Smith, *Echoes Over the Pacific*, self published, Banora Point, 1995, pp 247-8.
[115] B. Livingstone, *Under the Southern Cross: The B-24 Liberator in the South Pacific,* Turner Publishing Company, Paducah, 1998, p 61; M. Nelmes, *Tocumwal to Tarakan: Australian and the Consolidated B-24 Liberator,* Banner Books, Belconnen, 1994, p 57.
[116] D. Dakeyne, *A Brief History of Section 22 Radar Countermeasures Organization of Allied Air Command SWPA 1942-1945,* unpublished manuscript, nd.
[117] HQRAAF Command, to HQNWA, 27 February 1945, 675.4A9, CRS A11093/1, AA.

'Ferret' flight during March 1945.[118] No.201 Flight did not see active wartime service but the Air Force did gain experience in the field due to the involvement of crews and aircraft from No. 12 and No. 24 Squadron, who flew 14 mission from Darwin in the period March-June 1945. [119] These flights were undertaken under the auspices of Section 22, Field Unit No. 15, that commenced activity at Darwin in March 1945.[120]

Visual Reconnaissance was essential to obtain targeting and post-strike information. The RAAF capacity to fulfil this essential role was initially hampered by the lack of suitable equipment and, with the advent of the Lightning in 1943, maintenance problems. The Mosquito was an excellent photo-reconnaissance aircraft, and its value in the role was appreciated when NWA home based aircraft and crews flew reconnaissance flights over the Philippines in late 1944. However, this diversion of the small capability available to NWA delayed the introduction of a full photographic intelligence capability in the area. The lack of a dedicated reconnaissance capability, in turn, contributed to the inability of heavy bombers based in Northern Australia to undertake an aggressive, well-planned, strategic bombing campaign against targets in the NEI.

Electronic Intelligence gathered had important tactical implications during RAAF aerial minelaying operations. Many specialist operators served with USAAF units in the Philippines campaign, but hostilities ceased before the RAAF could deploy its own specialist flight to participate in this new form of scientific intelligence gathering.

Aerial Mining.

---

[118] No. 201 Special Duties Flight, ORB, March 1945, AA.
[119] Section 22, Field Unit No.15, to Section 22 Rear Echelon, 31 May 1945,4 June 1945, 3 July 1945, 676.4A16, CRS A11093/1, AA.
[120] ibid.

The laying of minefields off enemy ports is an economical method of placing pressure on a seaborne transportation system and of sinking vessels of all types. Germany had been blockaded during World War One and similar action was instituted at the outbreak of the Second World War. One element in this campaign was the laying of aerial mines in German harbours. The RAF flew its first minelaying sorties on the night of 13/14 April 1940 when 14 Hampden bombers laid mines in the sea-lanes off the coast of Denmark.[121] 14 Lancaster bombers flew the final operation on the night of 25/26 April 1945, when the crews dropped mines in Oslo Fjord.[122] The aerial mining campaign in Europe has not been studied at any depth, but the fragmentary data reproduced by the military historian John Terraine suggest the economy of this type of anti-shipping operations. Between April 1940 and March 1943 RAF Coastal Command sank 107 ships (155,076 tones) of shipping by the use of torpedoes and low level bombing techniques. Aerial minefields laid by Bomber Command aircraft accounted for the sinking of 369 vessels (361,821 tons) during the same period. The loss rate in the former case was 648 aircraft (six aircraft for every ship sunk), which compares unfavourably with the loss of 329 aircraft (less than one aircraft per ship) for the latter.[123] For maritime nations like Great Britain and Japan, the mining of ports was a serious impediment to the importation of raw materials and essential foodstuffs. The German Luftwaffe General, Helmuth Felmy, had 'sensibly pointed out in 1938 how an aerial mining campaign could be used to shut British harbours' and James Corum, a United States Air Force historian, asserts that the lack of a German aerial mining policy aimed at closing British ports was an important contributing factor that

[121] M. Middlebrook & C. Everitt, *The Bomber Command War Diaries: An operational reference book 1939-1945,* Midland Publishing, Leicester, 1996, p 33.
[122] ibid, p 701.
[123] J. Terraine, *The Right of the Line*, Wordsworth, Chatham, 1997, p 422.

enabled Great Britain to survive the rigours of 1940.[124] So there were precedents for a similar campaign in the Pacific.

One of the reasons for the Japanese government initiating aggressive action in 1941 was the economic requirement for raw materials, such as tin, rubber, oil and minerals, from Malaya, Philippines, Indo China and the Netherlands East Indies to feed Japanese industry. To transport the economic booty to the home islands, the Japanese merchant cargo capacity at the outset of the Second World War was 6.2 million tons. To over-simplify the issue, the combined submarine and aerial mining campaign undertaken by the Allies dispossessed the Japanese economy of some 4.2 million tons of shipping, thus 'depriving Japan of the raw materials it had gone to war to gain'.[125] RAAF long-range Catalina flying boats that staged through NWA had an important role to play in the strategic and tactical laying of aerial minefields during this campaign.

In the SWPA the Allied Naval Commander retained overall responsibility for the mining campaign. He issued broad directives to the Commander, Allied Air Forces, on targets to be attacked. In general, the selection of targets, and priority given to, a specific RAAF target was devolved to the AOC RAAF Command. Based on photographic, physical and electronic intelligence, a monthly plan of operations was promulgated. Mine Warfare Officers prepared detailed charts of the fields to be laid. These charts took into account natural factors such as the depth of water and the nature of the seabed, as well as the nature and volume of mercantile traffic and the presence of enemy minesweepers and their capability. Mine Warfare Officers who

---

[124] J.S. Corum, *The Luftwaffe: Creating the Operational Air War, 1918-1940,* University Press of Kansas, Lawrence, 1997, p 282.
[125] G.W. Baer, *One Hundred Years of Sea Power,* p 235.

planned the operation were available for discussion at the appropriate Area Headquarters, Wing and Squadron level to enable operational experience to be reflected in the final chart of the minefield.[126]

The first aerial minelaying operation undertaken by the RAAF was on the night of 22 April 1943 when eight Catalina flying boats from No. 11 and No. 20 squadron laid 16 American magnetic mines at Kavieng, New Ireland. A strategic campaign was commenced against ports in the Netherlands East Indies during July, when the RAAF Catalinas ranged over 52 targets as far flung as Hong Kong, Sumatra, Soerabaya and Formosa (Taiwan) as noted below:

Target	Total Mines Laid
Kavieng New Britain	104
Lorengau, Admiralty Islands	35
Babo, Dutch New Guinea	17
Geser, Ceram	10
Boela, Ceram	12
Macassar, Celebes	142
Sorong, Dutch New Guinea	29
Soerabaya, Java	399
Kokas, Dutch New Guinea	8
Kendari, Celebes	44
Pomelaa, Celebes	51
Kolaka, Celebes	12
Manokwari, Dutch New Guinea	17
Kaimana, Dutch New Guinea	19
Baie Baie, Celebes	4
Waingapoe, Soemba	4
Kau Bay, Halmaheras	62
Balikpapan, Borneo	118
Woleai Atoll, Carolines	36
Tioro Strait, Celebes	76
Vesuvious Bay, Soela	8
Palau, Carolines	23
Buton Strait, Celebes	42
Bima, Soembawa	8
Banka Strait, Celebes	28
Lembeh Strait, Celebes	4

[126] *Report of minelaying operations by the Royal Australian Air Force between 22nd April 1943 and 31st July 1945,* 1 September 1945, p 22, 60/501/155, CRS A1196/6, AA.

Tana Keke Strait, Celebes		43
Wowoni Strait, Celebes		24
Pasaruan, Java		8
Probolinggo, Java		8
Panarukan, Java		10
Liakang Bay, Celebes		8
Malasoro Bay, Celebes		15
Laut Strait, Borneo		209
Pare Pare, Celebes		14
Brunei Bay, Borneo		20
Tarakan, Borneo		30
Sandakan, Borneo		12
Samarinda, Borneo		12
Cape Seatan, Borneo		28
Cape Bulu Bulu, Celebes		12
Balabac Strait, Borneo	60	
Manila Bay, Luzon, Philippines		54
Takao, Formosa		18
Mako, Pescadores		10
Hong Kong, China		152
Amoy, China		114
Swatow, China		31
Hainan Strait, China		131
Yulinkan Bay, Hainan		52
Wenchow, China		8
Bangka Strait, Sumatra		117[127]

In total, 1130 successful sorties were flown to sow 2512 mines at a cost of nine aircraft during the operations. One aeroplane was lost in every 126 sorties - a favourable loss rate of 0.8 per cent.[128] Overall it was estimated that 23 enemy vessels were sunk and 27 damaged due to mines layed by RAAF Catalinas.[129] Mines sank a total of 266 Japanese ships during World War II, and the RAAF claim is 8.5 per cent of the total.[130] This outcome must be seen in the overall perspective. The majority of sinkings associated with aerial minelaying were credited to the B-29 aircraft of the US 20th Air Force in the last months of the war. The RAAF dedicated a

[127] ibid, p 5.
[128] ibid, p 13.
[129] Headquarters RAAF to Admiralty, 21 June 1946, 60/501/155, CRS A1196/6, AA.
[130] Odgers, *Air War Against Japan*, p 373.

comparatively small force to aerial mining and operated in areas where there was a lower density of maritime traffic compared to that being operated adjacent to the home islands. In some cases, operations were planned to have a tactical, not economic, impact (such as the mining of Subic and Manila Bay on the night of 14/15 December 1944). Overall, RAAF sea mining operations were an effective and economic use of the Catalina squadrons.

On 11 August 1944 RAAF Command issued Operational Instruction No.99/1944 that stated unequivocally that 'the primary employment of all flying boat squadrons within North Western Area is to be that of sea mining from the air'.[131] This instruction reflected the obsolescence of the Catalina flying boat and the long term affect of aerial mine laying on the enemy. The flying boat lacked the performance required for continued use in the long-range strike/reconnaissance role and was being superseded by the higher performance Liberator bomber. However the Catalina's long range and endurance made it an ideal aircraft for long-range mine laying operations. In October 1944 the Navy Operational Research Section advised Headquarters RAAF Command of the strategic importance of its sea mining operations. By closing the Tioro, Buton and Wowani straits, shipping would be forced into deep waters and thus be more vulnerable to attack by United States Navy submarines. During the previous year 'Sourabaya, Kaimana, Kau Bay, Balikpapan and Macassar [were] closed for navigation as a result of seven minelaying sorties'. The plan was to follow up this success by undertaking 100 sorties per month for a period of four months, and the ports previously mentioned would be closed for 600 days. The Operational Research Section assessed that operations at this level would reduce enemy tonnage on the

[131] ARM/N (ORS 12/2/7), to Operational Research Section, Headquarters, RAAF Command, 7 October 1944, 60/501/155, CRS A1196/6, AA.

southern trade routes by 12 per cent, effect the enemy war potential in the area and the Japanese forces ability to provision his 'forces in the field and also in the supplying of raw materials to his war factories'.[132]

However, the effect of mining was more complex than just the actual damage inflicted, as Rear Admiral Akira Matsukazi stated during interrogation after the War. Matsukazi held the appointment as Chief of Staff, Second Southern Expeditionary Force, at Sourabaya from April 1943 until February 1945. When questioned on the effect of Allied aerial-laid minefields in Java, Celebes and Borneo, he responded:

> The Second Southern Expeditionary Force at Soerabaya was responsible for all mine countermeasures in the Borneo, Celebes and Java area. In these areas minesweeping was a continuous process. During the first part of 1943 the magnetic mine was difficult to sweep but the problem was solved when magnetic bars were procured from Singapore in September and October.
>
> By the end of 1943 mines became a serious consequence, a radar warning net was established as well as a system of watchers. By tracking planes with radar an effort was made to establish the dropping point. Night fighters were employed but proved quite ineffective. Beginning in 1944, mining had a considerable effect on the exploitation of the vast resources of the Netherlands East Indies. Not only were ships and cargoes destroyed but convoys were delayed and unloading areas jammed at Sourabaya and Balikpapan pending sweeping operations. The destruction of tankers and the delay in oil shipments were particularly serious.
>
> Due to the use of small wooden ships mining had little effect on the supply of garrisons.
>
> Mining countermeasures involved the use of 1,500 men and 30 vessels in the area. Nevertheless about 40per cent of all vessels over 1000 tons, which sailed into Balikpapan and Soerabaya were sunk or damaged by mines. In many cases ships were salvaged only to be sunk a second time.
>
> Even before the capture of the Philippines the traffic to the Netherlands East Indies was reduced to a trickle. After February 1945 no attempt was made to sail large ships and only smaller vessels, schooners and wooden barges were employed.

[132] ibid.

The rear admiral estimated that 50 per cent of the total shipping tonnage sunk in the Netherlands East Indies could be attributed to submarine activity, 49 per cent to mines and the remainder to aerial attack.[133]

Minelaying missions were demanding. A typical No. 20 Squadron mission (in this case to Sourabaya) in 1945 commenced with the aircraft leaving its home base at East Arm, Darwin. After a three-hour flight the Catalina landed at West Bay in Western Australia. The aircraft was refuelled and the crew was given a meal before take-off for the round trip to Sourabaya of 15 hours.[134] These long-range operations required precision navigation. The intimate knowledge of defensive radar sites produced by ECM intelligence was an important factor in enabling an undetected approach to be made.

The mines had to be accurately placed in pre-determined positions advised when the crews were briefed for the mission.[135] Sometimes the actual drop would not go so smoothly, as one crew found over Balikpapan. Only one mine had released on the first pass and, as the Catalina approached the datum point for the second time, it became obvious that they were flying at an altitude of 150 feet above some very angry warships. The aircraft, completely surrounded by anti-aircraft fire, remained on a steady course and the crew 'miraculously survived an impossible situation'.[136]

Obviously the results of the electronic intelligence gathering activities previously described were important considerations when planning strategic mining operations. The aggressive use of active ECM techniques was applied during the tactical mining of Manila Bay during the night of 14/15 December 1944. The laying of

---

[133] ibid.
[134] R. Macpherson, correspondence, 10 April 2000.
[135] ibid.
[136] I. Righetti, 'Flames in Balikpapan Harbour', A.E. Minty, *Black Cats: The Real Story of Australia's Long Range Catalina Strike Force in the Pacific War,* RAAF Museum, Point Cook, nd, p 179.

the minefield was planned to help protect the American landing on Mindoro Island by 'bottling up' enemy shipping in the harbour by creating a minefield of 60 mines during a single night drop.[137] Twenty-five Australian crews and aircraft from the four Catalina squadrons participated.

A detailed account of this operation is given as an example of the planning and operational expertise required to ensure successful minelaying operations. The Australian force operated from Leyte and was divided into two groups, one each approaching Manila Bay from the west and southeast. To support the operation Section 22 conceived a diversion plan to counter and confuse enemy radar in the area. One aircraft, not being required to carry mines, was used as RCM support, dropping 'window' (short strips of aluminium foil cut to a length that would give false radar returns) from a position near Lubang Island. A US Navy Catalina flew over Subic Bay and Manila Bays five minutes before the approaching attack force, dropping window and jamming enemy radar transmissions. The attacking force reported that anti-aircraft guns were 'firing blindly and nowhere near the formations'.[138]

Although two aircraft could not release their mines due to mechanical failure, the remaining aircraft successfully dropped their weapons. Light inaccurate anti-aircraft fire was sighted. An explosion was reported over the target that 'may have [had] some relation to a 43 Squadron aircraft which failed to return'.[139]

The operational detail above indicates the importance assumed by the RAAF for its mining efforts and the faith shown by the United States Navy in the ability of the RAAF Catalina squadrons to undertake the task. It was not only at the tactical

---

[137] G. Odgers, *Air War Against Japan 1943-45*, p 375.
[138] No. 42 Squadron, Detail of Operations, 1/12/44 to 31/12/44; General Headquarters South West Pacific Area, Office of the Chief Signal Officer, Section 22, *Report on Radar Countermeasures Support for the RAAF Mine-laying Operations on 14/15 December 1944*, 19 December 1944, 676.4A5, CRS A11093/1, AA.

level that Bostock envisaged RAAF minelaying operations. He had a more grandiose plan. On 24 July 1945 he sought the consideration of the Commanding General Allied Air Forces SWPA, Kenney, to undertake Operation *Amazon.* His target was the Kammon tunnels, 'two single track railway tubes running from Dairi. Kyushi and Hiko Shima'. Bostock identified the two tubes as a major link 'between the raw material and heavy industry of Kyushu and the finished product manufacturing centre of Honshu'. He intended to use eight Okinawa based RAAF Catalina flying boats, fly them across the Shimonoseki Strait at an altitude of 200 feet so that each crew would accurately lay two 2000 lb mines on the tunnels. It was intended to lay 16 mines, fused with a three hour delay and arranged in such a manner that they would explode simultaneously. Each mine contained 1,250 lb of Torpex explosive, and Bostock argued that 'accurate dropping [would] ensure that at least 2 or 3 mines [would be located] immediately over the tunnels. … It [was] proposed to concentrate the mines over the weakest part of the tunnel ie where they lie 22 feet below the seabed'. To facilitate the Catalina operation Bostock argued that 'adequate diversionary tactics and RCM facilities' if made available, combined with attacks flown by B-29 or B-24 aircraft would ensure the comparative safety of the Catalina crews. Bostock requested Kenney's approval and his subsequent submission to the Commander in Chief, United States Pacific Fleet, 'with a request for expert opinion on the likelihood of success, and for permission for RAAF Catalinas to carry out the operation'.[140] Operation *Amazon* was a bold concept that indicated Bostock's faith in his crews and the weapons with which they were equipped. It would have been a major operation,

---

[139] No. 11 Squadron, Detail of Operations, 1/12/44 to 31/12/44, RHR.
[140] AVM Bostock to CGAAFSWPA, 24 July 1945, 373.212N, CRS A11093/1, AA.

which, in the context of the current political situation and from a USAAF perception, the RAAF's lack of prestige and status, was unlikely to come to fruition.

Of all the operations by NWA based squadrons, those of the 'Black Cats' of the four minelaying squadrons were the most important and significant. The operations were both tactical and strategic in nature, contributing to both the immediate tactical situation in the South-West Pacific and the long-term economic naval and air blockade of the Japanese home islands. The RAAF, in conjunction with the RAF, US Navy and US Army Air Forces, undertook mining operations in the 'outer zone targets, distant from Japan, which were the source of its raw materials'.[141] Although the value of aerial mining was recognised by United States Army Air Forces planners it was also seen as being subservient to, and a divergence from, strategic bombing doctrine. However, on 27 March 1945 the US 20th Air Force accepted that a mining campaign would, by complementing strategic bombing, be an effective technique to bring further economic pressure on Japan, and commenced operation *Starvation*. The Shimonoseki Strait was a major target. Bostock's operation *Amazon* can be seen as an attempt by the RAAF to become involved in and 'increasingly effective' campaign.[142] The situation is best summarised by a report made by the Operational Research Section to Captain J. Cowie RN, the Deputy Director Operations Division (Minelaying Section) at the British Admiralty, which stated that:

> …the difficulty all along has been that the RAAF have had too few aircraft available and the Americans have been uninterested. Unfortunately this has resulted in opportunities being lost. The RAAF Catalina squadrons have done an excellent job of work …[143]

---

[141] K.P. Werrell, *Blankets of Fire: US Bomber over Japan during World War II,* Smithsonian Institution Press, Washington DC, 1996, p 172.
[142] ibid, p 176.
[143] Operational Research Section to Captain J. Cowie RN. DDOD (M) Admiralty, 15 November 1944, 60/501/155,CRS A1196/6, AA.

The basic tenet of this assessment is germane to all RAAF operations based in NWA.

****

The two papers presented to McCauley in 1935, *Coastal Reconnaissance* and *The Tactical Employment of Air Forces in the Local Defence of Australia Naval Cooperation*, provided the theoretical basis for RAAF protective operations against submarine and surface vessels employed as commerce raiders operating off the Australian coastline. Flight Lieutenant Knox-Knight had advocated the development of a RAAF controlled maritime strike force. The difficulties of procuring suitable equipment, the development of inter-Service procedures, and the operational effectiveness of the forces have been discussed in depth. However, it is now necessary to place the three separate studies (anti-submarine and torpedo bomber operations, and the air campaign mounted from NWA) into the context of operations in the South West Pacific Area.

In the cases studied the RAAF was the junior partner. Anti-submarine operations were the responsibility of the RAN. As a consequence of the assignment of Australian combat forces to the Commander, South-West Pacific Area, on 17 April 1942, the First Naval Member, Sir Guy Royle, subsequently assumed command of the South-West Pacific Sea Frontiers and the anti-submarine responsibility. Although the combined air and naval operations rooms established in geographical areas enabled a modicum of coordination, the RAAF had a sound case in arguing that strategic intelligence on submarine movements was not supplied in time for it to be of tactical value and this illustrates the difference in operational approach between the RAAF and RAN. The former advocated the RAF Coastal Command policy of interdicting German U-boat routes to-and-from bases and aggressive patrolling in the vicinity of convoys to ensure that submarines could not operate on the surface. By forcing the U-

boat to submerge, the submarine lost the advantage of employing its relatively high surfaced speed to gain a favourable position and became susceptible to combined air-naval attacks. The Navy position was that aircraft would be in close proximity to a convoy and thus be available for tasking by the convoy escort commander. However, the lack of compatible communications systems and procedures at the tactical level severely restricted the ability of RAAF and Naval escorts to combine as an effective anti-submarine force. The introduction of RAAF positions in the Anti-Submarine Warfare Division of Navy Headquarters was an innovation to redress this weakness, and it is unfortunate that the appointment of an RAAF officer should have become the focus of one of the many diatribes between Air Vice Marshals Jones and Bostock.

Informal efforts were made to educate RAAF and RAN officers in the mutual intricacies of their respective operations. Substantive data is not available to comment on the effect on individual RAAF and RAN officers of their ship-borne or air-borne operational experience. However, the innovation did have a long-term repercussion. During 1952 the Australian Joint Anti-Submarine School was established to enable anti-submarine experts from both services to study mutual operational issues.[144]

The reason for the failure of the RAAF torpedo bomber strike force in the South-West Pacific is a combination of factors. Torpedo bomber operations in the South-West Pacific area were under the command of the RAAF No. 9 Operational Group which was assigned to the US 5th Air Force. The latter organisation had operational control of all No. 9 Operational Group units and the influence of the USAAF commanders on the AOC No. 9 Operational Group, and the lack of faith by both US and Australian commanders in the torpedo weapon system, has been noted.

[144] *Units of the Royal Australian Air Force,* Volume 8, p 165.

the lack of a clear operational role was a major impediment to torpedo operations. The initial deployment had been made to meet a specific tactical situation - to counter the Japanese naval incursions into Milne Bay during September 1942. No subsequent role was formalised, and additional operations were of an *ad hoc* nature and limited in results. The priority given to reconnaissance and ground support operations was detrimental to the aircrews. Torpedo-bomber operations required experienced crews, current in all aspects of their craft, and torpedo strike operations required constant training for crews to retain operational currency, techniques and tactics. The unreliability of the US Mk XIII torpedo was an important factor and the advent of more economical weapons (such as the rocket projectile) and tactics (low level mast-head attacks), combined with the obsolescence of the Beaufort aircraft, resulted in the demise of the torpedo as an anti-shipping weapon in the RAAF.

Both anti-submarine and torpedo bomber operations were of low priority within the RAAF hierarchy.

From being one of the most active RAAF operational theatres in 1942 and 1943, the NWA became a backwater as the Allies advanced along the north coast of New Guinea toward the Philippines. In common with all RAAF formations, the operations mounted from NWA were either strategically defensive or in support of the main thrust to the north. Nevertheless the planning undertaken by Cole and Charlesworth show a firm grasp of the realities of the situation in the Netherlands East Indies. Both recognised that the area was of considerable value as a source of oil and other raw materials to the Japanese war effort and that it would require a lengthy, bloody, campaign to eject the Japanese forces. That strategic bombing operations were not undertaken from northern Australia is due to the overall dominance of the United States in strategic matters.

The potential of RAAF maritime operations from NWA aimed at targets in the Netherlands East Indies is difficult to assess. Mine-laying Catalina aircraft had considerable success in hampering Japanese commerce in the islands. The development of bases as advocated by Cole would have enabled Australian long-range bombers to dominate the waters of the eastern area of the NEI. To substantiate this assertion, the RAAF medium bombers, twin-engine fighters and heavy bombers based in the NWA ensured that the supply of Japanese garrisons within their radius of action was fraught with danger. The sinking of the *Isuzi* is an example of risks that the Japanese forces had to face to maintain, or withdraw, forces from the area. The cruiser was tracked by Mosquito aircraft, attacked and damaged by NWA based medium and heavy bombers before finally being disposed of by a US Navy submarine.

The air campaign in NWA was a success, but its full potential was not realised due to the inability of the RAAF to retain sufficient resources in the area and the subservient role that a small nation plays in coalition with a major power. A defensive battle had been won by November 1943, ensuring the security of the bases that had been constructed in NWA. Although fought with limited resources, operations from the area dominated the maritime approaches to Timor, Eastern NEI and the Arafura and Banda Seas and negated the Japanese military capacity in the area. In so doing, they prevented possible reinforcements being deployed from the Japanese NEI garrisons to threaten the Allied line of march to the Philippines.

The forces sought to expand the Allied influence westward were well balanced for the proposed campaign, but before it could be concentrated the heavy bomber force and fighters were deployed to participate in the *Oboe* series of operations in Borneo that recaptured Tarakan, Balikpapan and Labuan. Once these campaigns had been competed, the RAAF would have, conceivably, been operating in conjunction

with South East Asian Command forces to liberate Malay, Singapore and the NEI, and the value of NWA bases would have taken on more significance as a base for shuttle raids and to isolate Japanese troops in the eastern NEI.

8

AN AIRCRAFT CARRIER FOR THE RAN

In September 1939 the RAAF had Seagull V aircraft deployed aboard the RAN ships *Australia, Perth, Hobart* and HMAS *Canberra.* No. 9 Squadron was on active service with the fleet until the trip made by Commander W.H. Harrington from HMAS *Australia* at Port Stephens to Rose Bay on 13 February 1944 marked the last recorded wartime flight from an RAN cruiser.[1] By this time aircraft had also been deployed aboard *Manoora, Westralia* and *Warrego.* The Australian aircraft served off the coast of West Africa, the Arabian Gulf, Singapore, Netherlands East Indies and in the South Pacific. Sixteen RAAF members of the crews had lost their lives when *Canberra, Perth* and *Sydney* were sunk by enemy action and another two were killed in operations and a landing accident involving the aircraft deployed aboard *Australia.* Five aircraft were lost in combat and four lost to accidental causes.[2]

On 29 September 1940 the crew of Walrus L2247 were spotting for HMAS *Australia* at Dakar, West Africa. After bombarding the enemy the cruiser was ordered to withdraw. As she did so, the watch on the bridge noted that two Vichy Curtis Hawk fighters shot down *Australia*'s Walrus and its crew.[3] The second aircraft loss was on 21 June when fighters of the Royal Air Force, who had identified the unfamiliar biplane as an Italian aircraft, attacked HMAS *Sydney's* Seagull V off Bardia.[4] HMAS *Perth* also lost a Walrus to enemy aircraft when it was based on Crete and shot down on 28 April 1941.[5]

---

[1] No. 9 Squadron, HMAS *Australia* Detachment, ORB, 13 February 1944, RHR.
[2] Gillett, *Wings Across the Sea,* p 51.
[3] Gill, *Royal Australian Navy 1939-1942*, p 219; Gillett, *Wings Across the Sea*, p 42.
[4] Gillett, *Wings Across the Sea,* p 44.
[5] Gill, *Royal Australian Navy 1939-1942,* p 329, Gillett, *Wings Across the Sea,* p 44.

The Seagull V/Walrus aircraft had been utilised in the traditional reconnaissance, spotting, anti-submarine and communications role. By mid 1943 it became evident that the use of cruiser borne aircraft in these functions was of depreciating efficacy. The vulnerability of the Seagull V/Walrus to enemy fighters is evident from the loss of HMAS *Australia*'s aircraft off Dakar that of HMAS *Perth*'s over Crete and HMAS *Sydney*'s at Bardia. The carriage of aircraft on cruisers had become a liability. Inflammable consumables stored adjacent to the ship's catapult were vulnerable to enemy air attack and naval gunfire. The former became even more apparent when HMAS *Australia* became the first Allied ship to be hit in the Philippines by a Japanese *kamikaze* suicide bomber on 21 November 1944. Although the subsequent intense fire on the bridge was quelled, the potential danger to the ship of aircraft fuel stowed between the funnels, and the extreme damage control problem thus created, is evident.[6] The removal of the catapult and other aircraft facilities enabled more anti-aircraft armament to be mounted without increasing the top weight of a cruiser as was observed by a young (later Admiral Sir) Victor Smith when he joined HMAS *Shropshire* as the observer for her aircraft. The catapult had been replaced by 'a couple of oerlikon mountings'. As his duty on the cruiser was redundant he subsequently saw service aboard the aircraft carrier HMS *Tracker.*[7]

The operation of Seagull V/Walrus aircraft on cruisers also placed restrictions on the operation of the vessels. Once catapulted, the cruiser had to either reduce speed or stop to recover the aircraft. The 'slick' method of recovery, designed to enable aircraft to be recovered in rough seas, entailed the ship steering on a course 30 degrees

---

[6] Gill, *Royal Australian Navy 1942-1945,* p .512.
[7] Admiral Sir Victor Smith, *A Few Memories of Sir Victor Smith,* Australian Naval Institute, Campbell, 1992, p 37.

to port of the wind and then turning to starboard through 70 degrees to leave an area of moderately calm water on which the aircraft could alight.[8] This technique called for a mixture of sound airmanship and seamanship. If not, the result could be deadly. On 19 February 1942 Flying Officer L.J. Rowan was killed when his aircraft 'bumped heavily on landing and slewed into the side of the ship' when attempting such a recovery with HMAS *Australia.*[9]

A far more important impediment to the carriage of aircraft on cruisers was the effect of blast on the aircraft structure. This is a problem that had been recognised previously. On 23 March 1934 a condemned Seagull III was embarked on HMAS *Australia* to 'ascertain the limits of safety at which HA (High Angle) guns can be fired when aircraft are embarked' when the ship's guns were exercised against a target sleeve towed by a Wapiti aircraft.[10] The result of this particular trial is unknown and may not have been comprehended. It was a real difficulty that later seriously effected the operation of aircraft aboard active warships. HMAS *Hobart* reported damage to the aircraft from the blast effect of the firing of the ship's high angle guns on 23 June 1940 during operations in the Gulf of Aden. The aircraft was disembarked when the cruiser was docked at Aden.[11] Worse was to follow. On 5 September 1940 *Hobart* was escorting a convoy in the Red Sea, which was attacked on five occasions by Italian bombers. *Hobart*'s Walrus was damaged by the blast effect of the HA guns while on the ship's catapult and required extensive repair work at the RAF base at Khormaksar, Aden. As this was a continual problem the permission of the Senior Naval Officer Red Sea was obtained to land the Walrus on any occasion that the

[8] RAAF Detachment, HMAS *Hobart*, ORB, 17 March 1940, RHR.
[9] RAAF Detachment, HMAS *Australia,* ORB, 19 February 1942, RHR.
[10] 101 (Fleet Cooperation) Flight, ORB, 23 March 1934, RHR.
[11] RAAF Detachment, HMAS *Hobart*, ORB, 23 June 1940, RHR.

Australian cruiser penetrated into the Red Sea.[12] The decision whether to embark the aircraft or not became a serious operational consideration. Although the Walrus was an important adjunct to cruiser operations, there was little advantage gained by embarking an aircraft in an environment where the parent ship could be subjected to air attack, or where action was envisaged that did not require the aerial direction of gunfire.

Even though the experience of Walrus operations aboard HMAS *Hobart* in 1940 indicate that the future of embarking of catapult aircraft on Australia's cruisers was of peripheral utility, two operations undertaken illustrate the potential of shipboard aircraft. On 19 June 1940 the Walrus was catapulted from the cruiser to attack an Italian wireless telephony station on Centre Peak Island in the Red Sea before returned to Aden after refuelling at Kamaran Island.[13] The second operation was mounted while *Hobart* was evacuating native refugees at Berbera. On 8 August 1940 three Italian Fiat CR42 fighters strafed the Berbera airfield, damaging a British Gladiator fighter and damaging one other. As it was considered that the enemy would refuel at the airfield at Zeila, the Walrus was catapulted in an attempt to strike at the Italian fighters when they landed. No aircraft were sighted but the Walrus crew bombed and strafed the residency at Zeila before returning to the ship.[14]

These operations were minuscule in scope compared with the operations undertaken by both the United States Navy and Royal Navy with their respective fleet carriers. It was not that the RAN lacked experience in observing carrier operations. The aircraft carrier HMS *Hermes* had been an important element in the force that

[12] ibid, 7 September 1940.
[13] ibid, 19 June 1940.
[14] ibid, 8 August 1940.

included HMAS *Australia* operating off Dakar in 1940. A Japanese task force sank HMAS *Vampire,* which was escorting *Hermes* off Trincomalee, Ceylon [Sri Lanka], on 9 April 1942.[15] The crews of *Vampire* and *Vendetta* had previously experienced the effect of air power on capital ships on 10 December 1942, as they formed part of the defensive screen of the battle cruisers *Prince of Wales* and *Repulse* when these vessels were sunk by land based Japanese torpedo bombers.[16] There is no doubt as to the impact of carrier-borne aviation on naval warfare during the Second World War. Battles such as the Coral Sea, Midway and Philippine Sea indicated that the aircraft carrier, operating in flexible tactical and strategic groups, had superseded the battleship as the capital ship of the navy and by doing so recast the battle line.[17]

By 1944 pundits like Seversky, who had asserted two years earlier that 'land-based aviation is always superior to ship-borne aviation', must have doubted the validity of their opinions.[18] The introduction of ship-borne fighters such as the Corsair and Hellcat, with their equality in performance with opposing enemy land based fighters, was an eloquent argument on behalf of shipboard aviation. However there were also limitations to the operations of large aircraft carriers. There were risks identified and Navy planners naturally wished to minimise dangers that the carriers would have to face. In the RAAF's area of operations in South-West Pacific Area, the large United States Navy carriers could 'do little in the confined waters around New Guinea and the Solomon Islands, and the Navy planners would take no chances in

[15] Gill, *Royal Australian Navy 1943-45,* p 21.
[16] Gillison, *Royal Australian Air Force 1939-1942,* p 253.
[17] English naval historian Eric Grove has published a study (*Big Fleet Actions*, Brockhampton Press, London, 1991) of Tsushima (pre-Dreadnought), Jutland (Dreadnought) and Philippine Sea (Post Dreadnought) that bears out this point.
[18] A. Seversky, *Victory Through Air Power,* Hutchinson, London, 1942, p 85.

repeating the losses suffered during the air aspects of the Guadalcanal campaign'.[19] Carrier operations during the Philippine landings highlight that the ability of the carriers to be withdrawn periodically for replenishment was essential to sustain naval based air power. On 25 October 1944 Admiral W.F. Halsey, admitting that his pilots 'were exhausted' and that the carriers were low on 'provisions, bombs and torpedoes', pressed for the deployment of land-based aircraft to the Philippines to undertake close support and air defence roles.[20] The vulnerability of aircraft carriers to land based air power was evident during the Okiniwa campaign of March-June 1945. During this period 26 aircraft carriers of Task Force 58 were damaged, seven so severely that flying operations were drastically restricted or the vessel was forced to withdraw for major repairs. Another five suffered minor damage from aerial attack.[21]

From the perspective of the RAAF and RAN, the tactical environment in which they operated conditioned the lessons of the use of maritime air power. In New Guinea the Allies bypassed enemy strong points and attacked others that were within range of Allied fighter units. The object was to capture and develop airfields within fighter range of the next objective. There was no requirement for carrier based air power in New Guinea. It was only during the Philippine campaign that the US 5th Air Force was operating beyond the range of its fighter aircraft and was unable to supply immediate close air support and protection to the troops. Inclement weather prevented the development of air bases in the Philippines and the responsibility for close air support remained with the US Navy. Another problem was the lack of co-ordination

[19] G.G. Reynolds, *The Fast Carriers: The Forging of an Air Navy,* Naval Institute Press, Annapolis, 1992, p.51.
[20] T.E. Griffith, *MacArthur's Airman: General George C. Kenney and the War in the Southwest Pacific,* University Press of Kansas, Lawrence, 1998, p 195.
[21] S. Foster; *Okiniwa 1945 Assault on the Empire,* Cassell, London, (1994) 1999, p 177.

between US Army Air Forces and US Navy commanders. There was no analysis of these campaigns within the Australian services. The RAAF and RAN commanders identified with the positive aspects of ground based and naval based air power respectively and no critical assessment of the campaigns was undertaken. This led to the respective successes of land and carried-based operations being considered in isolation and not as a combination of air power.

The inability of immediate post war planners in Australia to recognise the complementary nature of land and naval-based air power was an issue that influenced service attitudes during consideration of the future of maritime aviation in Australia. This feature of the debate between Air Force and Naval experts will be obvious in the subsequent discussion on the post-war development of a maritime aerial force in Australia.

Attempts were made in 1942 to allot a British aircraft carrier to the South-West Pacific Area. During a visit to London in April, Dr H.V. Evatt, the Minister for External Affairs, sought the allocation of an aircraft carrier to operate under the command of General MacArthur.[22] On 2 May Frederick Shedden, the Secretary of the Australian Department of Defence, advised MacArthur that this request for two British divisions to be transferred to Australia and for the 'allotment of an aircraft carrier' had been refused by the British Prime Minister, Winston Churchill.[23] MacArthur persisted. At a meeting of the Prime Minister's War Conference in 1 June he pressed Prime Minister Curtin to again seek the allocation of an aircraft carrier for his command.[24] There is no published evidence that Curtin pursued the matter further.

---

[22] A. Wright, *Australian Carrier Decisions*, p 63.
[23] D. Horner, *Defence Supremo: Sir Frederick Shedden and the making of Australian Defence Policy,* Allen & Unwin, Sydney, 2000, p 148.
[24] ibid*,* p 149.

In the context of the success of American 5th Air Force and RAAF in the maritime and support role in New Guinea during 1943, the argument for an aircraft carrier to operate within the South-West Pacific Area lost credence. However, a combination of the operational environment in which the RAN operated in 1944, the requirement to replace obsolescent with modern vessels and the consequent opportunity to restructure the RAN, gave added impetus and pressure for the acquisition of an aircraft carrier.

On 17 July 1944 G.L. Macandie, the Secretary of the Naval Board, wrote to the Defence Committee with the recommendation of the Naval Board 'that favourable consideration be given' for the provision of aircraft carriers for the RAN. The Naval Board argued that the aircraft carrier had proved itself a necessary part of any naval task force to provide fighter protection and to project offensive air power against land and sea targets. The Board further argued that a carrier was capable of completely maintaining 'three to five squadrons complete with fuel, maintenance facilities, bombs and torpedoes' and physically moving a distance of 600 miles per day. The Board asserted that in a single month carrier borne aircraft could 'strike without warning in the Atlantic and in the next off the coast of Australia. A few torpedo bomber squadrons in a carrier thus constitute a greater threat than a similar number of squadrons in a shore base where their activities are circumscribed by a definite operational radius'.[25] This argument is spurious in the context of the Light Fleet Carrier proposal. This type of vessel was designed to embark three squadrons of approximately thirty-five aircraft and did not have the offensive capability of the large US Navy or RN fleet carriers.

The Admiralty supported the Australian request to transfer two *Tiger* class

[25] G.L. Macandie, Secretary, Navy Board, to Defence Committee, 17 July 1944, CRS A5799/15, AA.

cruisers and a *Colossus* class light fleet carrier to the RAN at no cost. In its advice to the Dominions Office on 14 February 1945, the Admiralty hinted at the direction of future naval policy. After conceding that the provision of these ships would strengthen the RAN Squadron and give it the potential to actively participate in the later campaigns of the Pacific war, the First Sea Lord was of the opinion that such an action would be a way of providing a 'foundation of modern ships in which to build up Australia's post war fleet. It will no doubt be [the] aim of the Governments concerned to revive [a] scheme for Empire Naval Defence in [the] eastern hemisphere in which the RAN was established as a component part'.[26] Due to the inability of the RAN to raise the manpower required to crew these vessels and the decision of the British Government to make the transfer as a reduction of British liabilities for British Pacific Fleet facilities in Australia, the Australian government did not pursue to matter. The Admiralty Head of Military Branch II was of the opinion that 'one is led to suspect rather strongly that the offer would have been accepted if the vessels had been transferred free of cost'.[27] On 29 June 1945 the Director of Plans suggested that the Dominions Office 'be invited to reply to the Australians to the effect that their refusal of the offer is noted with regret and that should they wish to re-open the question at a later date we will be prepared to consider it in the then prevailing circumstances of war or peace …'[28] The British attitude is summed up in the note by the First Lord, A.V. Alexander: 'I concur. In my opinion the Australian Government have shown themselves most unreasonable.'[29]

The Australian government's decision not to proceed with the acquisition of

[26] Admiralty to Dominions Office, 14 February 1945, ADM1/19051, PRO.
[27] File Note, Head of Military Branch II, 25 June 1945, ADM1/18140, PRO.
[28] File Note, Director of Plans, 29 June 1945, ibid.
[29] File Note, 10 July 1945, ibid.

HMS *Ocean* did not negate Navy pressure for the introduction of an aircraft carrier into the RAN. In an undated paper titled 'The Strategical Position of Australia and the General Nature of the Post War Forces' the post-war status of the British Empire was explained and a strategic argument in favour of the acquisition of an aircraft carrier for the RAN given some credibility. The unknown author noted that the United Kingdom alone was not comparable with the United States of America or Union of Soviet Socialist Republics as a great power, but would require the political, military and economic assistance of other members of the British Empire to enable her to retain respect on the international stage. The conundrum was that individual Empire nations were not capable of effective defence from within their own resources. Thus, in Australia's circumstances, the paper argued that it was 'in her interest that firm agreement be reached with other Empire nations for mutual action in accordance with an agreed overall plan in an emergency'. It was not difficult to extrapolate that, from a British perspective, Empire and Australian interests in the Pacific and Indian Ocean were synonymous. The strategic value of bases in Ceylon (Sri Lanka), Malaya, Borneo and the Admiralty Islands and the raw materials in the Netherlands East Indies, India, Iran, Malaya, Borneo, New Guinea and various Pacific islands, in addition to the linking air and sea communications, were of equal importance to the United Kingdom, Australia, New Zealand and Canada. The paper recommended that to safeguard these resources post war forces should comprise Naval and Air Force mobile task forces, a Sea Frontier force, and forces to protect bases and focal points from sporadic enemy attacks. Naval forces under this scheme would consist of aircraft carriers and their escorts that were 'capable of forming part of an Empire or Allied Task Force'. The Air Force mobile task force was to provide 'long range missions and transportation, ready to move in support of the other Services or wherever required for strategic reasons …

[and] to support sea and land forces, strategic bombing and air defence of important targets'.[30]

This strategic assessment gave the Navy a basis to rekindle the quest for an aircraft carrier. On 23 February 1946 the Secretary Department of the Navy wrote to the Secretary of the Defence Department, Sir Frederick Shedden, bringing the establishment of the RAN Air Branch before the Defence Committee. The CNS, Vice Admiral Sir Louis Hamilton, argued with some passion that due to heavy losses of cruisers during the Second World War and the lack of modern replacements that the RAN 'is now obsolescent'. He argued that, as the Royal Navy and United States Navy experience had shown that 'the aircraft carrier is an indispensable and integral part of any fleet of the future', the acquisition of an aircraft carrier and the formation of a naval air arm was 'essential'. He argued that without a naval air arm that the RAN would 'virtually cease to exist as a first line naval force'. The Vice Chief of the General Staff, Lieutenant General S.F. Rowell, agreed that the RAN should 'conform to principles applied to British and Allied Navies, and that the RAN should control its own air service'. Predictably, Air Vice Marshal Jones, although raising no objection to the Navy proceeding with planning, demurred and the Defence Committee concluded that:

> …with the exception of the Chief of the Air Staff … [the Defence Committee] noted that neither financial nor manpower commitments are involved in the Navy proposal and agreed to recommend the [sic] approval be given to the Navy proceeding with planning, including authority for discussion on a staff level with Admiralty, and preliminary arrangements for the establishment of a Naval Air Branch.[31]

---

[30] 'The Strategical Position of Australia and the General Nature of the Post War Forces', nd, 1649/1, CRS A5954/69, AA.
[31] Defence Committee, Draft Minute 92/1946, 12 March 1946, CRS A5799, AA.

In his dissenting opinion Jones conceded that although command of the air was a prerequisite for amphibious operations it was 'now the prime requirement for success in any operation of war'. He argued that unified control was essential to enable the maximum flexibility and economy of effort against all targets and that the force deployed on the proposed carriers - three squadrons - 'is much below that required for an effective force'. Finding 'outstanding' air leaders and specialist technical officers 'would be difficult of solution' and the streaming of professional careers for personnel would be 'almost impossible unless the personnel were to be extensively exchanged with Royal Navy personnel in which case it would, in fact, become part of the RN.' He averred that the parallel development of an RAN Naval Air Branch would result in the duplication of equipment, training of air and ground crews and that it would be 'possible and more economical for training and maintenance to be provided on a common basis.' He recommended that 'the existing policy by which the RAAF provides air forces for embarkation in ships of the Royal Australian Navy be continued'.[32] Jones overlooked the fact that no RAAF personnel had been employed on flying duties on RAN cruisers since mid 1944 and that both the Royal Navy and United States Navy had dedicated naval air services. Essentially Jones had reiterated the winning assertions propounded by Williams in 1928. However, wartime experience had varied the perspective of the debate. The role of the aircraft carrier was no longer hypothetical, but a fact.

Subsequent events show that Jones' argument had little more than a slight delaying effect. As CNS, Hamilton continued his campaign to acquire an aircraft carrier. On 12 April he wrote to the Admiralty to advise them that Prime Minister

[32] Air Vice Marshal G. Jones to Defence Committee, 13 March 1946, ibid.

Chifley had given verbal permission for informal discussions between the two Naval staffs 'without commitment to the Australian Government' on the establishment of a RAN air branch. He sought to establish what assistance the Admiralty would be prepared to give in the form of training assistance and specialists to advise the Australian Naval Board on the basic organisation required.[33] An appreciation on the future Australian naval requirements dated 1 May 1946, and forwarded to Sir Frederick Shedden by the Vice Chief of the Naval Staff, placed the carrier acquisition issue on a firmer strategic basis. In this assessment it was conceded that it was essential to maintain naval forces in commission for police duties and to ensure that this force was capable of rapid expansion in time of emergency. To meet this requirement trained reserves, ships and other equipment would be needed and the force would be able to be integrated with other Commonwealth forces. This would also require logistics and support arrangements to enable such force to be supported from Australia. The RAN therefore would have to be a balanced fleet of 'two aircraft carriers, four cruisers, two flotillas of destroyers, four groups of eight anti-submarine vessels, minesweepers, the appropriate fleet auxiliaries and suitable ships and craft for training in combined operations'. The Naval Air Arm 'must be part of the Navy' and not, as Jones argued in April, a navalised RAAF. To enable the proposed carriers to operate efficiently there was a requirement to establish landed naval bases for logistic and training support. Shedden forwarded this assessment to Vice Admiral Sir Roderick McGrigor, Vice Chief of the Naval Staff (RN) on 29 June 1946.

On the day before, Hamilton had written to his minister, N.J.O. Makin, that:

> the two great sea powers in the world are basing their fleets on aircraft carriers. [If] Australia follows suit [it] will have a modern navy built

[33] Sir Louis Hamilton to Admiralty, 12 April 1946, 1649/2, CRS A5954/69, AA.

> around aircraft carriers. Naval aviation is highly specialised [and] to reach a stage of operational [capability] would require five years …[34]

On 19 July the minister recommended to Prime Minister Chifley that the Fleet Air Arm be established and that a *Glory* class aircraft carrier be procured.[35]

The Defence Committee meeting of 30 July 1946 affirmed the view that it had expressed in its minutes No. 269/1944 and No. 235/1945 that the RAN should include carriers. However, the Committee did not fully endorse the proposal and on 2 September the Prime Minister directed that the Ministers for Air and the Navy provide advice on the advantages and disadvantages of alternative methods of providing personnel to man the carriers and air groups. Each proposal was to be supported by full detail of the requirements for shore establishments, training facilities, logistic support and capital and maintenance cost that would be incurred. The Defence Committee paradigm was for a force of two aircraft carriers and three combat air groups.[36] To astute observers it was apparent that the navy was close to winning the aircraft carrier debate.

Captain E.W. Anstice (RN) and Group Captain V.E. Hancock signed the letter forwarding the subsequent report to the CNS and CAF on 19 May 1947. The 25-page report and attached annexes concluded that 'in the opinion of Both Staffs it is clear … that the Naval Plan will provide the most efficient Weapon for Naval purposes at the present day'. During the discussion the Naval and Air representatives disagreed on three topics related to 'fundamental principles', but were in agreement on another 19 and in the remaining 13 topics the Air Force 'agreed to conform' or to vary their plan

[34] Hamilton to Minister for the Navy, 28 June 1946, ibid.
[35] Makin to Chifley, 19 July 1946, ibid.
[36] Defence Committee, Minute No. 301/1946, 30 July 1946, ibid.

to reflect the RAN position.[37] Group Captain Valston Hancock's personal view was, according to Sir Victor Smith, that he (Hancock) was 'not sure that Australia could afford aircraft carriers but if it could, then the air component should be provided by the Navy',[38] Hancock however, was under instruction to seek 'to align the two matters of detail but not to compromise fundamental principles of the RAAF Plan'.[39] Cabinet approved the decision for the RAN to acquire an aircraft carrier and its associated air group on 3 June 1947.[40] In this context the Antice/Hancock discussions, established to evaluate the contending plans for the administration and maintenance of naval air arm, was an important process in the carrier introductory phase, but would not have effected the basic acquisition decision.

Jone's response to the Anstice/Hancock report was rapid and predictable. On 22 May he wrote to the Secretary of the Defence Committee (Shedden) reiterating his dissenting opinion of March 1946, concluding that:

> I note that the report of the Naval and Air Staff concludes with an observation that the Naval Plan will provide the more efficient weapon for Naval purposes at the present day. This advantage is a matter of degree and is derived mainly from the organisation of the air component exclusively for naval aviation and from the ease of administration assured when all elements directly associated with naval warfare are under one Department. Whatever the temporary advantage may be, it is, in my opinion, completely outweighed by the gain in overall efficiency of our total air resources when organised and developed as a unified air force.
>
> It is my conclusion that the RAAF Plan, as modified, provides not only for the most effective use of Australia's aviation potential by establishing a single authority for its development, but also accords with the trend towards unification of common services.[41]

---

[37] Minutes of the meeting held in accordance with the Prime Minister's directive of 2 September 1946, RHR.
[38] Smith, *A Few Memories of Sir Victor Smith*, p 42.
[39] Minutes of the meeting held in accordance with the Prime Minister's directive of 2nd September, 1946, p 1, RHR.
[40] Wright, *Australian Carrier Decisions*, p 151.
[41] Jones to Secretary, Defence Committee, 22 May 1947, 1649/1, CRS A5954/69, AA.

The theory of unified air forces was a valid argument, but one that was totally out of tune with the reality of the post war world. The argument may have been more effective if it had been had couched in a more practical parochial context, and identifying weaknesses in the Naval conception of aerial operations and the potential for operational control of the force by the Royal Navy. Within four months Jones' plea for unification suffered a severe blow. The United States Air Force was formed on 19 September 1947. A bitter battle developed between the nascent Air Force and Naval Air Service for a substantive strategic role.

As noted in more detail in the introduction, the strategic context in which the carrier decision was made must be briefly discussed. The first post-war decade was one of great moment, with the start of the so-called 'Cold War' and the emergence of independence movements in colonies such as Indonesia and Indo-China. It was also a period where individual nations of the pre-war British Empire were considering their own future. India and Pakistan gained national sovereignty; Kenya and Malaya were in the throes of bloody terrorism in the name of self-determination and the power of the United Kingdom in the international forum declined. There was an international alignment between the respective East-West Blocs. The development of treaty organisations such as the North Atlantic Treaty Organisation (NATO) and the South East Asia Treaty Organisation (SEATO) in the late 1940s and early 1950s, designed to contain the perceived threat of virulent Communism ideology of China and the Soviet Union, placed pressure on defence national policy.

There was also considerable pressure from British shipbuilding and civic interests exerted on the Admiralty prior and subsequent to the end of the Second World War. For example, on 8 December 1944 the Town Clerk and Provost of Greenwich forwarded a *Memorial…To HM Government with regard to the possibility*

of unemployment in shipbuilding engineering works etc that concluded with the request that 'His Majesty's Government will carefully and seriously consider …[to] take all possible steps … to maintain a sufficient amount of industry for the well-being of its citizens and to employ such number of men and women as are available' and called for a Graving Dock to be established in the Lower Clyde River.[42] After the war the pressure did not cease. The Glasgow City Chambers and the General Manager of the Tyne Improvement Commission brought pressure on the Admiralty for the development of this facility on 18 December 1946 and 7 February 1947, respectively.[43] Although the Admiralty was aware of the social and economic issues involved, in the face of calls made in late 1945 for skilled manpower to be released from the dockyards for use in national rebuilding, the First Lord and First Sea Lord called for a proper plan for a post war navy. They were cognisant that the British merchant marine must have priority for new construction and repair, but fought for the retention of a navy ship building programme, including certain cruisers, *Weapon* class destroyers and the incomplete light fleet carriers, as a way of preventing 'shipyard dislocation'. Although considered by the First Lord's civil advisers as a dubious argument, the matter was discussed between the first lord and his naval advisers and a compromise reached. British naval historian Eric Grove notes that 'the desire not to waste money already spent also helped save the four least complete *Majestic*-class light fleet carriers.' The first lord was influenced, due to the 'sales potential, or their being used to replace older light fleets sold or loaned to foreign or Commonwealth navies', to decide to continue with the construction of the *Majestics*.[44] The dockyard

[42] *Memorial … to HM Government with regard to the possibility of unemployment in shipbuilding, engineering works etc,* 8 December 1944, ADM 24397, PRO.
[43] ibid.
[44] E.J. Grove, *Vanguard to Trident: British Naval Policy Since World War II,* The Bodley Head, London, 1987, pp 12-13.

issue is clear in the Admiralty advice to the Australian Chief of the Naval Board in November 1946, when the decision to proceed with the carrier purchase was still a matter of conjecture, that the offer of two *Majestic* light fleet carriers at a cost of between £2,750,000 and £3,000,000 per vessel, remain open. However, the Admiralty pressed for a speedy decision 'since it [was] difficult to foresee what dockyard or other difficulties may arise affecting resumption of work on suspended vessels, if [the] decision is delayed over a lengthy period.'[45]

The RN planned to contract its wartime complement by 665,000 at the end of 1945, 540,000 by 31 March 1946 and 415,000 by 30 June 1946.[46] Such a reduction in force levels made it impossible to man the ships in service and, as already noted, the Admiralty planned that units of the Dominion navies would be deployed as units of the Royal Navy. In 1947 the Admiralty envisaged that the role of the RN, after the outbreak of a major war between Eastern and Western powers, would be in defence of communications between the Commonwealth and the United States. Forces would be required, too, to support Commonwealth land forces fighting in the Middle East. However, if a major war in the Pacific broke out, then the 'United Kingdom, if also engaged elsewhere would not be able to make any large contribution to the remainder of the area'.[47] The upshot of this policy was the 'regionalisation' of military commitments. In 1949 the Australia, New Zealand and Malaya (ANZAM) area was established, which resulted in the responsibility for the protection of 'the ANZAM area and the Indian Ocean would be left to the RAN and RNZN'.[48] This would release

[45] Admiralty to Australian Chief of Naval Board, 18 November 1946, ADM 205.69, PRO.
[46] Grove, *Vanguard to Trident*, p 19.
[47] British Chiefs of Staff, *Review of the World Strategic Situation,* quoted by E. Grove,' British and Australian Naval Policy in the Korean War Era', T.R. Frame, J.V.P. Goldrick, and P.D. Jones, *Reflections on the RAN,* Kangaroo Press, Kenthurst, 1991, p 253.
[48] Board of Admiralty, Memorandum B590, ADM 167/133, quoted in ibid, p 255.

ships for operation in the Atlantic Ocean and Mediterranean Sea - areas that the Admiralty assessed as being vital to the interests to the United Kingdom.

When HMAS *Sydney (*ex HMS *Terrible)* was accepted into RAN service on 5 February 1949[49] it had been considered by the Admiralty as 'the most modern carrier completed for the Royal Navy at [the] time of transfer'.[50] Fitted with a single BH-III twin track catapult, *Sydney* operated two squadrons of Sea Fury piston engine fighters (Nos 805 and 808) and two of Firefly fighter/anti-submarine/reconnaissance aircraft (Nos 816 and 817). The Australian carrier worked up in British and Australian waters before the British/Australian naval connection resulted in HMAS *Sydney* replacing HMS *Glory* in Korean waters, thus becoming the only RAN aircraft carrier to participate in active combat. On 25 June 1950 the North Korean army had invaded South Korea and the United Nations sanctioned military action to counter this act of aggression. Aircraft carriers were in heavy demand by the United Nations Command.

As the Australian official historian, R. J. O'Neill, explains:

> United States Air Force aircraft in the Far East were in short supply: competing demands for aircraft for defence of the NATO area and the United States itself seriously restricted the numbers of reinforcing aircraft which could be sent to Korea. Initially there were few serviceable airfields in Korea … and the facilities available in Japan. were overburdened. …. Gradually more aircraft became available and more airfields were built in South Korea, but the entry of the Chinese ground and air forces into the conflict, particularly their use of the new MiG-15 jet fighter in large numbers, meant that the allied air effort had to be increased sharply. The most readily available way to meet these demands was to make use of carrier-based aircraft throughout the war.[51]

This is the background to the Royal Navy's operation of light fleet carriers in Korean

[49] Gillett, *Wings Across the Sea*, p 68.
[50] Admiralty to Australian Chief of the Naval Board, 19 August 1947, ADM 205.69, PRO.
[51] R. O'Neill, *Australia in the Korean War 1950-1953, Volume II, Combat Operations,* The Australian War Memorial and the Australian Government Publishing Service, Canberra, 1985, p 464.

waters. HMS *Triumph* commenced duty on 5 June 1950 and was replaced by HMS *Theseus* between 29 September 1950 and 23 April 1951. *Glory* operated in Korean waters between 23 April and 30 September 1951.[52] These deployments placed operational demands on the RN that could not be met from its own resources. In December 1950 the First Sea Lord, Sir Bruce Frazer, had informally suggested to the Australian Chief of the Naval Staff, Sir John Collins, that HMAS *Sydney* could possibly reinforce HMS *Theseus*. Collins refused the offer on the grounds that the carrier was due to exercise with British ships in Australian waters early in 1951 and that carrier could not be sent to Korea at such short notice due to a 'lack of men'.[53] Fraser exerted further pressure, advising his Australian counterpart on 3 April that experience 'seems to show that about six months intensive flying is about all one can do without relief'. He continued that he could not maintain two carriers on station and would have to withdraw HMS *Glory* for 'about two months in September for refit and recuperation'. Then came the crux of his letter: 'Do you think in September it might be possible to send *Sydney* for about two or three months operational flying if the Korean business is still going? It would be invaluable to the cause and might be useful experience for her…'[54]

The Naval Board recommended that HMAS *Sydney* should be made available and Admiral Collins advised Fraser on 5 July 1951 that the Australian carrier would stay in Korea long enough for HMS *Glory* 'to refit in Sydney town. I [Collins] think all the details are being ironed out and I know the lads are keen to go. I am assuming she will still go if Korea fizzles out even if it becomes merely an exchange to the Far

[52] For an in depth account of these operations see J.R.P.Lansdown, *With the Carriers in Korea: The Sea and Air War in SE Asian 1950-1953*, Crecy Publishing Limited, Manchester, 1997.
[53] O'Neill, *Australia in the Korean War 1950-53, Volume II,* p 467.
[54] First Sea Lord to Chief of the Naval Staff, 5 April 1951, AM 205.76, PRO.

East Station …[55] The aircraft carrier, in company with destroyer HMAS *Tobruk,* departed for Japan on 31 August 1951. On 5 October HMAS *Sydney* replaced USS *Rendova* off the west coast of Korea. Embarked on the Australian carrier were the Sea Fury fighters of Nos. 805 and 808 squadrons and the Firefly aircraft operated by No. 817 Squadron. Lieutenant Commander M.F. Fell RN, the Combat Air Group Commander, led the first strike by *Sydney's* aircraft on 5 October 1951. The Australian carrier undertook seven patrols in Korean waters, completing the last on 25 January 1952.[56] The aircraft operated by the RAN inflicted over 3000 casualties on the enemy and destroyed 66 bridges, seven tunnels, 38 sections of railway line, seven railway sidings, five water towers, two locomotives, 159 railway trucks, 2060 houses, 495 junks and sampans and fifteen guns.[57] On the debit side was the loss of seven Sea Furies, two Fireflies and three pilots.[58] In total 2366 aerial sorties were flown - an average of 55.2 per full flying day.[59]

In the course of the Korean War the RAN had joined with the RN and US Navy to gain 'significant experience in operating and aircraft carrier in combat.'[60] It also provided an opportunity to compare the operations of an Australian land based squadron and a similar number of carrier based aircraft. The statistics are not comprehensive as the only data available for operations mounted from HMAS *Sydney* relate to October 1951. However, a statistical comparison between the two fighter forces indicate that a ship based force could be expected to undertake a higher daily

---

[55] Collins to Fraser, 5 July 1951, ibid.
[56] For detail of HMAS *Sydney*'s Korean operations see: Gillett, *Wings Across the Sea,* pp 68-70; O'Neill, *Australia in the Korean War 1950-53, Volume II,* pp 454-86; Lansdown, *With the Carriers in Korea,* pp 173-213.
[57] O'Neill, *Australia in the Korean War 1950-53, Volume II,* p. 482; Lansdown, *With the Carriers in Korea,* p 213
[58] O'Neill, *Australia in the Korean War 1950-53, Vol II,* p 483.
[59] Gillett, *Wings Across the Sea,* p 70; Lansdown, *With the Carriers in Korea,* p 213.
[60] O'Neill, *Australia in the Korean War 1950-53,* p 486.

sortie rate, but over a shorter period, than land based fighters. In the Korean context land and sea-based fighters were operating under similar operational conditions against similar targets. During October 1951 the RAAF fighter squadron, No. 77, was operating Meteor Mk 8 fighters from the US Air Force base at Kimpo, near Seoul.

Comparative Sortie Rates - Sea Fury aircraft of No. 805 and No. 808 Squadron RAN and No. 77 Squadron RAAF - October 1951.

Date	Sea Fury	Meteor
1	Nil	24
2	Nil	18
3	Nil	32
4	Nil	Nil
5	30	26
6	30	31
7	18	11
8	Nil	12
9	Nil	16
10	42	16
11	68	18
12	Nil	4
13	Nil	20
14	Nil	16
15	Nil	16
16	Nil	24
17	Nil	16
18	36	18
19	36	18
20	22	Nil
21	38	6
22	Nil	6
23	32	18
24	24	25
25	32	18
26	38	30
27	Nil	32
28	Nil	32
29	Nil	24
30	Nil	22
Total	446	549

[61]

[61] Statistics in this section are derived from Australian Military Forces 72 CBAL Section HMAS *Sydney*, War Diary - Korean Operations, 31 October 1951, NHS; No. 77 Squadron, ORB October 1951, RHR.

These raw figures show that Sea Furies operated for 13 of the 30 days of October. Meteors flew on 28 days. However, the naval aviators flew at a higher sortie rate, the average of 34 sorties per day compared favourably with the RAAF's average of 19. These are fairly conclusive figures but do not reflect the different roles that were being undertaken by the squadrons in October. No. 77 Squadron had commenced jet fighter operations on 29 July 1951 with high hopes; hopes that were dashed when it was discovered that the Meteor Mk 8 was no match for the second generation MiG-15. The Australian squadron was removed from first line fighter duties. In September 1951 No. 77 Squadron commenced flying close escort duties for B-29 bomber formations and combat air patrols over attack aircraft striking at the main supply routes of North Korea and the defence of Kimpo.[62] In October they flew the following series of operations:

B-29 Bomber escort duties	214 (39%)
Fighter Sweeps	169 (31%)
Scrambles	107 (19%)
Combat Air Patrols	55 (10%)
Other	4 (1%)

The data related to naval operations over the same period is not directly comparable:

Strike Missions	180 (40%)
Armed Reconnaissance	132 (29%)
Combat Air Patrol	132 (29%)
Air Spot Missions	22 (2%)

Combat air patrols flown by both air arms were defensive in nature. Those flown from the Australian carrier were to defend against the possibility of enemy aircraft attack on the task group; those by No. 77 Squadron (combat air patrols, scrambles and fighter sweeps) to protect aircraft returning from strikes over North Korea, provide cover for

[62] D. Wilson, *Lion Over Korea: 77 Fighter Squadron RAAF 1950-53,* Banner Books, Belconnen, 1994, p 97.

downed pilots waiting rescue from behind enemy lines and to protect the base at Kimpo. Strike missions flown by Nos. 805 and 808 are not comparable to flying close escort for B-29 formations, but were certainly in line with the later ground attack and interdiction role of the Meteor squadron. The 'spot missions' were the traditional naval gunfire-spotting role undertaken by amphibians launched from the Australian cruisers during the inter-war years. Given the capacity of the Sea Fury to carry effective ordnance and deliver it accurately it may have been more economic to use the aircraft to strike against these targets. A more realistic comparison can be made from a study of the operational statistics related to No. 77 Squadron for September 1952. This month has been selected at random. The Squadron was flying similar roles as that flown by HMAS *Sydney'*s Sea Fury aircraft and the figures are as follows:

Armed Reconnaissance	50 (8%)
Combat Air Patrol	64 (10%)
B-26 escort	159 (26%)
Strike	342 (56%)
Total	615

The squadron flew operations on 24 days at an average sortie rate of 25.4 per operational day.[63]

Even though the record of HMAS *Sydney*'s Air Group was outstanding it must be placed in the context that the Allies operated under complete air superiority. The Sea Fury was one of the finest piston engine British carrier-borne fighters. However, there is no doubt that, had Chinese and Russia airmen seriously intended to contest air superiority over the Korean mainland, the Yellow Sea and Sea of Japan, the type would have been hard pressed to protect HMAS *Sydney* and her consorts. It could be argued that the larger American carriers with their Banshee and Panther jet fighters would have been deployed to counter such a threat. But this scenario overlooks the

[63] No. 77 Squadron, ORB September 1952, RHR.

prospect of aggressive action by the communist air forces making US Air Force bases on the Korean mainland untenable. It would not be difficult to envisage a situation akin to that which prevailed in July 1950. The operational success of HMAS *Sydney* was transitory. Even though the Admiralty considered that *Sydney* might have been the most modern carrier completed for the RN in 1949, the carrier was of Second World War technology, and equipped with aircraft of a similar vintage.

Theoretically her sister ship, HMAS *Melbourne,* would incorporate modern innovations that had the potential to make this carrier important to the maritime defence of Australia.

The fine operational record of HMAS *Sydney* in Korean waters masked the inherent weakness in capacity of the *Majestic* class light fleet carrier to operate modern aircraft. When the decision was made to acquire the two carriers, the Admiralty had assured the RAN that the class would have a useful life of 'at least 20 years'. However they would have to be modernised, after which the Admiralty advised that the carriers 'should be able to operate all types of combat naval aircraft, which will be in service between now, and 1955'.[64] The second *Majestic* being built for the RAN (HMAS *Melbourne*) was originally due for delivery in 1949. It was planned to modernise the ship during construction but a series of delays retarded delivery until 1955. When delivered HMAS *Melbourne* incorporated modern aircraft carrier design features including angled deck, steam catapult and the mirror landing system. Even so the RAN was rightly concerned that the carrier, originally to be delivered in 1949, would have a limited operational life and would be seriously restricted operationally after 1955. During November 1947 the RAN questioned the desirability of obtaining

[64] Head of Military Branch to ACNB, 27 September 1947, ADM1/20673, PRO.

this carrier' and requested information on the degree of operational restrictions and 'what other carriers would be available without these limitations'.[65] The Admiralty for budgetary, operational and inter-service political reasons did not countenance the supply of a more capable carrier.[66]

The aircraft operating capability of the *Majestic* class was a matter of intense discussion and deceit by the naval authorities of both nations. The advice given on 27 September 1947 was a case of dissimulation and a cause for embarrassment to the Admiralty. On 28 January 1948 the First Lord's secretary advised his superior that 'a somewhat false impression [was conveyed] since by 1955/57 we may very well have in Service the jet-propelled night fighter which these carriers will not be capable of operating, according to our present information'.[67] Vice Admiral Sir John Collins had assumed the position as the Australian Chief of the Naval Staff on 24 February 1948 and considered the advice tendered in CAF 235/48 of 27 August 1948 that the modernised '*Majestic* class will be capable of operating trade protection aircraft' only 'as a shattering blow'. Collins wrote that he:

> … [Had] (I hope) just persuaded the prime minister to accept the very reasonable offer [of] £500,000 to modernise the second carrier [HMAS *Melbourne*] before delivery. This was done on the understanding that the modernised *Majestic* would be capable of operating the naval aviation aircraft in sight. If the CAFO is correct it cuts the ground from under our feet, but I can't believe it is so. Should be most grateful for reassurances on this point … [68]

The First Sea Lord drafted a conciliatory letter to the Australian Prime Minister assuring him that the carriers 'on the information at present available' would be

[65] ACNB to Naval Liaison Officer, London, 13 November 1947, ibid.
[66] First Sea Lord to Admiral Hamilton, 9 December 1947; Undersecretary of Finance to 5th Sea Lord, 12 December 1947; Brief for First Sea Lord, Defence Committee meeting, 19 December 1947, ibid.
[67] Secretary to First Lord, 28 January 1948, ADM205/69, PRO.
[68] Rear Admiral Collins to Admiral Fraser, 7 September 1948, ibid.

capable of operating all the naval aircraft in service in the middle fifties 'and well beyond that date'.[69]

On 24 March 1949, Captain J.R. Allfrey, wrote to the First Sea Lord, raising the subject of the capability of HMAS *Melbourne*. He referred to the letter of 30 January to the Prime Minister that HMAS *Melbourne* would be capable of handling modern jet aircraft. Although there 'was some doubt about the truth of this statement' - the First and Fifth Sea Lord had 'pointed it out, but probably in order not to prejudice the negotiations, a warning note was not given.' Allfrey mentioned that the night fighter N7 and N9 day fighters under development may not be capable of operating from the carrier before a new catapult was fitted in 1952. 'The Australians had not been told this yet by us' and they were only to be told 'by implication'. At this stage the First and Fifth Seal Lords struck a warning note about the night fighter although this was not incorporated in the telegram. Allfrey confirmed that other later aircraft would not be able to be operated unless a modified catapult was fitted to the carriers. He concluded:

> I feel that the present draft letter does not accept sufficient responsibility and I would suggest that the tone of the letter should be more frank and helpful than it is. At the moment it implies ['we know what is best for them and that' deleted] we rather resent their having asked questions about it.
>
> In addition, I am quite sure that some parallel action ought ['must' deleted] be taken on the government level. The Australian Government will have to be told the position by the ACNB in view of the finance involved and will inevitably attack our government on the subject. I think we should take the initiative.[70]

Allfrey had warned the Fist Sea Lord that Collins would raise the subject when the two men met at Greenwich, after attending the Commanders-in-Chief meeting to

[69] Draft reply to Australian Prime Minister, September 1948, ibid.
[70] Captain J.R. Allfrey to First Sea Lord, 24 March 1949, ADM 205/72, PRO.

be held on 21 and 22 April At the meeting at the Captain's Office at Greenwich on 26 April, Collins was advised that HMAS *Melbourne* would be fitted with new aircraft arrester gear, lifts, catapult, strengthened flight deck and internal alterations. Even so the ship would not be able to operate the Supermarine Attacker (in service August 1951),[71] the new Westland Wyvern strike fighter or N7/46 or N9/47 aircraft under development, until a new catapult was fitted'. .[72] When the turboprop powered Wyvern and the latter two pure jet types were introduced into service in 1953 they were equivalent in performance to the US Navy McDonnell F2H Banshee fighter, which was operational [in 1949] and had already been superseded, in US Navy service.

The result of the conversations was a duality of dissimulation. The Secretary to the First Sea Lord recorded the discussions on 27 April 1949. His comment is indicative of the collusion between the two admirals:

> …. The situation was fully explained to Admiral Collins who asked that action might not be taken to bring this matter to the notice of either Government. He accepted the fact that the British Light Fleet Carriers would be in exactly the same position as the Australian Light Fleet Carriers, but he felt that if the Australian Government became aware that there was a hitch with regard to these carriers - a hitch which he felt might be resolved eventually - the Australian Government might feel disinclined to purchase the second carrier.
>
> Australia must, he said, get on with Naval Aviation for which the second carrier was essential, and he personally accepted, on behalf of the RAN, any disabilities in the supply of modern aircraft.
>
> I feel that this should be treated as unofficial [sic] as possible and should not be quoted against First Naval Member as if the matter became one of Australian Government knowledge he would of course have to take his stand with his Government.[73]

[71] *An Illustrated Encyclopedia of Aircraft,* p 2980
[72] Sir Arthur Hezlet, *Aircraft and Sea Power,* p 330.
[73] Secretary to the First Sea Lord, No. 1912/89C Private Officer, 27 April 1949, ADM 205/72, PRO.

Collins was reconciled to the fact that *Melbourne* would not be capable of undertaking a front line role as originally envisaged. On 27 March 1950 he wrote to Admiral Fraser accepting the reality that the primary role of both *Sydney* and *Melbourne* in the ANZAM Area would be 'trade protection in which A/S operations play a major role and for which they are well suited'. Therefore the role of the two carriers was, primarily, an anti-submarine one and, secondly, to supply fighter defence in areas outside the radius of shore-based aircraft and 'within this limitation, strike, reconnaissance and army cooperation' duties. Collins was of the opinion that the fighter aircraft capable of being operated from the decks of the two carriers would be a match for unescorted long-range bombers. However, he did concede that 'if our carriers were to be employed in an area within the radius of fast enemy shore-based aircraft, the carriers would have to form part of a force with carriers armed with the appropriate fighters'. A measure of the compromise that had to be accepted was the current technical impracticability of fitting a steam catapult to the light fleet carriers. With this in mind Collins sought detail of the 'latest forecast of all types of future naval aircraft which will be able to be operated from a modernised *Majestic* without a steam catapult'.[74]

As a result of Collins's letter, Fraser was advised on 20 April 1950 that *Sydney* and *Melbourne* would be capable of operating 'the GR17 [Fairey Gannet] and any other A/S aircraft likely to come into service'. The Fifth Sea Lord went on to assert that the two ships with their present fit of catapults could operate the Sea Venom all weather fighter under certain conditions:

> With catapult only. Ship steaming at 22 knots, requiring seven knots natural wind for the aircraft in overload condition, or two knots in normal weight condition: and

[74] Admiral Collins to Admiral Fraser, 27 March 1950, ADM205/74, PRO.

> With catapult in combination with RATOG [Rocket Assisted Take Off]. Ship steaming at 22 knots with no natural wind, even in the overload condition.

This information was passed to Collins on 27 April 1950.[75] 'The Royal Navy [also] suggested that the Sea Venom may be of value to the RAN as a replacement for the Sea Fury'[76] but there is evidence that this advice was not wholly altruistic in nature. The Fifth Sea Lord had been uncertain regarding the Sea Venom project and the acceptance of a substantial order for the type from the RAN may be considered of crucial importance when the decision was made to continue with the development of the aircraft.[77] A total of 39 Sea Venom FAW53 fighters were ordered in December 1951 as equipment for HMAS *Melbourne,* where 36 Fairey Gannet anti-submarine aircraft that were ordered a year later joined them. The Gannet remained in service as the backbone of the RAN aerial anti-submarine force until superseded by the Grumman Tracker in 1967. The Sea Venom soldiered on until replaced by Douglas A4 Skyhawk aircraft in the same year. The Sea Venom was 'a reasonably good aircraft'[78] that gave the RAN the capability of defending the fleet in its secondary role. However, as the armament of the Sea Venom (four 20mm cannon, eight 3 inch rockets with 60 lb heads) was equivalent to that of the Sea Fury that it superseded, it had dubious utility in the strike and close support role and its value as a reconnaissance platform was a matter for conjecture. Despite these shortcomings, Rear Admiral G.G.O. Gatacre (the original commander of *Melbourne*) in the foreword to a

---

[75] 5th Sea Lord to First Sea Lord, 20 April 1950, ibid.
[76] *Flying Stations*, p 77.
[77] J. Goldrick, 'Carrier for the Commonwealth', T.R. Frame, J.V.P. Goldrick and P.D. Jones, *Reflections on the Royal Australian Navy,* Kangaroo Press, Kenthurst, 1991, p 237.
[78] Wilson, *Military Aircraft of Australia,* p 102; p 118; *The Illustrated Encyclopedia of Aircraft,* p 2130.

publication commemorating the silver anniversary of the ship emphasised that the all weather capability of the Sea Venom was unique to the region.[79].

The maximum speed of HMAS *Melbourne* has been quoted as 24.25 knots.[80] Even though the carrier was fitted with innovations to increase its operational capability such as a five and a half degree angle deck and the steam catapult when commissioned on 28 October 1955, the speed of the carrier restricted flying operations. With normal operational mechanical wear on the engines and hull it is conceivable that the maximum speed of the carrier was close to the optimum figures for fighter operations quoted above. Obviously this restriction imposed operational constraints. HMAS *Melbourne* was forced to 'search for the wind' when flying off aircraft (especially in light and variable winds); requirements that may have been a contributing factor in the tragic collision between *Melbourne* and HMAS *Voyager* during February 1964.[81]

HMAS *Melbourne* was decommissioned on 30 June 1982 and the RAN was forced to divest itself of its fixed wing aircraft.[82] The future of naval aviation was in the balance. The development of an RAAF capability in the maritime reconnaissance and strike role over the post war period, and the nexus between the Air Force and Navy will be discussed in the next chapter.

There are two issues that bear critical appraisal. First is the contention that the acquisition of a Light Fleet Carrier by the RAN was in the interest of the United Kingdom and Royal Navy and not that of the RAN or Australia. This is a constant theme in the foregoing discussion. In the social and regional economic context of

---

[79] R. Gillett, *HMAS Sydney 25 years*, Nautical Press, Sydney, 1980, p 8.
[80] Gillett, *Wings Across the Sea,* p 81,
[81] Smith, *A Few Memories of Sir Victor Smith,* p 54.
[82] Gillett, *Wings Across the Sea,* p 92.

British shipbuilding and associated industry it was a responsible decision to continue with the construction and to actively seek overseas orders. Of the 15 *Colossus* and *Majestic* class Light Fleet Carriers, all of the latter were purchased by Canada (2), Australia (2) and India (1). Ten Co*lossus* class vessels were completed, one each of which was sold to France, the Netherlands, Brazil and Argentina, and the last RN carrier of the class was placed in reserve during 1975.[83] The sale of the five *Majestic*s, even at a bargain price (in the case of the Australian purchase of *Sydney*), was of considerable socio/economic importance to shipbuilding areas in which the carriers were constructed.

As British power and influence waned, the RN became more Europe oriented. The effect of this development and the 1950 Australian New Zealand and Malaysia Arrangement (ANZAM) will be discussed further. The role of the RAN and the RAAF was to be re-appraised, and this is the subject of the final section of this thesis.

[83] R. Chesneau, *Aircraft Carriers of the World, 1914 to the Present: An Illustrated Encyclopedia,* Brockhampton Press, London, 1996, pp 129-34.

9

RETHINKING A MARITIME STANCE

While the RAN was actively pursuing plans to increase its aerial maritime capability during the first post-war decade, the RAAF commitment in the area declined. As at January 1945 the Air Force torpedo strike capacity consisted of 'Catalina aircraft which are being used part time' and two Beauforts 'reserved for experimental torpedo dropping'. Nor was there an extensive stock of torpedoes - 192 British Mk XII and Mk XV torpedoes held at Nowra and the RAN Torpedo Factory in Sydney plus 20 American Mk XIII torpedoes in North Western Area and 123 held at Nowra for the British Pacific Fleet.[1] On 12 November 1945 Group Captain B.R. Pelly wrote to the DCAS recommending that 'it would be prudent to retain in the RAAF the highly specialised technical equipment necessary for the operation of a torpedo force'.[2] Wing Commander O. Dibbs was even more emphatic, advising that it was 'unwise to allow the air-borne torpedo to fade entirely out of RAAF considerations'.[3] Pelly had pre-empted Dibb's argument that technical difficulties related to the operational use of the airborne torpedo would be overcome in time. However, Pelly had made one telling point - 'that in a small force like the RAAF the maintenance of even one or two torpedo squadrons involves a very large overhead expense and general commitments which are not justified unless the effectiveness of the torpedo is substantially assured'.[4] The RAAF's days of involvement with aerial torpedoes in the anti-shipping role were numbered. The Base Torpedo Unit lingered on at Nowra, undertaking

[1] Memo, 25 January 1945, 15/502/8, CRS A1196, AA.
[2] Pelly to DCAS, 12 November 1945, ibid.
[3] Dibbs to A/AMEM, 26 November 1945, ibid.
[4] Pelly to DCAS, 12 November 1945, ibid.

torpedo dropping exercises in co-operation with the Royal Navy, until it was disbanded on 31 March 1947.[5]

As noted earlier, the promise of the Liberator long-range bomber force had not been fulfilled. By early 1948 this type had been withdrawn from service and replaced by three squadrons (Nos. 1, 2 and 6) of Australian built Avro Lincoln heavy bombers. These units were elements of No. 82 Wing, which was based at Amberley, Queensland, and provided the RAAF with limited 'deterrent' capability. The Lincoln was a powerful weapon by Second World War operational standards, but the type was approaching obsolescence in the early 1950s, being rapidly supplanted by the British 'V' bombers and USAF B-47 and B-52 four engine jet bombers capable of delivering nuclear weapons.[6] However Lincolns were to prove an important aircraft in the reconstitution of the RAAF maritime force.

By March 1946 the four Catalina equipped squadrons that had comprised an important element of the RAAF's long range maritime strike capability had been disbanded. On 1 October 1947 the Search and Rescue Wing was raised. Based at Rathmines on the shores of Lake Macquarie, New South Wales, the wing operated detachments at Darwin, Townsville and Port Moresby to meet RAAF and Department of Civil Aviation search and rescue obligations.[7] In addition the Wing supplied aircraft, pilots and technicians on loan to the Australian National Antarctic Research Expedition during 1948, but it is debatable whether the maritime defence of Australia was enhanced by these activities. In common with many RAAF units at the time, those manning the Wing were suffering from personal anxiety regarding employment

---

[5] *Units of the Royal Australian Air Force; A Concise History, Volume 7, Maintenance Units,* p 120.
[6] A. Stephens, *Going Solo: The Royal Australian Air Force 1946-1971,* Australian Government Publishing Service, Canberra, 1995, p 362.
[7] Search and Rescue Wing, ORB, October 1947, RHR.

in the Interim Air Force.[8] Aircrew members were able to meet operational requirements, but only by foregoing their full recreation leave entitlement, and the loss of 'old hand' technicians was having serious maintenance repercussions. Although all operational commitments were being met, training had come to a virtual standstill.[9]

The Search and Rescue Wing was renamed No. 11 Squadron on 1 July 1948. The Catalina had become a significant maintenance burden. In a *Statement of Catalina Serviceability*, dated 12 May 1949, No. 11 Squadron verified this assertion. Hull corrosion was proving a major problem. For example on aircraft had been taken out of service for a 360-hour inspection. An unexpected amount of hull corrosion resulted in work being in progress for 14 months, yet still not completed. The report cited another example where another aircraft had been in the hands of the Department of Aircraft Production for over two years, and even when delivered to the squadron the radio and radar installation would have to be undertaken by squadron technicians.[10]

Despite knowledge dating back to 1947 that the maritime force was barely sustainable, no action was taken to modernise it until mid-1949. On 28 July a conference was held on the future of Catalina operations in the RAAF, the future of No.11 Squadron and the equipment of recently activated No.10 Squadron at Townsville. It was decided that action would be taken to ensure that the RAAF base at Pearce, Western Australia, was suitable for Lincoln operations, that ASV radar would be made available for the Lincoln aircraft, and air-borne lifeboats purchased. In addition No. 10 Squadron would be built up by posting crews and maintenance personnel from No. 11 Squadron. The latter unit would be reduced to a holding of

---

[8] For a full discussion on the organisation of the Interim Air Force see Stephens, *Going Solo,* pp 17-33.
[9] Search and Rescue Wing ORB, Appendix A, December 1947.
[10] *Statement of Catalina Serviceability No. 11 (GR) Squadron*, 12 May 1949, 1/501/603, CRS A1196/6, AA.

three Catalina amphibians and the policy of holding flying boats reviewed. One has the impression that Catalina operations would be of a temporary nature. The minutes implied that such a review would mean the demise of flying boats and noted that 'as Lincoln aircraft become available *and having regard to other requirements of the Service* [emphasis added] increase 10 Squadron strength to enable it to throw off a new squadron equipped with Lincolns which will take the number of 11 Squadron'.[11]

Although No. 10 Squadron was officially raised on 1 March 1949 it did not receive its first two Lincoln aircraft until 12 September. It had been planned that four aircraft would be on strength at that date but deliveries had not meet the expected schedule,[12] It was not until the end of the month that all four aircraft were received and not until June 1950 that the full establishment of eight Lincoln aircraft was filled.[13]

These aircraft were standard Mark 30 Lincolns fitted with H2S radar that had been developed to give an electronic image of the terrain over which the aircraft was flying and not designed for searching for ships and submarines. There is some doubt as to whether all the Lincolns finally delivered to No. 10 Squadron were so fitted. On 17 January, 16 May, 31 July and 7 August 1951 single aircraft were flown to No. 1 Aircraft Depot at Laverton Victoria for the fitting of H2S radar.[14] Therefore the maritime force was virtually at the same level of surveillance technology as the Anson squadrons of 1939 and its operational efficiency further restricted by the lack of spare parts for the aircraft. Both Nos. 10 and 11 Squadron reported a scarcity of Lincoln spare parts, tools and handling equipment. For No. 10 Squadron it took until July

[11] Wing Commander W.N. Gibson to CAS, 28 June 1949, 1/501/603, CRS A1196/6, AA.
[12] D.Ops to DCAS, 27 July 1947, ibid.
[13] No.10 Squadron, ORB, September 1949, June 1950, RHR.
[14] No. 10 Squadron, ORB, dates cited, RHR.

1950 for the commander, Flight Lieutenant N. McPhail, to be able to report that the 'spare parts position [had] improved considerably. As a result the squadron flew more hours than at any time since its formation'.[15] No. 11 Squadron had both its Lincolns grounded due to oil leaks when it moved to Pearce in November 1950 and it was not until 5 December that one aircraft was made serviceable.[16]

The records of the two maritime reconnaissance squadrons for the initial years of their existence indicate that the performance of the squadrons did not meet expectations. The first commander of No. 10 Squadron, Wing Commander W.L. Brill, recorded in March 1949 that 'the role [of the squadron] will be that of general reconnaissance, but at the same time, it will not be forgotten that the Lincoln is primarily an attacking aircraft'.[17] As the subsequent record of operations describe, these expectations were not met. No. 10 Squadron had assumed the RAAF commitment to Department of Civil Aviation and International Civil Airlines Organisation Search and Rescue (SAR) requirements. A Lincoln was based in Darwin to replace a Catalina aircraft from 1 July 1950 and the majority of the flights undertaken by Lincolns based at Darwin and Townsville were SAR in nature. It was not until 7 November 1950 that the first operational exercise is recorded - to Willis Island-Port Moresby-Ripley -Bougainville Reef-Garbutt.[18] Three months passed before the second operational training flight was made to Momote via Misima which 'including H2S bombing and photography'.[19] Flying Officer L.A. Evans flew a traditional maritime operation on 3 September 1951, when he was briefed to locate and shadow HMAS *Sydney* en route for service in Korea. Evans' sortie was

[15] No. 10 Squadron, Commanding Officer's Report, July 1950, RHR.
[16] No. 11 Squadron, ORB, 5 December 1950, RHR.
[17] No. 10 Squadron, Commander Officer's Report, March 1949, RHR.
[18] No. 10 Squadron, ORB, 9 November 1950, RHR.
[19] ibid., 10 February 1951, RHR.

unsuccessful due to the low cloud that prevailed over the area.[20] No. 10 Squadron's record is no better. The Squadron flew its first maritime reconnaissance sortie on 6 March 1951. Despite the assertion that 'valuable experience was gained' the attempt to intercept the Royal Indian Navy destroyer *Rajput* failed.[21] Success was achieved during 25 June 1951 when HMAS *Condamine* and HMAS *Labuan* were intercepted during a voyage from Albany to Adelaide.

In 1949 the weakness of the Lincoln Mk 30 in the maritime role was obvious and Air Staff Operational Requirement (OR/Air22) was issued in August that year for a more capable maritime patrol Lincoln. The requirement was met by modifying the basic design by adding a 6 foot 6 inch (1.98 metre) extension between the cockpit and the nose to accommodate a tactical navigator, three sonobuoy operaters and observation windows. A new automatic pilot was fitted and the bomb bay was capable of stowing two homing torpedoes, two racks of active sonobuoys and two jettisonable 188 imperial gallon (855 litre) long range fuel tanks. The radar was either ASV Mark 7 or Mark 7A.[22] The Lincoln Mark 31, when it entered service with No. 10 Squadron in March 1953 gave an illusion of modernity to the force. However the radar fitted was of World War II vintage and crews found it possible to fly within five kilometres of a ship the size of HMAS *Sydney* without any indication of its presence. The new crew positions were noisy and cramped and, to further add to the discomfort of the signallers and navigators, the new nose section leaked making the wearing of raincoats mandatory when operating in inclement weather.[23] The aircraft was

[20] ibid, 3 September 1951, RHR.
[21] No. 11 Squadron ORB, 6 March 1951, RHR.
[22] S. Wilson, *The Lincoln, Canberra and F-111 in Australian Service,* Aerospace Publications, Weston Creek, 1989, pp 30-9; Stephens, *Going Solo,* p 397.
[23] Stephens, *Going Solo,* p 398.

approximately of the same technical standard as a RAF Coastal Command Liberator of 1945.

A replacement for the Lincoln in the bombing and maritime role was a matter for concern. In the former role the type served as front line equipment until 1958 when No. 1 Squadron returned to Amberley from anti-terrorist operations in Malaya and re-equipped with the Canberra B 20 jet bomber.[24] Although negotiations for the replacement of the Lincoln in the maritime role were initiated in 1950, No. 10 Squadron operated the aircraft until June 1961.[25] On 28 March 1950 Air Marshal Jones wrote to the Minister for Air T.W. White to suggest that the British Avro Shackleton and the United States-sourced Lockheed Neptune be considered as replacements for the maritime Lincoln. The American aircraft was the preferred choice and it was intended to equip two squadrons with eight each of the type. Jones argued that Australia's current defence interest was in the Pacific and Indian oceans and that America would be 'the dominant ally'. To work effectively with American forces and to provide an adequate reconnaissance presence it was 'very desirable' that the RAAF should operate identical aircraft. The possibility of construction of the Neptune in Australia 'if New Zealand were to purchase the same type' was also raised.[26] Minister White agreed to the initiation of an informal approach and Jones wrote to the US Air Attache on 14 April 1950.[27]

On 25 February 1951 the Prime Minister, Robert Menzies, announced the order of twelve P2V-5 Neptune aircraft.[28] The first aircraft delivered arrived from the

[24] *Units of the Royal Australian Air Force, Volume 3*, p 5.
[25] *Units of the Royal Australian Air Force, Volume 4,* p 12.
[26] Jones to White, 28 March 1950, 1/501/610, CRS A1196/7, AA.
[27] Jones to US Air Attache, 14 April 1950, ibid.
[28] Wilson, *Catalina, Neptune and Orion in Australian Service,* p 93.

United States on 23 November 1951.[29] The final delivery flight of a P2V-5 to No.11 Squadron in February1953 marked a substantial increase in the maritime capability of the RAAF. The aircraft was fitted with AN/APS-20 search radar with a range of 370 kilometres, and AN/APS-31 attack radar of 45 kilometre range, AN/APN-4 Loran long-range navigation equipment and AN/APA-5 radar bombing equipment of greater accuracy than that fitted to the Lincoln Mk 31. Throughout its service life, the P2V-5 was modified to enhance its role. The front and rear gun turrets were removed and replaced by a glazed nose and Magnetic Anomaly Detection (MAD) equipment fitted in the distinctive 'sting' tail. Later modifications included the removal of the mid-upper turret, the fitting of underwing Westinghouse J34 turbojets, and the updating of electronic equipment and sonobuoys.[30] The radar capability of the Neptune was exhibited in February 1952 when Flight Lieutenant G.R. Cullen and his No.11 Squadron crew undertook a navigational and radar exercise using HMAS *Sydney* as a target. During the ten and a half hour sortie the APS 20 radar proved capable of maintaining contact with the carrier up to a range of 143 miles when flying at 10,000 feet.[31] The delivery of 12 of the similarly equipped but more modern P2V-7 variant to No. 10 Squadron at Townsville between March-June 1962 enabled to RAAF to operate an anti-submarine force compatible with current land based United States Navy maritime groups.

In parallel with the modernisation of anti-submarine aircraft and sensors the RAAF took action to improve the weapons carried. An undated memorandum (thought to have been drafted early in 1951) admitted that 'apart from the 250 lb

[29] No. 11 Squadron, ORB, 23 November 1951, RHR.
[30] Wilson, *Catalina, Neptune and Orion in Australian Service*, p 96; Stephens, *Going Solo,* p 401.
[31] No. 11 Squadron, ORB, February 1952, RHR.

Depth Charge Mk II [the RAAF] does not possess a weapon suitable for attack against underwater targets'.[32] Squadron Leader J.A. Austin at RAAF Headquarters Melbourne produced a paper on 12 January 1952 to assess the options available to meet RAAF Air Staff Requirement (ASR) Nos OR/ARM 15 and OR/ARM 16.[33] ASR OR/ARM 15 called for an airborne homing torpedo capable of attacking surface or underwater shipping. Due to the perception that the operational effectiveness of attacks on defended surface targets would depend on 'very skilful and accurate flying'; the proposal was weighed toward anti-submarine operations.[34] This requirement could not be met immediately, but was framed around the development of the British 'Pentane' and US Mark 34 homing torpedoes. Both were expected to be operational in 1956. In the interim ASR AR/ARM 16 called for the introduction of a homing torpedo in the 1952-53 time frame to 'enable training … and to provide an interim weapon' should the solution to the ASR OR/ARM 15 'not be available in an emergency'.[35]

The recommended interim solution was that 50 Mark 34 torpedoes be procured.[36] This weapon was a development of the Mark 24 homing torpedo that had been secretly evolved by the Bell Laboratories division of Western Electric Company and the Harvard Underwater Sound Laboratory and deployed successfully by a No. 86 Squadron Liberator and was credited with the sinking of U-456 on 12 May 1943.[37] The Mark 34 torpedo homed on submarine generated sound, attacked at a speed of 17 knots and was capable of operating to a 'crush' depth of 700 feet. An investment of

---

[32] 'Air Launched Torpedoes History', undated memorandum, 2/501/240, CRS A1196/6
[33] Squadron Leader J.A. Austin, Ops 7A, 'an appreciation on the operational requirements associated with the introduction of underwater homing weapons', 12 January 1952, ibid.
[34] RAAF Air Staff Requirement, OR/ARM 15, 16 July 1951, ibid.
[35] RAAF Air Staff Requirement, OR/ARM 16, 16 July 1951, ibid.
[36] Squadron Leader J.A. Austin, 'An appreciation on the operational requirements associated with the introduction of underwater homing weapons'.
[37] M. Gannon, *Black May: The Epic Story of the Allies Defeat of the German U-boats in May 1943,* Aurum Press, London, 1998, pps 340-6; J. Terraine, *Business in Great Waters: The U-Boat Wars 1916-1945,* Wordsworth Editions, Hertfordshire, 1999, p 618.

$US8, 000 for a single Mark 34 torpedo might be considered of dubious validity when it is considered that new submarines would be capable of a submerged speed of 25 knots and of diving to 1,000 feet. However the weapon was capable of countering current submarines types operating in the region. Moreover the acquisition of the weapon would give the RAAF the opportunity of undertaking realistic training in anti-submarine techniques.[38] The DCAS was convinced and on 8 July 1952 approved the purchase of 50 Mark 34 torpedoes from the United States at a cost of £280,000.[39]

The first opportunity for realistic training was when three No. 11 Squadron Neptune aircraft deployed from Pearce to Richmond to participate in the squadrons' first joint anti-submarine exercise on 16-21 February 1953. Two No. 10 Squadron Lincolns from Townsville also participated. The two RAAF units combined with nine RAN surface vessels, two submarines and 48 Naval aircraft. The Neptune aircraft flew 102 hours and 45 minutes in eight sorties, four of which entailed flights of over 14 hours; the longest was 15 hours and 15 minutes. The Neptune's' main role was the search for submarines, and in this they claimed to be responsible for 80% of all sightings. No submarine attacks were made on the surface force at sea while Neptune aircraft were airborne and the No. 11 Squadron commander reported after the first two sorties that the 'submarine commander requested their withdrawal from the exercise on the second night to give the submarines a chance of closing the convoy'. Although the results were credible, the reality was that no Neptune crew had any previous maritime training. That they had performed so well was due to the fact that the three crews had been given a concentrated single week course of lectures, demonstrations

[38] Squadron Leader J.A. Austin, 'An Appreciation on the operational requirements associated with the introduction of underwater homing weapons'.
[39] Overseas Indent, No.2896, 8 July 1952, 12/502/8, CRS A1196, AA.

and practical training with submarines and anti-submarine surface craft by the staff at the Australian Joint Anti-Submarine School at Nowra prior to the exercise.[40]

The origin of the Joint Anti-Submarine School dated back to 10 April 1947 when Air Vice Marshal Jones recommended to the Secretary, Department of Air, that an inter-service Air/Sea and Air/Land Committee be established and made responsible to the Chiefs of Staff Committee to 'formulate a joint policy on all matters relating to Air/Land and Air/Sea warfare [and to] investigate and make recommendations on matters arising from the implementation of the agreed policy'.[41] Late in April Shedden advised that the Defence Committee had agreed to the proposal and approved the establishment of a downgraded Joint Sea/Air Warfare Committee to formulate joint policy on 'all matters connected with the control of sea communications in which both the RAN and RAAF are concerned'. The Committee would make recommendations to the CAS and CNS (not the Chiefs of Staff Committee) on the subject.[42] After informal discussions between Naval and Air Staffs it was decided that the Committee would comprise of the following appointments:

Air	Navy
Deputy Chief of the Air Staff	Deputy Chief of the Naval Staff
Air Commodore (Operations)	Director of Air Organisation and Training
Director of Operations	Director of Training and Staff Requirements
Staff Officer Operations 2	Director of Operations Division

[40] No. 11 Squadron, Commanding Officer's Report, February 1953, RHR.
[41] Jones to Secretary, Department of Air, 10 April 1947, 12/502/8, CRS A1196, AA.
[42] Secretary, Department of Defence, to Secretary, Department of Air, April 1947, ibid.

Staff Officer Operations 6 DTSR Representative

The first meeting was scheduled for 10 May 1948. However the acting DCAS and DCNS agreed that the meeting be 'postponed indefinitely – anticipated approximately one month' due to 'pending changes in the Air Staff'.[43]

The most important recommendation made by the Sea/Air Warfare Committee to the Defence Committee in February 1951 was that the Australian Joint Anti-Submarine School (AJASS) training organisation be established at the Royal Australian Naval Air Station at Nowra, New South Wales. The proposed school was to be modelled on the British Joint Anti-Submarine School at Londonderry and its role was to give formal joint anti-submarine training, a function that was currently non-existent in Australia. The school would follow the British example by training ships and aircraft crews in anti-submarine operations, and Navy and Air Force officers in broader aspects of anti-submarine warfare and develop joint tactics. To meet the training requirement it was envisaged that three Joint Unit Training Courses (JUC) of five weeks' duration would be run annually. The JUC Course would conclude with a two week Joint Tactical Course (JTC) to instruct naval and air force officers in the tactical employment of air and sea assets in the anti-submarine environment (although the JTC could be run independently if required). The constitution of the staff reflected the combined nature of the school, with joint directors at the Wing Commander/ Commander rank level supported by two Lieutenant Commanders (or Lieutenants), a Squadron Leader/Flight Lieutenant and ten RAAF Other Ranks.[44]

The school was scheduled to open on 1 December 1951 with the first course

[43] File Note, Wing Commander Godsell, D. Ops, 13 May 1948, ibid.
[44] Sea/Air Warfare Committee (Australia) Minute 3/51, 22 February 1951; Defence Committee, Agendum No.173/1951, CRS A5799/15, AA.; Air Board Agendum No.11223, 8 March 1951, RHR.

due to commence early in 1952. As 'very few RAAF officers … have much knowledge of modern anti-submarine warfare', arrangements were made for the training staff to attend the Joint Anti-Submarine School at Londonderry from 7 May 1951. While in Britain it was planned that they would undertake a JTC, remain for two months to study the operation and organisation of the School and then selected officers would gain further experience at Headquarters Coastal Command.[45] The impact of the AJASS is obvious from the result of the exercise described above and its long-term affect cannot be underrated. It was instrumental in raising the standard of aerial anti-submarine operations in the Australian services. The school, renamed the Australian Joint Maritime Warfare Centre (AJMWC) in 1986, has been in operation for over four decades. As naval historian David Stevens has stated, the organisation has 'established an excellent professional reputation'.[46]

By the late 1950s the RAAF Neptune and Lincoln aircraft, combined with the air groups deployed aboard HMAS *Melbourne,* gave the Australian maritime force a distinct anti-submarine focus. Initially, the Air Force position on the role of its maritime force lacked clarity and direction. In *Air Staff Policy Memorandum Serial No. 4, Roles of Squadrons* dated 1 March 1948, the role of General Reconnaissance (GR) Squadrons was laid down in the following terms:

> The primary task of General Reconnaissance Squadrons are (sic) reconnaissance by day and night over sea or land to give warning of enemy activities which may presage an attack on our vital targets and to co-operate with naval, land and air forces in the protection of shipping and territory.
>
> Owing to the geography of Australia and its territories, it is apparent that the majority of the General Reconnaissance Squadron operations will be over the sea while it is based in this theatre but, as squadrons

[45] Air Board Agendum, No.11223.
[46] D. Stevens, 'Australian Maritime Aviation-a Strategic and Historical Context', D. Stevens, (ed) *Prospects for Maritime Aviation in the Twenty First Century,* Maritime Studies Program, Canberra, 1999, p 10.

> are organised on a mobile basis and may be required to operate under different geographical conditions, consideration must also be given to problems inherent in operations over large land areas.

The squadrons were to be capable of attacking low priority land and shipping targets in support of land and naval forces. To meet this requirement, the GR Squadrons could be expected to be capable of striking at these facilities 'in the same manner as, and in conjunction with, the striking force trained for this primary role'. Further roles expected of the GR Squadrons were that of air supply and aerial photography.[47] Given the nature of the above instruction it is not surprising that the early operational flights of No.10 Squadron Lincolns were more by nature of a strategic deterrent, not a maritime, role. Clear direction was a prerequisite for a defined maritime role for Nos. 10 and 11 Squadrons.

Although the lack of clarity is inexcusable, the memorandum is understandable in the context of the strategic thinking of the late 1940s. The spectacular success of one weapon, the atomic bomb, and the B-29 Superfortress that delivered it with such effect, resulted in the aerial doctrine of 'deterrence'. This was a concept that bomber forces would be capable of delivering massive destruction on any aggressor - so massive that aggression was unthinkable. The nexus between the writings of air power prophets like Douhet, the strategic bomber advocates such as Trenchard and Mitchell, the experience of wartime combat commanders epitomised by Air Marshal Sir Arthur Harris, Commander in Chief of RAF Bomber Command, and the American generals Curtis Le May and Carl Spaatz, combined with the advent of the atomic bomb, appeared to prove the inter-war theory of the war-winning potential of strategic bombing. A strategic bomber force now had the undeniable evidence of the effects of

the atomic bombs on Hiroshima and Nagasaki as proof of their ability to wreak unacceptable destruction on an aggressor state.

As will be noted later, the nuclear strategy of the major powers had its effect on the Australian maritime force. Overall nuclear strategy is beyond the scope of this dissertation, but a brief discussion is necessary to gain a perspective to the regional grouping that were central to Australia's defence posture. When the USAF gained its independence in 1947, the strong influence of the Second World War strategic bomber force commanders, such as Spaatz (the first Air Force commander) and Le May, ensured that Strategic Air Command (SAC) dominated strategic considerations. SAC was envisaged as the major deterrence to the use of the overwhelming numerical advantage that the USSR, and Eastern European allies, possessed by comparison to the conventional European-based western forces. This concept developed into the promise of 'massive retaliation' articulated by US Secretary of State, John Foster Dulles in January 1954, Mutually Assured Destruction (MAD) of the early 1960's and attempts to articulate a graduated response to Soviet aggression. The USN fast carrier groups of the Second World War had proved a significant, if not decisive, strategic weapon in the Pacific campaigns. The navy feared that its strategic role was diminishing, by comparison with the apparent dominance assumed by the USAF, in the 'cold war' nuclear scenario. This was one issue that generated bitter debate in the US Defence community.[48] The nuclear balance between the two super-powers and respective allies and the probability of unacceptable damage to the protagonists as a result of a nuclear exchange, made such a course of action an unacceptable option.

---

[47] Air Board Paper No. 908, *Air Staff Policy Memorandum Serial No.4, 'Roles of Squadrons'*, 1 March 1948, RHR.

[48] L. Freeman, 'The First Two Generations of Nuclear Strategists', P. Paret (ed), *Makers of Modern Strategy*, pp 735-78; Sir J. Slessor, *Strategy for the West, Cassell, London, 1954;* Baer, *One Hundred Years of Sea Power,* pp 275-366.

Deterrence of aggression was one aspect of international policy. The other was, as a result of the political constraints placed on the use of nuclear weapons, the 'containment' of communist expansion by conventional forces. To negate communist influence it was considered action must be taken to meet force with force. For example the Korean conflict of 1950-53, the United States support of the French position in Vietnam and subsequent involvement in that hapless country was validated as an anti-communist measure and essential to prevent any expansion of Marxist ideology. To 'contain' the menace of international communism, Australia became involved in a series of alliances and arrangements. The first of these was the 1948 Australia, New Zealand and Malaya (ANZAM) agreement where the defence planning staffs of Britain, Australia and New Zealand planned for the defence of the South-West Pacific Area. In 1951 discussions between Australia, New Zealand and the United States culminated in the ANZUS pact and the creation of the South East Asia Treaty Organisation (SEATO). In the ANZAM context, the RAAF deployed No.1 Lincoln Squadron and No.36 Transport Squadron to Singapore in 1950 to assist in meeting the threat of communist terrorists in Malaya.[49] This was a feature of Australian Defence policy for the period under study and the argument validating the Australian approach is stated in the *DefenceReport 1963*:

> Because of the increased strength which comes from mutual security arrangements on a regional basis, Australia participates actively in ANZUS, in SEATO, and in British Commonwealth arrangements for defence co-operation. Our partners include countries within the area and our major Western allies who share our concern for the security of South-East Asia and are committed to its defence. The provision by Australia of a site for the United States naval communications station at North-West Cape is a most important contribution by Australia to the mutual security purposes of the ANZUS pact. At present these various

[49] H. Donohue, *From Empire Defence to the Long Haul: Post-war defence policy and its impact on naval force structure planning 1945-1955,* Royal Australian Navy Maritime Studies Program, Canberra, 1996, pp 73-88.

> arrangements contribute to the security and stability of the countries which are more immediately threatened. Should the situation change, and Australia itself is directly threatened, these alliances would be of the utmost importance in maintaining the security of Australia and its territories.

The RAAF also played a role within the 'deterrence' framework. Between September and December 1949 the RAAF flew trials 'that explored the limits of strategic navigation and bombing'. Known as 'Operation Cumulative' it was undertaken by fourteen specially modified Lincoln bombers operated by No.82 Bomber Wing based at Amberley, Queensland. Ten aircraft, flying at one minute intervals, flew night sorties over distances of approximately 1750 nautical miles and made bombing runs using wartime H2S radar at the end of the flight. 'Cumulative' supplied data applicable to European conditions. Flights from Amberley to Kalgoorlie approximated flying from 'East Anglia over Berlin, Minsk, Moscow and Kazan' and that of flying to Darwin 'corresponded to a flight from East Anglia to Berlin, Budapest, Odessa and Ankara'.[50] The modification required (an extra crew station for an observer to check navigation, the fitting of a Mark 9 autopilot in place of the usual pneumatic Mark 8, a distance reading compass and a 400 gallon [1,818 litre] long-range fuel tank) for the 'Cumulative' role took priority over the reworking of the Mark 31 Lincolns for the maritime force.

Under ANZAM the RAN was committed to the proposition that, as the RN intended to withdraw from 'East of Suez' at the outbreak of a Europe centred war, it would be responsible for the protection of the protection of sea routes 'over a large proportion of three major oceans' and to convoy Australian land and air forces to the Middle East. Once this commitment was met, the RAN was expected to provide a

[50] Stephens, *Power Plus Attitude*, 1992, pp 108-9.

proportion of its strength (including the Carrier Task Group) for 'service elsewhere'.[51] Three months later the Defence Committee considered that the Soviet threat to sea communications would be attacks by long-range submarine that would use the traditional torpedo/gun attack on shipping at sea and the laying of mines at focal points.[52] The anti-submarine role was well suited to the Light Fleet Carrier and its embarked aircraft, but placed the Navy in a defensive role. The RAAF maritime reconnaissance force also shared this defensive charter. Plans drawn up in February 1951 for the deployment of a Mobile Task Force to the Middle East or Malaya illustrate this mind-set. The plan envisaged a squadron of eight Lincolns supplementing the three heavy bomber, two long range fighter and two transport squadrons - but these would be utilised only to 'patrol the maritime approaches' of Malaya.[53]

The Government statement of 10 April 1954 that 'assigned the responsibility for air protection at sea with[in] range of land-based aircraft to the Air Force' gave prospect to the expansion of the maritime force.[54] Planning for such an eventuality commenced at Air Force Headquarters and the DCAS was presented with a proposal to expand the force in the latter months of the 1954/55 financial year. Both squadrons would have their unit establishment of aircraft increased. No. 10 would be authorised to hold six Lincoln Mark 31 aircraft (an increase of one) and No. 11 Squadron would increase its strength from five to eight Neptune aircraft. In addition, both would hold two 'bomber' Lincolns to meet International Civil Aviation Organisation requirements. During the following year the No. 10 Squadron authorised strength

[51] Defence Committee, 29 November 1951, 1365/8, CRS A5954/60, AA.
[52] Defence Committee, 14 February 1952, ibid.
[53] Stephens, *Going Solo,* pp 32, 35.
[54] Air Board, Agendum No.12690, 8 October 1957, RHR.

would increase to eight aircraft and a No. 76 Maritime Wing would be activated at RAAF Base Richmond. This was to be followed by the establishment of No. 476 Maintenance Squadron and No. 3 (Maritime Reconnaissance) Operational Training Unit in 1956/1957. The inclusion of an operational training unit in the proposed organisation to enable the operational squadrons to concentrate on their prime role was a sensible innovation. Four Lincolns would be upgraded with radio and radar compatible with the equipment operated in the Neptune, and RAAF maritime bases provided with facilities and communications to enable the two squadrons to operate over 'all waters adjacent to Australia and its Territories'.[55]

Due to the 'reduction of financial allocations to the forces' in 1956, the maritime force was decreased. No. 11 Squadron's authorised strength fell to seven Neptune aircraft and that of No. 10 Squadron to five Lincoln aircraft and the raising of No. 76 Wing, No. 476 Maintenance Squadron and No. 3 Operational Training Unit, 'suspended'. However, all was not lost. The two 6-week Basic Maritime Courses of 133 ground training hours and 23 hours of air training that had been recommended in December 1954 went ahead.[56]

The RAAF continued to accumulate practical knowledge on anti-submarine operations and it appeared that the relationship between the two services at an operational and training level was satisfactory. For example, the RAAF Director of the AJASS reported that the Joint Tactical Course staged during April 1958 comprised of eight naval officers, nine air force officers and one scientific officer from the Department of Supply. The anti-submarine frigates HMAS *Quiberon,* HMAS

[55] Wing Commander R.B. Burrage, Acting DOSD, to DCAS, 7 December 1954, 15/501/351, CRS A1196/7, AA.; Mr Athol Townley, Minister for Air, to Sir Philip McBride, Minister for Defence, 16 July 1954, Air Board, Agendum No.12433, RHR.
[56] Department of Air, Administrative Instruction No. 6/56, 3 February 1956, 15/501/351, ibid, extracts from file 60/601/231, 24 September 1956, reproduced in Air Board Agendum 12433, RHR.

Quickmatch, HMNZS *Rotoiti* and a Neptune aircraft from No. 11 Squadron combined with an RAN Gannet to give an air/sea demonstration. Members of the course gained practical knowledge by serving in one or other of the protagonists - even the target submarine HMS *Telamachus.*[57]

In a paper prepared in Naval Headquarters in April 1959 this optimistic scenario was challenged. The Navy argued that the RAAF maritime force had lost its anti-shipping strike capability. This was acceptable as long as carrier borne naval aircraft 'were, to a large extent, responsible' for this role. However, as noted, the anti-submarine role had become paramount within the RAN. A Navy controlled maritime force, and a combination of RAN anti-submarine Wessex helicopters (ordered in 1958 to replace the Gannet in 1961) and RAAF Neptune aircraft, were identified as major requirements. Consequently the natural development would, the paper argued, be for the RAAF maritime force to be transferred to naval control. Without fixed wing aircraft aboard aircraft carriers:

> …. There will be no aircraft capable of distant support or reconnaissance in the Fleet.
>
> This gap must be filled by L[ong] R[ange] Maritime aircraft. Admittedly, these roles are now carried out by the RAAF, but it is not the same as having the necessary aircraft under direct control of the Navy.[58]

The thrust of the paper was for the retention of naval aviation and two sets of circumstances were considered that would affect the future structure of the Fleet Air Arm. First, the 'outline plan for 1962 onwards [would be] implemented', thus ensuring the future of carrier borne aircraft until 1970/75 and, secondly, that when the

[57] AJASS, Director's Report for April 1958, RHR.
[58] 'Assumption by RAN of RAAF Maritime Function', 23 April 1959, 5241/70/A, CRS MP1185/10, AA.

present aircraft in service reached their end-of-life in 1963, they would not be replaced. If this option became reality 'the existence of a naval shore based maritime aircraft force would be an excellent "buffer", and would ensure the continuance of naval aviation'. The RAN would require an increase of 240 naval aircrew and a 50% increase in the number of maintenance personnel to man the force. This, the paper conceded, 'would present severe difficulties in recruiting and manning' for the RAN. If the RAAF maritime force were ceded to naval control the aircrew structure of the FAA would vary. As there was no direct equivalent to the Air Force 'signaller' in the navy it would have to be introduced. Although the increase in manning levels would enhance career prospects within the RAN air service and domestic base support services, professional advancement to high rank for an airman in the navy could prove difficult. The navy has always expected its Chiefs of Naval Staff to be 'seamen' (the Chief of the Air Staff had always been a member of the 'pilots' club), and this tradition created:

> conflicting requirements for attaining the necessary skills and experience in both sea and air matters. Frequently there are insufficient billets for aviation sub-specialists to get to sea, and in many cases officers cannot be spared from aviation duties when sea appointments are available … Having proved himself sufficiently in aviation to gain a permanent commission [a junior officer] is frequently too inexperienced in seamanship to carry out sea duties commensurate with his seniority. However, the majority of such officers have been able to gain watchkeeping certificates, but it seems doubtful if any will ever achieve sufficient experience to merit consideration for promotion to the Post List.[59]

This statement implies that the Navy conceded that the long-range maritime force would be a specialised force and complementary to carrier borne anti-submarine and strike aircraft.

[59] ibid

On reflection, and despite a marginal comment by Director of Plans (D of P) on 1 August 1959 that the document was a 'good paper', there were no real grounds given for the RAAF to cede its maritime function to the Navy. The paper stated emphatically that the 'RAAF cannot be accused of neglecting the maritime aspect'. Many of the arguments outlined above are variations on the themes expounded in the 1930s when the RAN suggested that all General Reconnaissance squadrons should be placed under naval control. The statement that the timing of the proposal would be subject to the outcome of negotiations for the replacement of the Lincoln with P2V-7 Neptune aircraft and that there would be a considerable financial advantage to complete the take-over of RAAF maritime assets after the re-equipment process had been completed was ill considered and certainly did not enhance the Navy case. However, there was little likelihood that the RAAF would be a willing party to the handing over a newly upgraded multi-million dollar asset, including airfield and maintenance facilities, and accept the transfer of skilled technicians and aircrew to the Navy without a fight. From this view, the recommendation of D of P that 'this be kept "on ice" pending developments and reconsidered after decision on FAA immediate future' was sensible.[60]

During 1959 the Menzies Government announced that the FAA would be phased out over the next four years. This decision did not meet favour with Australia's major allies. On 30 November 1959 the First Sea Lord raised the matter of retaining HMAS *Melbourne* as an anti-submarine/commando carrier after 1963 with the CNS, Vice Admiral Sir Henry Burrell. The First Sea Lord also suggested a plan for RAN airmen to man RN Fleet Air Arm squadrons for service 'anywhere', for which service

[60] ibid.

the RN 'would provide naval air support to Australia if and when required'. Burrell was astute enough to note that the RN was facing acute manning problems related to the numbers of naval airmen available for service on its carriers east of Suez. The major disadvantage to the RAN was that the airman would be under Admiralty operational control and even the promise to base two squadrons (one of Sea Vixen all weather fighters and one of Buccaneer strike aircraft) at Nowra as a secure base outside 'troublesome' South East Asia could not overcome this lack of operational independence.[61] Burrell was therefore directed by the Minister for Defence, Athol Townley, on the recommendation of the Minister for the Navy, Mr J.G. Gorton, that he (Burrell) should respond that he was not empowered to conduct discussions and that the matter should be raised at a government-to-government level.[62]

Sir Howard Beale, the Australian Ambassador in Washington, was informally apprised of the disquiet felt by the Regional Planning Adviser Far East, United States State Department, of the decision to 'eliminate' the RAN air arm. The scenario provided by this office was that the United States would have to face the probability that the Soviet Union would increase military pressure 'in vulnerable areas like South-East Asia because they feel much more confident that the United States would not resort to the use of nuclear … weapons'. Thus the allies 'might be faced with a very serious situation in attempting to check military pressure, possibly covert, aimed at a number of different points'. The United States Navy 'was likely to be stretched to its limits' and it was 'unfortunate' that the RAN Fleet Air Arm would cease to exist 'at a time which could be one of maximum danger for the Allies in the Pacific'.[63]

---

[61] CNS to Minister for the Navy, 10 December 1959, 25/3/5, CRS A1945, AA.
[62] Gorton to Townley, 16 December 1959, ibid.
[63] Cablegram, Australian Embassy, Washington, 14 February 1960, ibid.

On 15 March 1960 Beale advised Menzies and Townley of his discussions with the United States Navy Chief of Operations, Admiral Arleigh Burke, at a private function. Burke was 'very friendly disposed towards Australia' and frankly discussed his personal view regarding the Australian carrier decision. He confirmed the earlier assertion that the forces of the United States were being stretched to the limit to meet their Pacific responsibilities, and envisaged an active role for RAN naval assets in a situation where a sudden enemy thrust would require the landing of a small force of troops to assist local authorities to meet such a threat. Burke hinted that this type of action did not require 'a very modern carrier or sophisticated aircraft'. He argued that there were strong reasons to retain a carrier to protect New Guinea and implied that 'an attack in this area was one of the situations in which there might be some delay before United States forces could be brought into operation …'[64] A RAN aerial presence in the Pacific was an issue on which Burke had positive views. As will be discussed later, he had discussions with Admiral Burrell earlier in the year during which he suggested the option of upgrading the capability of the RAN in this field.

There is no evidence that this pressure from the United Kingdom or the United States affected the decision made in November 1960 to modify HMAS *Melbourne* by July 1963 as an anti-submarine carrier flying Wessex helicopters.[65] As already noted the twelve P2V-7 version of the Neptune was delivered to No. 10 Squadron between March and June 1962 and the Wessex Mk 31 helicopters were delivered during the twelve-month period November 1962-November 1963. The anti-submarine force was modern, but the Navy and Air Force had, except for the debatable ability of Neptune

---

[64] Cablegram, Australian Embassy, Washington, 15 March 1960, ibid.

[65] Air Marshal F.W Scherger, CCOSC, to Minister for Defence, 13 September 1964, 244/3/64, CRS A1945/39, AA; J.T. Boutulier, 'Get big or get out: The Canadian and Australian Decisions to abandon aircraft carriers', T.R. Frame, J.V.P. Goldrick & P.D. Jones, *Reflections on the RAN,* p 397; Gillett, *Wings Across the Sea,* p 85; *Flying Stations,* pp 144-6.

crews to undertake low level bomb and rocket attacks on shipping (a task for which they did not train), the Australian maritime strike potential was infinitesimal. International developments in South East Asia and Indonesia were to illuminate the deficit with remarkable clarity.

On 24 May 1962 the Minister for Defence, Athol Townley, announced to the media that up to 30 Australian Army personnel would be sent to South Vietnam to instruct members of the Army of the Republic of South Vietnam in jungle fighting techniques, thus commencing a decade of Australian military involvement in South Vietnam.[66] Of more importance to the structure of Australian maritime force was the decision made in 1963 by President Sukarno of Indonesia to oppose the establishment of the Federation of Malaysia.

In June 1964 the Department of the Navy produced a document that assessed aerial requirements to meet the changing strategic situation. The paper identified the unpredictability of the current Indonesian regime and the combined potential of an increased Russian naval presence and Chinese naval capability as factors to give an urgent impetus to planning for an increase in RAN airborne capability. Soviet aid to Indonesia could include the transfer of submarines capable of firing missiles fitted with conventional warheads over a range 200-250 miles. Although the submarine threat was considered to be the major threat to Australia's SEATO naval obligation, Indonesian reconnaissance and strikes by Soviet built Tu-16 'Beagle' aircraft fitted with 'Kennel' air to surface missiles with a range of 50 miles and twelve 'surface missile firing craft' could not be discounted. The aircraft were capable of launching surface-to-surface missiles at a range of 15-20 miles, well outside the 17-mile range of

[66] G. St J. Barclay, *A Very Small Insurance Policy: The Politics of Australian involvement in Vietnam 1954-1967,* University of Queensland Press, St Lucia, 1988, p 31.

the Tartar anti-aircraft missile and five-inch guns on the *Charles F. Adams* DDGs that were to be commissioned in 1965. There is some truth in the statement that in 1963 the RAN was 'out-numbered, out-gunned, out-ranged and generally out-sped by the Indonesians'.[67]

The RAN had little faith in the ability of the RAAF to provide fighter aircraft to protect the fleet and the decision taken on 26 November 1962 to pass the responsibility for the aerial protection of naval and commercial shipping to the RAAF was not well received by the RAN. As the current CNS wrote:

> The crux of the whole matter rested with the falsity of the assertion that the RAAF could maintain the security of our sea communications, particularly from bomber attack, while ships and convoys are within range of land-based aircraft.[68]

This concern manifested itself in the paper's assertion that 'without fighter aircraft the RAN would be precluded from operating with any degree of safety in Northern Australian and New Guinea waters' even with the introduction of the *Charles F. Adams* class of guided missile destroyer. The solution proposed was ambitious - the procurement of 28 F-4B Phantom fighters, 24 S2E Tracker anti submarine aircraft, E1B Tracer airborne early warning aircraft and a 'modern fast aircraft carrier in 1968 or as soon as possible thereafter'.[69] The carrier requirement would be met by the modification of an *Essex* class aircraft carrier to the same standard as a later *Oriskany* class (also known as the improved *Essex*) at a cost of $58.1 Million. The *Oriskany* had a standard displacement of 33,100 tons, could carry up to 70 aircraft and had accommodation for 340 officers and 2,950 ratings (including a complement of 100

---

[67] 'A Replacement Aircraft Carrier and Fixed Wing Aircraft for the RAN', 30 June 1964, 244/3/64, CRS A1945/39, AA.
[68] Vice Admiral Sir H. Burrell, *Mermaids Do Exist: The Autobiography of Vice Admiral Sir Henry Burrell,* Macmillan, Melbourne, 1986, p 250.
[69] 'A Replacement Aircraft Carrier and Fixed Wing Aircraft for the RAN', ibid.

officers and 1,890 ratings).[70] This solution was not new. The CNS, Vice Admiral Burrell, visited the USN Chief of Naval Operations, Admiral Arleigh Burke, in Washington during February 1960 and was 'offered a straight-decked *Essex* class carrier, with the proviso that any alterations, such as the angled deck, landing mirror and catapult, be paid for by Australia'. Burrell asserts that he was under instruction not to broach the subject of carriers and 'could only express [his] appreciation for the offer and change the subject to surface-to-air guided missiles'.[71]

Burrell's apparent disinterest in the replacement aircraft carrier was to some extent shared by his Minister, F.C. Chaney. Chaney forwarded the Navy proposal to the minister for defence, Senator Shane Paltridge, on 1 July 1964. He suggested to Paltridge that an 'alternative course of action would be to re-equip HMAS *Melbourne*'s anti-submarine units with Tracker aircraft, modernisation of the carrier in 1966 as planned' and 'consider, at the same time or as soon as possible … the requirement stated by the Naval Staff for a new carrier with modern strike/fighter aircraft for later acquisition'.[72]

The Chairman, Chiefs of Staff Committee (COSC), Air Chief Marshal Sir Frederick Scherger, wrote to Paltridge on 8 July recording his doubts on the navy proposal for an *Oriskany* class carrier and associated aircraft. He questioned the efficacy of converting a 25-year old ship, the cost of approximately $150 Million that would be required for the acquisition of Phantoms and the increase of naval manpower by 5100 over four years. To Scherger it appeared more logical to develop the submarine service as an offensive arm.[73] He also had what proved to be valid

[70] R.V.B. Blackman, *Jane's Fighting Ships 1963-64*, Sampson Low, London, 1963, p 316.
[71] Burrel, *Mermaids Do Exist*, p 256
[72] Chaney to Paltridge, 1 July 1964, 244/3/64, CRS A1945/9, AA.
[73] Scherger to Paltridge, 8 July 1964, ibid.

doubts regarding the operational ability of the carrier to operate Phantoms. He instigated an approach to the Office of the Naval Attache at the United States Embassy to advise him regarding his concern. On 31 July the Naval Attache responded to Scherger that it was possible to operate a Phantom on a converted *Essex* as 'a ready deck interceptor'. However, under certain conditions (nil wind, a temperature of 90 degrees Fahrenheit and using a C-II catapult) it would not be feasible to operated a Phantom in attack configuration with an 'all-up-weight' of 54 800 pounds. To enable attack operations from the carrier the aircraft would have to be modified by extending the nose strut of the undercarriage and fitting drooped ailerons, while the ship would require to be fitted with a C-7 catapult.[74]

Scherger and the three service chiefs - Air Marshal Sir Valston Hancock (CAS), Vice Admiral Sir Hastings Harrington (CNS) Lieutenant General Sir John Wilton (CGS) - considered the Navy proposal on 19 August 1964. The CAS and CGS were of the opinion that there was no strategic requirement for a strike carrier, arguing that Australian military forces would only be deployed to South East Asia if the 'United States is involved and dominant in this area'. Independent naval operations in defence of Australia and its territories would be within range of land-based aircraft. The CAS and CGS agreed that the Navy should increase its ASW capability by addressing the 'deficiency of nine escorts and submarines … [that] would provide a more acceptable contribution to allied sea power than a strike carrier'. Predictably, Harrington dissented to the Committee's conclusion.[75] Scherger wrote to Paltridge on

[74] US Naval Attache to Scherger, 31 July 1964, ibid.
[75] COSC, Minute No.92/64, 19 August 1964, ibid.

1 September in 'support of the views of the CAS and CGS'[76] and the Minister acceded to the majority view a week later.

As so often happened, the current Australian domestic maritime aviation debate duplicated that being pursued in Great Britain between the RAF and RN. In the same time frame the RN was seeking authority to replace its five strike carriers with new large carriers by 1980.[77] During 1962 the British Minister for Defence, Peter Thornycroft, appointed a committee of scientists under the chairmanship of Dr J.S. Kendrew, a member of the scientific staff in the Ministry of Defence, to report on the RN carrier replacement programme. The committee report 'came down in favour of the new carrier program'[78] Essentially the Kendrew Committee identified that the future of aircraft carriers in the RN was linked with the need for the United Kingdom to project force into areas of tension and compared RN and RAF plans to meet this requirement. The RAF solution to the problem hinged around the maintenance of a series of bases within a radius of 1000 miles of possible areas of operations. In the Australian area of interest bases at 'Aldabra, Masirah, Cocos, Butterworth, Manila and Darwin, together with staging posts at Ascension and Gan' from which transport, close support and air supremacy missions would be flown, were the key. The RN planned to provide a task force centred on two aircraft carriers and associated ships available for duty east of Suez. Both plans were predicated to meet three scenarios - unopposed intervention; low or moderate opposition to intervention, and intervention countered by strong enemy opposition. Like the RN, the RAN considered that the third option was beyond its capacity. In the first instance, even if the insertion of

[76] CCOSC to Minister for Defence, 1 September 1964, ibid.
[77] For details see Grove, *Vanguard to Trident*, p 255.
[78] Ibid, p 257; AVM G.C. Hartnell, Head, Australian Joint Services Staff, to Secretary, Department of Defence, *Report of Enquiry into Carrier Task Forces*, 22 September,1964.

troops were by sea, a carrier would not be required. The solution to the operational problems related to the second scenario was associated with geography, capability of the enemy and the government's assessment of an acceptable military risk linked to the political or strategic importance of the operation.[79] The Head, Australian Joint Services Staff in London, Air Vice Marshal G.C. Hartnell, in a letter to E.W. Hicks, Secretary, Department of Defence, identified another cause for concern regarding future RAN carrier operations. Hartnell had obtained information on a 'rather discreet basis' that 'the life of present day carriers against the sort of submarine that even the relatively unsophisticated nations might operate within the next ten years would be … a "one in ten" chance of a carrier being lost within twenty-four hours of operation even when escorted with twenty modern ships'[80]

The RAN had retained a modern anti-submarine capability and also, with the replacement of the Sea Venom with the McDonald Douglas A4 Skyhawk, gained an aircraft of greater strike potential. Scherger was troubled by the cost of Navy plans to purchase 24 Tracker and 18 Skyhawk aircraft. The total cost of $43 million was in his opinion 'an excessive price to pay to see out the remaining ten years of *Melbourne's* life, and to retain naval aviation'. To decrease the cost to $25 million, Scherger suggested that numbers of Tracker and Skyhawk aircraft be reduced to 14 and 10 respectively. HMAS *Melbourne* would then embark various combinations of Wessex, Tracker and Skyhawk aircraft in combinations of 12-6-4 or 10-6-6. [81] This would enable the RAN to undertake ASW operations in the manner favoured in their paper of 30 June 1964 - Long Range Maritime Patrol aircraft (presumably operated by the

[79] *Report of Enquiry into Carrier Task Forces.*
[80] Hartnell to Hicks, 3 September 1964, 244/3/64, CRS A1945/39, AA.
[81] Scherger to Paltridge, 13 September 1964, 244/3/64, CRS A1945/39, AA.

RAAF) flying 70/80 miles in advance of a convoy, ship borne ASW aircraft between 15 - 70miles ahead, helicopters operating out to ten miles and surface escorts supplying the close in ASW screen. Air defence from the Skyhawk complement would augment such a defence in depth.[82] This was not the ideal Navy solution, but even this compromise had its detractors. The Secretary, Sir Edwin Hicks, in a paper to Paltridge on 4 November 1964 assessed the capability of HMAS *Melbourne* in the current 'confrontation' climate. As the Indonesian Armed Services were equipped with Russian built IL-28 'Badger' bombers he argued that this 'greatly reduced the deterrent effect of a strike carrier of the *Melbourne* … type' and remarked that:

> This is not of course to suggest that *Melbourne* equipped with [the] Skyhawk would have no value in other roles eg anti-submarine, anti-ship and in providing limited air defence of a convoy.[83]

The prospects for an offensive role for the naval air arm were not heartening. Scherger's influence may be seen in the decision made in October 1964 to purchase 14 Tracker and ten Skyhawk aircraft (eight single seat A4-G and two TA-4G twin seat trainers).

The changing international situation also gave the RAAF the opportunity to press for replacement of its aging Canberra bombers in 1963. The new aircraft would be required to attack enemy targets by day or night with air to surface missiles or high explosive bombs. In addition the aircraft would be required to have the capability of undertaking photographic, radar and other electronic reconnaissance missions and be able to accomplish electronic countermeasures missions. The specification called for the aircraft to be capable of 'delivering special [a euphemism for atomic] weapons'.[84]

---

[82] *A Replacement Aircraft Carrier and Fixed Wing Aircraft for the RAN.*
[83] Hicks to Paltridge, 4 November 1964, ibid.
[84] Air Board, Agenda No.13017, 22 August 1963, RHR.

The aircraft finally selected and belatedly delivered (the General Dynamics F-111C) did give the Air Force a potent maritime strike potential, but the initial acquisition was predicated on the theory of 'deterrence' rather than any maritime strategy. It was not until 1971 that serious consideration was given to the use of the Australian F-111C in the maritime strike role. During November of that year Prime Minister William McMahon was advised by the United States Defence Secretary, Melvin Laird, that the United States Air Force were considering the use of the F-111 in naval support operations in the Mediterranean Sea. The Chairman of the Chiefs of Staff Committee, Admiral Sir Victor Smith, was attracted to the proposition, and requested that the CAS, Sir Colin Hannah, investigate the matter. Hannah's advice was that the F-111C, due to its speed, range, powerful radar and all weather strike capability was a very effective maritime strike aircraft. Alan Stephens has argued that:

> Those characteristics made it possible for Australian defence chiefs to substitute air power for sea power in maritime operations, although the absence of guided weapons was a significant handicap. Until the Harpoon anti-shipping missile was fitted to the F-111Cs in the late 1980's as yet another unique RAAF modification, iron bombs remained the standard maritime strike weapon.[85]

These developments were some years in the future. In the meantime the existing maritime force was under threat. Ironically, it was due to the introduction of the Canberra replacement. In 1963 the RAAF considered that the older P2E Neptune was 'of limited value against modern conventional submarines' and that the 'reduction' of No. 11 Squadron would create a pool of technical tradesmen that would be of 'great assistance' in meeting manpower requirements for the introduction of the Canberra replacement.[86] Three years later the 'uncertain and deteriorating political situation in

[85] Stephens, *Going Solo,* p 392.
[86] Air Board, Agenda No. 13046, 10 April 1964, RHR.

the countries immediately to [Australia's] north and in SE Asia…highlighted the need of a reappraisal of Australia's ability to secure her sea lanes of communications'. The lack of action on the suggestion that No. 11 Squadron be disbanded was fortuitous. The P2E Neptune was uneconomic and the longer range and superior performance of the P-3A Orion would bring more modern sensors to enable shipping to be protected in areas outside the range of the Neptune. Further it was considered 'prudent' to bring forward the introduction of the Orion to 1967 to fill the gap left by the 'half life' refit of HMAS *Melbourne* scheduled for the same period.[87] This schedule was not met. No. 11 Squadron took delivery of its first Orion (the P-3B had been ordered in lieu of the P-3A) on 10 January 1968, but delivery of the total number was delayed due to an investigation into the loss of an aircraft at Moffett Naval Base, California, on 11 April 1968. The first of the aircraft did not arrive in Australia until August.[88] HMAS *Melbourne* was in dockyard hands from December 1967 until November 1968, leaving the aerial anti-submarine task to the remaining No. 10 Squadron P2H Neptune aircraft and the disembarked Navy S2E Trackers that had been delivered to the Naval Air Station at Nowra during November 1967.[89] The days of the former aircraft were numbered. On 19 March 1971 the Air Board endorsed Air Force Staff Requirement 120/72 for the replacement of the SP2H Neptune which resulted in the acquisition of ten P-3C Update II Orion aircraft. The first of these aircraft were delivered during February 1978.

During March 1971 the Air Board endorsed and established priorities for the tasks to be undertaken by the Long Range Maritime Reconnaissance force. The first

[87] Air Board, Agenda No.13124, 20 August 1964, RHR.
[88] Wilson, *Catalina, Neptune and Orion in Australian Service,* pp 144-55.
[89] Gillett, *Wings Across the Sea*, p 87.

was the location and destruction of enemy submarines 'in isolation from, or in co-operation with, friendly surface, sub-surface and air units' followed by the provision of tactical (and appropriate intelligence in Australia's area of responsibility), mine laying and, lastly, 'while carrying out any of the above roles, the destruction of any lightly armed enemy surface vessels which might be encountered operating outside an air defence environment'.[90]

The Air Board stance was partially vindicated by the results of a major study undertaken by the Department for Defence Central Studies Establishment. The personnel involved made up a team that, in the view of Air Marshal David Evans, could not have been 'more professional or a more impartial group'.[91] Known as the 'Naval Air Power Studies/Tactical Air Weapons System Studies' team, it commenced its consideration in 1972 and met for three years. According to Evans scientists and servicemen involved studied various scenarios and assessed the force structures that would be required to meet them in great detail with the aim to:

> … establish the most cost-effective force structures capable of meeting the requirements of the various scenario groupings, and also whether different groupings of scenarios [low level, medium or high] would require a major shift in force structure or just more of the same.

The result was 'surprisingly clear'. Land-based air power emerged as the most cost effective solution to meet the scenarios studied and the only role for ship-borne aircraft was the use of helicopters in the anti-submarine role. In this role helicopters could be 'carried on frigates or destroyers - or even a fleet replenishment ship'.[92] Without access to the report, it is difficult to assess the importance or credibility of this study. Evans asserts that 'argument … raged on with the Navy fighting a strong

---

[90] Air Force Requirement 120/72 (sic) for a Maritime Aircraft to replace the SP2H Neptune, March 1971, p 1, RHR.
[91] Air Marshal D. Evans, *A Fatal Rivalry: Australia's Defence at Risk,* Macmillan, Melbourne, 1990, p 103; Wright, *Australian Carrier Decisions,* p 165.

rearguard action. The Navy's arguments had little substance, but they were effective enough to intimidate the Defence Department and the government of the day' and, as a result, the report, 'one of the best force structure studies conducted anywhere in the world until that time never formally saw the light of day'.[93]

RAN pressure coincided with a period of deteriorating long-term strategic prospects for Australia. The Soviet naval presence in the Indian Ocean and the occupation of Afghanistan placed Soviet influence within 500 kilometres of the Straits of Hormuz. Therefore, the potential to use force to sever the Western oil route in the Persian Gulf, was uncomfortable and Prime Minister Malcolm Fraser called for greater allocation of resources for defence purposes. In June 1977 the DFDC approved a one million dollar design investigation for a Short Take-off and Vertical Landing (STOVL) and helicopter carrier. The Defence Minister, D.J. Killen, approved the worldwide distribution of an invitation to register interest to assist in the investigation.[94] By August 1979 the choice had been confined to three: a Sea Control Ship similar to one being built for the Spanish Navy, a modified *Iwo Jima* Class and a variant of the Italian *Giuseppe Garibaldi* Class. The decision to procure a purpose-designed carrier was announced by Killen on 20 August 1980, but the actual carrier was to be equipped with anti-submarine helicopters and a decision on STOVL aircraft would not be made until 1983. This was not wholly to the Navy's liking. Naval historian David Stevens comments that:

> The breaking of the link between the carrier and the strike/air defence capability left the RAN in a far weaker position. While reducing the cost of acquisition it also reduced the justification. The navy was already acquiring helicopter-capable frigates, and most recently *Melbourne*'s utility had been manifested in her fighter-bombers and

[92] Evans, *A Fatal Rivalry*, p 103
[93] ibid, p 104.
[94] *Flying Stations,* p 240; D. Stevens, (ed), *The Royal Australian Navy,* Oxford University Press, Melbourne, 2001, pp 225-6.

> fixed-wing ASW aircraft. Subsequent criticism tended to focus on the question of whether the ASW capability being achieved was worth the cost.[95]

With an estimated project commitment of one billion dollars, the cost was high.[96] Then, on 31 July 1981 the British government advised Australia that HMS *Invincible* would be declared surplus to requirements when her sister ship, HMS *Ark Royal,* was completed. Although the relatively high cost of the British carrier had been the cause for rejection of the design in the initial assessment stage that finalised on the three designs mentioned above, the economics of the purchase of a second-hand carrier appeared attractive. At a project cost of $481 million, there was considerable saving when compared to the alternatives. Despite RAAF objection in the DFDC to the procurement of the carrier, Killen made the announcement on 25 February 1982 that the government had decided to acquire the *Invincible.*[97]

Events beyond the control of the Australian Government and the RAN intervened to ensure that *Invincible* did not serve in Australian colours. On 2 April 1982 Argentine forces invaded the Falkland Islands, and the British government deployed a task force to reimpose British rule over the dependency. As a result the decision to purchase HMS *Invincible* was reversed. The offer of HMS *Hermes* as an alternative was refused due to its age (23-years) and heavy manpower demands.[98] On 14 March 1982 the decision was announced that HMAS *Melbourne* would not be replaced.

Although naval airmen still aspire to operating from a purpose built seaborne aircraft platform, developments within the Air Force appear to indicate that this aspect

---

[95] Stevens, *Royal Australian Navy*, pp 226-7.
[96] *Flying Stations*, p 250.
[97] Stevens, *Royal Australian Navy*, p 227.
[98] Stevens, *Royal Australian Navy,* p 228; Evans, *A Fatal Rivalry,* pp 108-9.

of maritime operations may be a matter of record for the RAN. In December 1987 the base at Tindal, near Katherine in the Northern Territory, became the home of the first contingent of Air Force personnel to prepare for the arrival of the F/A-18 fighters of No. 75 Squadron. Airfields have been constructed at Scherger on Cape York Peninsula and at Derby and Learmonth in Western Australia. These enable the Air Force to project air power over the maritime approaches to Northern Australia. Operating from these bases, harpoon missile equipped F-111C, F/A-18 and Orion aircraft are potent anti-shipping, reconnaissance and strike asset. The surveillance capability of the new OTHR system and the force multiplication of the B707 tankers have made a profound impact on the ability of commanders to deploy aerial forces to best effect. Later, with the introduction of new AEW aircraft, the ability to control both naval and air forces in complete concert will further enhance the capacity of both services to operate with cohesion and efficiency.

The Australian experience of operating maritime forces has been conditioned by the parochialism of the services, a subservience to ‘great and powerful friends’ and the lack of suitable equipment to undertake operations to fulfil a well-defined policy and tradition related to Australian aerial maritime operations.

10

CONCLUSION

A constant theme in the history of the RAAF between 1921 and 1939 was the struggle to retain its integrity. One facet of the contest was the recurrent administrative struggle between the RAAF and RAN for the control of aerial assets dedicated to ship-borne and land-based maritime operations. The influence of the RAAF commander, Williams, was critical in retaining the cohesion of the RAAF as a single service. His political acumen and his astute use of advice from Royal Air Force air power advocates such as Marshals of the Royal Air Force Lord Trenchard, Sir John Salmond and, to a lesser degree, Sir Edward Ellington, ensured the independence of the RAAF. Williams was a practical, political, man, not an air power theorist. His 1926 correspondence with Trenchard, with its political implications, sought the involvement of the RAF CAS to influence Australian government decision-making. This correspondence proves that the Australian air force chief identified that the source of authoritative (possibly irrefutable) advice on any air force policy matter resided in the United Kingdom.

Similarly, the RAN professional head in the formative years prior to the outbreak of the Second World War was, with the exception of Rear Admiral W.C. Creswell (1911-1919), always a RN officer,[1] and it is not inconsistent that the RAN eschewed advice from other sources. It is not surprising that the RAAF, too, derived its intellectual stance from the United Kingdom, and the maritime policy enunciated

[1] Stevens (ed), *The Royal Australian Navy*, p 310

in 1935 was similar to the current RAF position on the subject. This alignment resulted in decisions being made in Australia that mirrored those made in the United Kingdom. The determination on the control of the RN Fleet Air Arm was reflected in a similar arrangement between the RAAF and RAN. The August 1938 proposal to gain operational control of the land-based maritime force by the RAN reflects the inter-service arrangement in the United Kingdom where Coastal Command seaward reconnaissance aircraft were placed under the operational control of the Admiralty, but failed due to the RAN not comprehending that the limited number of aircraft that comprised the RAAF striking force was required to fulfil more than a maritime reconnaissance role, and that the RAAF operational organisation, based on command by geographical bases, was limited in capability and did not follow the RAF functional command structure. The RAN was also unaware of the coincident pressure being exerted by the RAF on the RAAF for Australian squadrons to be deployed to Singapore.

The emotional link to the United Kingdom was posited in a belief in the Empire and on the concept of Empire defence. Developing the naval base at Singapore and the subsequent deployment of a battle fleet would, it was argued, deter Japanese expansionist ambitions. Although Australian authorities were not fully convinced that the RN was capable of implementing the 'Main Fleet to Singapore' policy and reinforce Singapore in the event of conflict in both Europe and Asia, two general reconnaissance squadrons and two fighter squadrons were ultimately deployed to replace RAF units as a substitute for the lack of a RN presence.

Operations from NWA were initially effected by the 'Singapore Strategy' and then by the requirement of squadrons based in the area to support the main Allied axis of advance though New Guinea, Netherlands East Indies to the Philippines. NWA was the only operational area under a RAAF commander, but suffered due to the lack of heavy bombers and long-range single-engine fighters. Although the USAAF 380th Bombardment Group gave the NWA a long-range heavy bomber capability, its use was constrained by the requirement to get approval from General Kenney for specific operations. American strategy was focussed on landing in the Philippines in 1944, and operational priorities were designed to support this thrust.

Despite these restrictions, the RAAF commanders - Bladin, Cole and Charlesworth - undertook a policy of aggressive maritime operations that dominated the sea and islands within range of their medium and heavy bombers. Cole and Charlesworth advocated a plan for territorial expansion that would extend the range of the bomber force and give a strategic flavour to operations from NWA. Within the restrictions applied to them, the RAAF NWA commanders fought a successful maritime campaign. The planning undertaken to expand its scope would have gained further credibility when (if the dropping of the atomic bombs on Hiroshima and Nagasaki had not forced the issue) the campaign to recover the NEI was mounted.

Bladin, Cole and Charlesworth would have approved of the Australian led campaign to insert a UN peacekeeping force into East Timor 54-years later. The success of Operation *Warden* vindicated the maritime campaign that was fought by the RAAF NWA wartime commanders, featuring many of the issues faced in the 1944 plan to establish air bases in the area. Army units were air transported into Dili,

RAN frigates gave (with the assistance of RAAF maritime patrol aircraft) anti-submarine protection to the naval transport force, and also supplied first line air protection that could be quickly augmented by RAAF fighters operating from Tindal or Darwin, to the naval and ground forces. Photographic reconnaissance and electronic surveillance, using much more sophisticated equipment and techniques than the rudimentary equipment fitted to certain No. 12 Squadron Liberators, was undertaken. The intention of both plans was to dominate the maritime approaches and to deter any enemy reaction against the forces employed.

When war was declared in September 1939 the RAAF had conceived a cogent maritime operational policy. However, it lacked both the manpower and equipment to ensure its implementation. The emphasis placed on producing aircrew for service with the RAF in Europe under the Empire Air Training Scheme, and the deployment of units to bolster Singapore, confirmed the priority being given to Empire defence. Four Australian squadrons were deployed to Singapore and the Hudson aircraft that equipped the units ultimately deployed to NWA prior to the outbreak of war with Japan in December 1941, Nos 2 and 13 Squadrons, operated from advanced airfields to protect the Netherlands East Indies and the supply line to Singapore. No. 12 at Darwin flew Wirraway training aircraft that proved ineffective in an operational role. The most modern aircraft in service were deployed overseas. The proposal to fill the capability gap in Australia by raising reserve squadrons as strike units, based on various training units, was a gesture only. These units were to fly obsolete Anson and Battle aircraft to counter possible enemy naval forces raiding the Australian coastline. Such a proposition reflected the current underestimation of the aerial capability of the

Japanese navy, and the attacking ability of partially trained crews flying obsolete aircraft against any naval incursion, must be questioned.

There is no doubt that the RAAF anti-submarine campaign and torpedo bomber operation was a failure. Contributing factors that resulted in the lack of success include the lack of clear direction and leadership by the RAAF's most senior officers. The CAS, Air Vice Marshals Jones, and the AOC RAAF Command, Air Vice Marshal Bostock, fought an acerbic paper war that involved all aspects of RAAF operations. Jones considered Bostock as a threat to the office of the CAS. To Jones, the CAS commanded the RAAF and, as the senior RAAF officer, he did not accept Bostocks' authority as its operational commander. This is not the venue for discussion of the merit of individual argument. In the text mention has been made of the problems created by the appointment of Flight Lieutenant G. Miedecke to the Anti-Submarine Division in Navy Headquarters. The divergence between Jones and Bostock regarding individual concepts of their roles meant that it was impossible to develop the centralised command structure that the anti-submarine campaign required.

The relationship between the RAAF and RAN was effective at the combined headquarters level in the geographic areas. However, the system of communication between the two services of operational intelligence information resulted in it being so out-dated that it was of little operational value. RAAF anti-submarine operational concepts, influenced by the RAF Coastal Command policy of interdicting U-boats en route to the convoy area and aggressive patrolling in the vicinity (but not necessarily

in sight of) a convoy, required accurate and timely intelligence input on the movement of enemy submarines to be effective.

The low priority assigned to anti-submarine operations was reflected in the quantity and type of aircraft that were allocated to the role. The Anson was widely used, but, when fitted with ASV radar, had negligible strike capacity. Attempts to augment the capability of the force, by tasking training units to accept operational tasks, failed. RAAF Command and RAAF Headquarters had a differing perception on the role of the squadrons allocated for anti-submarine duties. RAAF Command envisaged crews gaining flying experience then proceeding to combat, where RAAF Headquarters posted personnel to the squadrons to maintain flying proficiency prior to further training at an operational training unit. This conflict had, in the last year of the war, a detrimental effect on the manning, training and operational effectiveness of the squadrons.

The torpedo-bomber squadrons also suffered from a lack of definition of their prime role, and this was one reason for their operational failure. They were seen as a counter against possible raids by enemy naval forces, and the original deployment of No. 100 Squadron was to meet the specific threat of night incursions into Milne Bay and the nocturnal shelling of the area fitted this scenario. Subsequent squadron operations, prioritised toward army support tasks, convoy escorts and maritime surveillance, were not contusive to the retention of expertise in the torpedo-bomber role. The AOC of No. 9 Operational Group RAAF must share the blame for this degradation of operational proficiency. He was conscious of proving the overall operational effectiveness of his force to his USAAF commander. Such an attitude

explains the operational employment of the two Beaufort torpedo bomber squadrons deployed to New Guinea. Although they served together, the two squadrons never operated as a combined torpedo-bomber strike force. The operational mode of the Beaufort squadrons reflected the lack of suitable maritime targets and the supporting role into which Australian forces in general had been assigned. By increased sortie rates, the commander of 9 Operational Group aimed at ensuring that his units would gain status with his superior commanders and thus not be relegated to minor operations in support of main USAF operations.

Another reason for the lack of credibility of the RAAF torpedo-bomber strike force was the failure of the torpedo. The unreliability of the American MkXIII torpedo resulted in commanders losing faith in the weapon. Similarly, the squadrons dedicated to the torpedo bomber role require specialist training and the crews had to maintain a high level of proficiency to ensure operational effectiveness. Torpedo maintenance personnel also required a high degree of specialist training, and the support structure developed at Nowra was a considerable financial investment. The abandonment of such an outlay could not be justified.

The perennial post-war debate on the RAN proposal that an aircraft carrier should be the centre of its force structure exemplified the cyclical nature of the argument. Naturally the protagonists recognised the strengths of their respective cases and ignored the weaknesses that would have been obvious if a rigorous study of the maritime campaigns undertaken by land and sea-based air power in the Pacific had been undertaken. There is no doubt that the RAN had the intention of developing a first-class modern navy, but a combination of events ensured that the aim and result

did not coincide. Both the RAAF and RAN became pawns to Cold War diplomacy in Asia, assigning vessels and formations to various arrangements to protect Thailand, Malaya, Singapore and South Vietnam from the threat of communist expansion. By so doing, Australian foreign policy was aligned to that of the United Sates and the United Kingdom. As the influence of the latter waned, both the RAAF and RAN turned to the United States for equipment. However, the maritime forces, both air and seaborne, were relegated to a supporting role under the US nuclear umbrella. In this context the Australian carrier force was relegated, from the RAN perspective, to an inferior status. The RAAF, until the advent of the F-111 aircraft, did not possess a modern, multi-role strike aircraft, and this fact inhibited the development of a strike force. Therefore the RAAF, like the RAN, was relegated to an anti-submarine stance until the harpoon standoff missile became available to give a limited strike capability to maritime patrol aircraft.

The selection of the F/A-18 Hornet to replace the Mirage fighter is an indication of the intellectual rigour that has been introduced into equipment purchasing. The Mirage was a fine interceptor. However, the aircraft had a short radius of action and limited ground and maritime strike capacity. The F/A-18 provided the RAAF with the flexibility to effectively use the type in the maritime role.

The RAAF and RAN have been subjected to the pressures of powerful allies to fit into a capability niche within the overbearing numbers and technology of their combat power. This has tended to distort the structure of both then RAAF and RAN. For example, in the 1960s, the RAAF maritime force and the RAN became anti-

submarine oriented. The lack of combat capability during the period of Indonesian confrontation with Malaysia was an unpalatable prospect for both Australian services. This example illustrates that the national interest of a small ally may not always be of paramount importance to, or even recognised, by a great power.

Another important fact that becomes obvious from this study is that the services must look beyond their own individual culture, establish mutual knowledge of the intrinsic strengths and weaknesses of each. Australia is the world's largest island, with unique defence problems. A realistic maritime policy, involving the intelligent use of all military forces, is essential for the continued safety of the nation.

BIBLIOGRAPHY

Primary Sources

National Archives of Australia, Canberra

A289

1849/8/243 Request by Naval Board for copies of proposals for the establishment of a Military Aviation School and Corps.

A705/1

4/1/44 Division of responsibility for certain services between RAN, Aust Army and RAAF in Australia in time of war.
4/1/60 Report Regarding the Activities and Development of the Royal Australian Air Force during the Five Year Period ending 30/6/29.
4/10/64 Training of Naval Personnel Course for Air Duties 1920-31.
4/2/16 Ministerial enquires regarding employment of RAAF units in Trade Defence.
121/2/247 Avro Anson Aircraft Policy File.
151/1/680 Torpedo Squadron Station for RAAF Selection of Sites.
208/2/436 Naval Personnel for Duties with RAAF 1942–50.
231/9/902 Torpedo Carrying Squadrons - Establishment Policy.
43/1/1224 Maritime Operations Half-Yearly Conferences
56/1/186 Aircraft requirements Navy and Army on Mobilisation.

A705/2

12/2/1068 Skip Bombing.
208/1/2293 No s 67, 71, 73 Anson G/R Squadrons Proposals for Crew Training - Policy.
208/1/2174 Personnel - Crew Training - GR/FB Crews - Policy.
208/2/260 Naval Cooperation - Policy.

A816/1

6/301/529A Council of Defence Agendum No 5/1947: Status and Control of Naval Aviation Branch.
52/301/236 Establishment of Naval Aviation Branch .
52/301/285 Establishment of Naval Aviation Branch.

A1129/1

29/30/Air Operations 14 Squadron.

A1196/2

1/501/395A Results of Torpedo and Dive Bombing Attacks by Naval Aircraft.

A1196/6

1/501/213 Purchase of Beaufort Aircraft for RAAF. Policy File
1/501/224 Flying Boats Selection of type for equipment of F.B. Squadron.
1/501/323 Air Requirements Naval Board Policy.
1/501/355 Pt 1 Home Defence Force Second Line Reserve Units - Policy.
1/501/360 Shore Based Aircraft Proposed Equipping with Depth Charges for use against submarines.
1/501/399 Convoys - Air Protection - Policy.
1/501/544 Naval Co-operation Aircraft Requirements 1944–1946.
1/501/544 Pt 2 December 1946-December 1950.
1/501/603 Replacement of Catalina aircraft by Lincoln aircraft 1949-51.
1/501/89 Stowage of Seagull in Albatross.
1/502/24 Torpedo Reconnaissance Aircraft (Beaufighter Attack Aircraft).
1/502/610 Plans for replacement aircraft for General reconnaissance Squadrons.
2/501/240 Operational requirements associated with the introduction of underwater homing weapons.
12/501/11. First Interim Report on the work of the Bombing and Air Fighting Committee.
12/501/196 RAAF representation on Air Ministry Anti-Shipping Committee - Policy.
12/501/58 Far Eastern Defence Conference at Singapore on October 1940, 1940 –41.
12/501/84 Conference of Commanders in Far East - Singapore April 1941 (A.D.B.).
12/501/85 “ADA” Conference Monthly Progress Reports Extracts from operational reports.
12/501/89 Conference - Northern Area - June 1941.
12/502/8 Sea/Air Warfare (Aust) Committee.
15/501/245 RAAF Expansion Programme Formation Organisation and Movement of Units.
15/501/*259* Air Staff Appreciation Employment of RAAF against attack by Japanese Forces.
15/501/273 Scheme for Heavy Air Operations in North West Area.
15/501/3 Tactical Employment of Air Forces in the Local Defence of Australia.
15/501/40 Coastal reconnaissance.
20/501/16 Air Crew for Operational Units Organisation - Policy.
36/501/237 GR Squadrons (Torpedo) Organisation.
36/501/378 Torpedoes - No. 9 Operational Group.
36/501/449 Torpedo Development Flight Policy.
37/501/105 Report by Lt Cmdr Smallwood R.N. Development and Research in Americas and Notes on US Naval Aviation.
59/501/62 Operational Training Torpedo Training - Policy.
60/501/115 Operations Beaufort Torpedo Attacks as from 7/9/42.
60/501/52 Operations to Seaward All RAAF Stations policy.
60/501/53 Operations to Seaward RAAF Station Pearce.
60/501/56 Operations to Seaward Rathmines Station.
60/501/58 Operational Reports from Bandoeng.
60/501/6 Operations to Seaward RAAF Station Richmond.
60/501/61 RAAF System of Control.
60/501/62 Operations to Seaward Northern Area.

A1196/7

20/501/28 Composition of Aircraft Crews Policy.
15/501/351 RAAF Three-Year Programme Mid-1954 to Mid-1957 - Organisation of Maritime Reconnaissance Force.
12/501/368 Co-ordination of M.R. Lincoln Project - Review Committee 1953 1955.

A1945/39

244/3/64 RAN Proposal for a Replacement Aircraft Carrier and Fixed Wing Aircraft.

A4940

C265 RAAF Purchase of Lockheed P2V-5 Aircraft 1951-Policy.
C1174 Purchase Lockheed P2V-5 (Neptune) Aircraft 1955.

A5799/15

Defence Committee Agendum No. 55/1946 Establishment of RAN Air Branch.
Defence Committee Agendum No. 156/1944 Aircraft Carriers in the Royal Australian Navy.
Defence Committee Agendum No. 173/1951 Establishment of a Joint Anti-Submarine School in Australia.
Defence Committee Agendum No. 136/1951 Proposed acquisition of an aircraft carrier from the Admiralty on loan.

A5954/60

1365/8 Views on Aircraft Carriers for the Royal Australian Navy and their Tactical Use.

A5954

1365/1 Recruiting for naval aviation.
1649/1 Extracts from Evershed Report on the internal organisation of Naval Aviation (Fleet Air Arm)
1648/2 Naval Aviation Information furnished by Defence Representative London.

A5954/69

1347/22 Lecture read to members of the United Service Institute Melbourne 19 June 1928. 'Have Aircraft Displaced Warships" by Rear Admiral E.D. Sydenham.
1365/9 Naval Aviation Special Papers
1505/69 Higher direction of the RAN. Appointment of Fourth Naval Member of Naval Board (to deal with matters relating to Naval Aviation). August 1947.
1648/4 Naval Aviation The Naval Plan February 1947 Naval Aviation Planning Staff.
1648/69 Naval Aviation, Extract from Evershed Report on the internal organisation of naval aviation ("Fleet Air Arm") February 1945.

1649/1 Post War Naval Defence Policy : Proposal for establishment of RAN Air Branch.

A1945

25/3/5 Policy on Naval Aviation

A11065/1

2/2/35 Flying and Operational . Operations to Seaward.

A11066/1

5/1/11 Training Torpedo Dropping Policy.
6/2/19 Reports on ship sightings and plots.
6/2/20 Report and Suffixes of Submarine Movements (Fixes, Sightings, Contacts).
6/2/22 Submarines D/F fixes and Sightings Policy.
6/2/23 Detailed Reports Sub. Sightings Strikes etc Policy.
6/2/25 Submarine Activity Sortie No. 7.
6/2/29 Submarine Activity Sortie No. 6.
6/2/30 Misleading Evidence of Submarines.
8/1/16 Operations General Strategic Policy for Anti -Submarine Operations.
8/2/15 Operations Flying Protection of shipping by shore based aircraft.
8/5/10 V.A.I. and Own Sea Forces.
8/7/4 Operations - Rooms AOR Sydney.
19/1/3 AOC Conference.
19/1/4 Conferences - Commanding Officers.
19/1/5 Conferences Air Officers' Commanding.

A11093/1

319/1Q Reports on Visits to Units by Staff Officers RAAF Command.
320/5C1 Organisation - Allied Air Forces.
320/5C5 Southwest Pacific Sea Frontiers Command.
320/5K3 Allied Air Force Units under RAAF Control.
320/5K7 Composition and Integration of Offensive Wings in North Western Area.
320/99 Torpedo Squadrons Policy - Organisation.
320/99A Base Torpedo Unit - Organisation - Policy.
320/99M Mobile Torpedo Sections - Organisation - Policy.
321/1A1 Air Defence Headquarters - Policy and Organisation
321/1M1 Air Defence Battle Orders ASD 202/1.
322/172B Employment of Reserve Squadrons.
337/1C Conference RAAF Headquarters of Air Officers Commanding.
373/6F Bombing Operations North Western Area.
373/21 R Operation 'Colleen'.
373/21S Operation "Lady'.
373/21Q Operations 'Barmaid'.
373/21T Operation 'Frump'.
373/21U Operation 'Poetess'.

373/21V Operation ‘Skivvy’.
373/21W Operation ‘Hussy’.
373/21Y Operation ‘Darling’.
373/21Z Operations ‘Trollop”
373/24B Air Support Doctrine SWPA.
373/211A Operations ‘Duckie’
373/212A Operations ‘Witch’
373/212B Operation ‘Showgirl’.
373/212C Operation ‘Fishwife’.
373/212D Operation ‘Angel’.
373/212E Operation ‘Niece’.
373/2F Operation ‘Wahine’.
373/212G Operation ‘Harlot’.
373/12H Operation ‘Girlie’.
373/212J Operation ‘Landlady’.
373/212L Operation ‘Lubra’.
373/212M Operation ‘Czarina’.
373/212N Operation ‘Amazon’.
373/6F Bombing Operations - North Western Area.
381/91J Operation Instructions RAAF Command.
381/91J Pt 2 Operation Instructions RAAF Command
381/91J Pt 3 Operation Instructions RAAF Command
381/91J Pt 4 Operation Instructions RAAF Command
381/91J Pt 5 Operation Instructions RAAF Command
381/91J Pt 6 Operation Instructions RAAF Command
381/91J Pt 7 Operation Instructions RAAF Command
381/91J Pt 8 Operation Instructions RAAF Command
381/91J Pt 9 Operation Instructions RAAF Command
381/91J Pt 10 Operation Instructions RAAF Command
381/91J Pt 11 Operation Instructions RAAF Command
381/91J Pt 12 Operation Instructions RAAF Command
381/93 Pt 1 Headquarters Allied Air Force Operational Instructions.
471/6U Aircraft Minelaying Tactics
471/1Y1 R.P. Equipment. Operational Requirements and New Equipment.
471/1Y4 RP Equipment Tactical use.
565/4E Air Protection of Shipping.
676/2A5 ASV - Operational Employment of
676/4A5 Reports on Special RCM Missions.
676/4A8 RCM - Search Equipment Strike Aeroplanes - Reports.
676/4A9 Radar - Evasive Tactics
676/4A10 Radar Jamming and Interference
676/4A15 Ferret Flights - Radar Interception and Techniques
676/4A17 Ferret Flight Reports.

A11094/1

2/1/3 Local Defence Co-ordinating Committee Proceedings Sydney-Port Kembla.
4/2/16 Liaison with Services-Navy. Co-ordination of Operational RAAF and ANZAC Naval Forces.

5/1/11 Coordination of Defences at Defended Port and Operations for Trade Protection.
5/1/34 Operations Convoy US 8.
5/1/39 US.9
Int 5/26 Submarine Sightings and Indications.

A11250/1

2/1/Air 23 Squadron exercises with MV Sussex.
7/30/Air Anti Submarine Air Patrols during Convoy operations

A11273/1

2/57/Air Naval and air cooperation exercises for the half year ending 30 June 1938.
2/61/Air Pt 1 Report on operation RAAF - Detachment embarked HMAS S*ydney* 27.1.38 - 25.3.38
2/83/Air Pt 1 Reports on operations - Detachments embarked in HMA Cruisers.
4/2/Air Operations-Flying operations instructions etc Naval Co-operation.

A11274/1

10/256/Air 22 Squadron Co-Operation with Navy.

A11280

12/4/Air Sea/Air Warfare Committee Papers
66/9/Air Maritime Operations Training Conferences
66/13/Air Exercises Co-operation with Submarines.

A11294/1

41/13/Air 14 Squadron Operations to Seaward Beauforts.
41/18/Air 14 Squadron Operational Policy Memorandum (issued by AAFHQ).

A11297/1

7/3/Air Pt 1 Instructions for Operations to Seaward.

A11300/1

4/1/Air Pt 1 Operations - General
4/1/Air Pt 2 Operations - General
4/2/Air Pt 1 Cooperation with other services

A11334/1

5/1/27Air Operations Convoy US2
5/28/Air Operations Convoy US 3
5/30/Air Operations Convoy US 4

5/1/32 Air Operations Convoy US5
5/1/34 Air Operations Convoy No.7
5/37/Air Operations Convoy US5A

A11804/1

1913/361 Naval Aviation Units

AA1969/100

6/2/21.Headquarters Eastern Area. Detailed Reports Submarine sightings, Strikes etc.

AA1969/100/1

41/1/Air. No. 14 Squadron Operations.

AA1969/100/3

7/212/Air Anti-submarine Operations.
501/94 ARM Tactical use of bombs and torpedoes method of attack etc.

AA1969/100/6

319/1P7 Monthly Tactical Appreciation North Western Area.

AA1969/100/156

21/2/Air Intelligence Information. Enemy Submarine Attacks.
21/3/Air Intelligence Information: Enemy Aircraft Sighting Reports.

AA1969/100/160

3/1/Air Organisation GR/T Squadrons.
5/3/Air Pt 1 Torpedo Training Pilots.
5/6/Air Course Report and Assessment forms. Beaufort Torpedo Training.
5/12/Air Torpedo Training Catalina Aircraft.
7/2/Air Pt 1 Instructions Submarine Attacks.
7/4/Air Pt 1 Investigation Submarine Reports Aircraft procedure.
7/18/Air Employment of Aircraft in Torpedo Attacks.
8/2/Air Pt. 1 Headquarters Nowra Liaison with other Services - Navy.

AA1969/100/164

4/25/Air Operations: RAN and RAAF cooperation I Defence of Trade.

AA1969/100/215

12/8/Air HQ 1 VAOC Records and Returns Control Post Monthly Reports.

AA1969/100/301

4/1/Air Intelligence Torpedo Strikes - Reports.
4/6/Air Air Mobile Torpedo Sections - Operational.

K827/3

5/2/Air Pt 1 25 Squadron co-operation with the Navy
29/8/Air Pt 2, Pt 3 25 Squadron air reconnaissance to seaward
38/7/Air No. 25 Squadron co-operation with Navy.
41/41/Air No 25 Squadron Navy co-operation

National Archives of Australia, Melbourne

B197/0

1821/1/41 Naval and Military Aviation.
1821/1/49 Sub-Committee Council of Defence re Naval and Military Aviation 2/10/1918.

MP150/1/0

449/201/1076

MP151/1/0

348/240/4
404/201/801

MP981

582/201/1956 Recruitment of senior ratings in the United Kingdom.
614/207/179 Anti-submarine training.

MP981/1/0

443/202/428 Naval Aviation Planning

MP1049/1/0

1914/0223 Australian Naval Air Service. Proposals for Establishing.
1918/0436 Provision by Imperial authorities of aircraft and necessary personnel to form a nucleus for the Naval Air Service.
1919/0107 Commonwealth Aviation Policy Particulars requested by Director of Canadian Naval Service, Ottawa, Canada
1921/0433 Summary of the arrangements for Aviation, both Military and Civil.

MP1049/5/0

1821/2/78 RAN and RAAF Co-Operation
1874/2/48 Naval Aviation Plan E

MP1049/6/0

5116/1/2 Naval Aviation Policy for 1953/53.
5121/19/1 Requirements for Fighter Aircraft.

MP1049/14/0

1913/6651 Naval Aviation School Army estimates for Flying Corps 1913-14
1915/9664 RAN Flying Corps - Formation of.. Submitting application to be selected for a course of training in aviation in connection with the proposed scheme for the formation of the above.

MP1185/3/0

2311/1/136 Naval Aviation Units for Protection of Naval Bases

MP1185/10

5241/70/A Assumption by RAN or RAAF Maritime Functions

Naval Historical Section, Canberra

Australian Military Forces, 72 CBAL Section HMAS *Sydney*, War Diary - Korean Operations, 31 October 1951.

RAAF Historical Section, Canberra

Report by Air Marshal Sir John M. Salmond, KCB, CMG, CVO, DSO, ADC, Royal Air Force. Part 1 The Organisation, Administration, Training and General Policy of Development of the Royal Australian Air Force, Melbourne, 20th September, 1928.
General Staff Notes on *Report by Air Marshal Sir John M. Salmond ...*
Naval Staff Notes on *Report by Air Marshal Sir John M. Salmond ...*
Air Staff Notes on *Report by Air Marshal Sir John M. Salmond ...*
Memorandum Regarding the Air Defence of Australia, RAAF Headquarters, 21 April 1925.
Report on the Air Defence of Australia by the Air Board 1920.
Vessels Lost 3 September 1939-June, 1945. [Microfilm 465]
Vessels Damaged or Attacked 1 September 1939-June 1945.[Microfilm 465]
RAAF Attacks on Submarines in Australian Coastal Waters. [Microfilm 465]
The Roles for Which Service Squadrons are to be Trained, Air Board Memorandum, No. 1, 20 February 1939; 17 March 1941; 10 October 1941.
Co-ordinated control of operations and intelligence, Air Board Memorandum No. 16 17 March 1942; 17 March 1941.

War Report of the Chief of the Air Staff Royal Australian Air Force 3rd September, 1939 to 31st December, 1945 to the Minister for Air, RAAF Printing and Publication Unit, Melbourne, ND.

Air Board Papers

Agenda No.32
Agenda No.545
Agenda No.558
Agenda No.810
Agenda No.1018
Agenda No.1603
Agenda No.1398
Agenda No.2128
Agenda No.2377
Agenda No.2600
Agenda No.3539
Agenda No.4261
Agenda No.4546
Agenda No.8115
Agenda No.12433
Agenda No.12690

Air Council Papers

Agenda No. 128

Microfilm/Microfiche

Report on Round-Australia Seaplane Flight 1924.
Royal Australian Air Force. Report by Flying Officer A.A.E. Hempel on Solomon Islands, Rabaul and Queensland Coast visited by HMAS *Brisbane* during Royal Australian Navy Winter Cruise 28th June 1923 to 13th August,1923.
Royal Australian Air Force Report by Flying Officer E.A. Mustard DFC. Islands and Harbours of Australian Mandated Territory visited by him whilst attached to HMAS *Adelaide* during Royal Australian Navy Winter Cruise 19-6-23 to 3-8-23
Air Staff Notes on Air Co-operation with the Royal Australian Navy dated 2 September 1926
Report of Papua Survey Flight.
HM Australian Squadron-Periodical Report of Air Work, 1st December, 1934 to 30th November, 1935.
Operation of 'Seagull' Amphibian A9-2 from HMAS *Australia* during the Island Cruise, 10th September 1932-7th October 1932.
Milne Bay - Appreciation of Situation.

Australian War Memorial Canberra

AWM PRO0058

Papers of Air Vice Marshal William Dowling Bostock,

AWM 3 DRL

Air Marshal Sir George Jones Papers,

AWM PR88/154

Records of AVM A.T. Cole RAAF 1916-46,

AWM DRL 2222 (3rd S)

Records of Sir George Pearce,

AWM 54

81/4/141 Maritime Trade Protection.

Public Record Office, Kew.

ADM1

8477/307 Policy to be followed as regards development and use of torpedo carrying seaplanes.
8487/87 German Seaplanes carrying torpedoes . Attacks on shipping.
8529/181 Flights of aircraft from decks of HM Ships Particulars of-
18140 Transfer of Ships to Royal Australian Navy.
19051 Transfer of HM ships to the Royal Australian Navy.
20673 Inquiries from ACNB concerning Light Fleet Carriers for Australia.
20674 Manning of Aircraft Carriers for RAN.
24352 Shipbuilding Corporation Levies Expedite Settlement for final prices for 1944-1946 deliveries.
24397

ADM205

22 First Sea Lord Records 1939-1945.
69 First Sea Lord Records 1948 Part 1
72 First Sea Lord's Records 1949 (Part 2)
74 First Sea Lord's Records 1950-1951
76 First Sea Lords Records 1950-1951

AIR2

2130 Appreciation of the Situation in the Far East . Defence Requirements.

2199 Australian co-operation in the defence of the Far East - Policy.
2695 Singapore - Second Stage Defences Consideration of. Committee of Imperial Defence: Joint Overseas and Home Defence Committee: Minutes.
7174 Far East Defence Policy

AIR8

202 Vulnerability of capital ships to air attack
635 Efficiency of Torpedo Work in the RAF (Investigation by Admiral H.G. Phillips)
997 Commonwealth Cooperation in Defence Part 1
998 Commonwealth Cooperation in Defence Part 2
999 Commonwealth Cooperation in Defence
1175 Operations Against Japan Australian contribution

AIR20

2120 Air reinforcements Far East Fighters (Policy) 12/4/41-7/3/42.
2121 Air Reinforcements Far East Bombers (Policy) 10/11/41-27/12/42

AIR23

3575 C of S Far Eastern Appreciation and Malayan Tactical Appreciation 26/3/40-31/1/42

AIR 29

2758 CAS Miscellaneous Papers. Sub folder 108/1 Far East Operations

United States Air Force History Office, Bolling AFB

George C. Kenney Papers.

SECONDARY SOURCES

Books

An Illustrated Encyclopedia of Aircraft, Orbis Publishing Ltd, London 1981/1985.

Alford, B., *Darwin's Air War 1942-1945,* The Aviation Historical Society of the Northern Territory, Darwin, 1991.

Ashworth, N., *The Anzac Squadron*, Hesperian Press, Carlisle, 1994.

Australian Naval Aviation Museum, *Flying Stations: A Story of Australian Naval Aviation,* Allen and Unwin, Sydney, 1998.

Baer, G.W., *One Hundred Years of Sea Power: The US Navy 1890-1990,* Stanford University Press, Stanford, 1994.

Baff, K.C., *Maritime is Number Ten: The Sunderland Era,* Netley, 1983.

Barclay, G. St J., *A Very Small Insurance Policy: The Politics of Australian involvement in Vietnam 1954-1967,* University of Queensland Press, St Lucia, 1988.

Barker, R., *The Ship-Busters. The Story of the R.A.F. Torpedo-Bombers*, Chatto & Windus, London, 1957.

Bateman, S. & Sherwood, D. (eds), *Strategic Change and Naval Roles: Issues for a Medium Naval Power,* Strategic and Defence Studies Centre, Australian National University, Canberra, 1993.

Beaver, P., *The British Aircraft Carrier*, Patrick Stevens, Cambridge, 1982.

Bennett, J., *Highest Traditions: The History of No. 2 Squadron, RAAF,* Australian Government Publishing Service, Canberra, 1995.

Bergerud, E.M., *Fire in the Sky: The Air War in the South Pacific,* Westview Press, Boulder, 2000.

Blackman, R.V.B., *Jane's Fighting Ships 1963-64 Edition*, Sampson Low, London, 1963.

Bonython, K., *Ladies' Legs and Lemonade,* Rigby, Adelaide, 1979.

Boyd, C. & Akihiko Yoshida, *The Japanese Submarine Force and World War II*, Naval Institute Press, Annapolis, 1995.

Boyle, A., *Trenchard: Man of Vision*, Collins, London, 1962.

Brook, W.H., *Demon to Vampire: The Story of No.21 (City of Melbourne) Squadron,* Demonvamp Publications, Glen Waverley, 1986.

Burrell, Vice-Admiral Sir H., *Mermaids do Exist: The Autobiography of Vice-Admiral Sir Henry Burrell,* Macmillan, Melbourne, 1986.

Burton, G. & Smyth, F., *A Nation Grew Wings: The Story of the RAAF Beaufort Squadrons in New Guinea,* Winterset House, Melbourne, 1946.

Carruthers, S.J., *Australia Under Siege: Japanese Submarine Raiders 1942,* Solus Books, Sydney, 1982.

Chesneau, R., *Aircraft Carriers of the World, 1914 to the Present; An Illustrated Encyclopedia,* Brockhampton Press, London, 1998.

Corbett, Sir J.S., *Some Principles of Maritime Strategy,* Conway Maritime Press, London, 1972.

Corum, J.S., *The Luftwaffe: Creating the Operational Air War, 1918-1940,* University Press of Kansas, Lawrence, 1997.

Cotton, J. (ed), *East Timor and Australia*, Australian Defence Studies Centre, Canberra, 1999.

Coulthard-Clark, C.D., *No Australian Need Apply: The Troubled Career of Lieutenant General Gordon Legge,* Allen & Unwin, Sydney, 1988.

- , *The Third Brother: The Royal Australian Air Force 1921-39*, Allen and Unwin, Sydney, 1991.

- , *Edge of Centre: The eventful life of Group Captain Gerald Packer,* RAAF Museum, Point Cook, 1992.

- , *McNamara, VC: A Hero's Dilemma*, Air Power Studies Centre, Canberra, 1997.

Criss, P. & Schubert D.J., *The Leading Edge: Air Power in Australia's Unique Environment,* Strategic and Defence Studies Centre, Australian National University, Canberra, 1990.

Deane, Sir M., *The Royal Air Force and Two World Wars,* Cassell, London, 1979.

Dennis, P, Grey, J, Morris, E, Prior, R, & Connor, J. *The Oxford Companion to Australian Military History,* Oxford University Press, Melbourne, 1995.

de Seversky, A., *Air Power Key to Survival*, Herbert Jenkins, London, 1952.

Directorate of Public Relations RAAF, *These Eagles,* Australian War memorial, Canberra, 1942.

Directorate of Public Relations RAAF, *RAAF Log*, Australian War Memorial, Canberra, 1943.

Directorate of Public Relations RAAF, *RAAF Saga*, Australian War Memorial, Canberra, 1944.

Directorate of Public Relations RAAF, *Victory Roll*, Australian War Memorial, Canberra, 1945.

Donohue, H., *From Empire Defence to the Long Haul: Post-war defence policy and its impact on naval force structure planning 1945-1955,* Royal Australian Navy Maritime Studies Program, Canberra, 1996.

Douhet, G., *The Command of the Air,* Office of Air Force History, Washington DC, 1983.

Eather, S., *Get the Bloody Job Done: The Royal Australian Navy Helicopter Flight - Vietnam and the 135th Assault Helicopter Company 1967-1971,* Allen and Unwin, Sydney, 1998.

Evans, Air Marshal D., *A Fatal Rivalry: Australia's Defence at Risk,* Macmillan, Melbourne, 1990.

Flying Stations: A Story of Australian Naval Aviation, Allen and Unwin, Sydney, 1998.

Foster, S., *Okinawa 1945: Assault on the Empire,* Cassell, London (1994), 1999.

Frame, T., *Pacific Partners: A History of Australian-American Naval Relations,* Hodder and Stoughton, Sydney, 1992.

Frame, T.R., Goldrick, J.V.P. and Jones, P.D., *Reflections on The Royal Australian Navy,* Kangaroo Press, Kenthurst, 1991.

Gannon, M., *Black May: The Epic Story of the Allies' Defeat of the German U-Boats in May 1943,* Aurum Press, London, 1998.

Gatacre, Rear Admiral G.G.O., *A Naval Career: Reports of Proceedings 1921-1964,* Nautilas Press, Manly, 1982.

Gibbs, P., *Not Peace but a Sword,* Grubb Street, London, 1993.

Gill, G.H., *Royal Australian Navy 1939-1942,* Australian War Memorial, Canberra, 1957.

- , *Royal Australian Navy1942-1945,* Australian War Memorial, Canberra, 1968.

Gillett, R., *Wings Across the Sea,* Aerospace Publications Pty Limited, Canberra, 1988.

- , *HMAS Melbourne 25 Years*, Nautical Press, Sydney, 1980.

Grantham, S., *The 13 Squadron Story,* Dee Why, 1991.

Green, W., *Famous Bombers of the Second World War, Second Series*, MacDonald, London, 1960.

Grey, G., *Up Top: The Royal Australian Navy and Southeast Asian Conflict 1955-1972,* Allen and Unwin in Association with the Australian War Memorial, St. Leonards, 1998.

Griffith. T.E., *MacArthur's Airman: General George C. Kenney and the War in the Southwest Pacific,* University Press of Kansas, Lawrence, 1998.

Grossnick, R.A. (ed), *United States Naval Aviation 1919-1995,* Naval History Centre, Washington DC, 1995.

Gillison, D., *Royal Australian Air Force 1939-1942,* Australian War Memorial, Canberra, 1962.

Goulter, C.J.M., *A Forgotten Offensive. Royal Air Force Coastal Command's Anti-Shipping Offensive, 1940-1945*, Frank Cass, London, 1995.

Hallion, R.P., *Air Warfare and Maritime Operations*, Air Power Studies Centre, Canberra, 1996.

Hamer, D., *Bombers Versus Battleships: The Struggle Between Ships and Aircraft for the Control of the Surface of the Sea,* Allen and Unwin, Sydney,1998.

Hashimoto, M., *Sunk! The Story of the Japanese Submarine Fleet 1942-1945*, Casell, London, 1954.

Hayward, R., *The Beaufort File*, Air Britain. Tonbridge, 1990.

Hewitt, J.E., *The Black One,* Langate Publishing, South Yarra, 1984.

- , *Adversity in Success: Extracts from Air Vice Marshal Hewitt's Diary 1939-1948,* Langate Publishing, South Yarra, 1980.

Hezlet, Vice Admiral Sir A., *Aircraft and Sea Power*, Peter Davis, London, 1970.

Horner, D., *Defence Supremo: Sir Frederick Shedden and the Making of Australian Defence Policy,*Allen & Unwin,Sydney, 2000.

Horton. G.R. Jr., *The Best in the Southwest: The 380th Bombardment Group (H) in World War II Southwest Pacific Area,* Mosie Publications, Savage, 1995.

Hill, Rear Admiral J.R., *Anti-Submarine Warfare,* Ian Allen, London, 1983.

Hyde, H.M., *British Air Policy Between the Wars 1918-1939*, Heinemann, London, 1976.

Jenkins, D., *Battle Surface: Japan's Submarine War Against Australia 1942-44*, Random House, Milsons Point, 1992.

Jones, C., *Wings and the Navy 1947-1953*, Kangaroo Press, Kenthurst, 1997.

Jones, Sir G., *From Private to Air Marshal: The Autobiography of Air Marshal Sir George Jones,* Greenhouse Publications, Richmond, 1988.

Jones, R., *Seagulls Cruisers and Catapults,* Pelorus Publications, Hobart, 1989.

Jose, A.W., *The Royal Australian Navy 1914-1918,* University of Queensland Press in Association with the Australian War Memorial, St Lucia, 1987.

Laite, Group Captain B.C., *Maritime Air Operations,* Brassey's, (UK) London, 1991.

Lansdown, J.R.P., *With the Carriers in Korea: The Sea and Air War in SE Asia 1950-1953,* Crecy, Southside, 1997.

Levine, I.D., *Mitchell: Pioneer of Air Power*, Duell, Sloan and Pearce, New York, 1958.

Lind, L., *Toku-Tai: Japanese Submarine Operations in Australian Waters,* Kangaroo Press, 1992.

Livingstone, B., *Under the Southern Cross: The B-24 Liberator in the South Pacific,* Turner Publishing Company, Paducah, 1998.

Mason, AVM R.A., *Air Power: An Overview of Roles*, Brassey's Defence Publishers, London, 1987.

- , *Air Power. A Centennial Appraisal,* Brassey;s, London, (1994) 2000.

Mahan, A.T., *The Influence of Seapower Upon History,* Hill and Wang, New York, 1957.

Maher, M.S., *The Role of Australian Land-Based Air Power in a Maritime Strategy,* Air Power Studies Centre, Canberra, 1999.

McAulay, L., *Battle of the Bismarck Sea,* St. Martin's Press, Newe York, 1991.

McCarthy, J., *Australia and Imperial Defence: A Study in Air and Sea Power,* University of Queensland Press, St Lucia, 1976.

McInnes, C & Sheffield G.D. (eds), *Warfare in the Twentieth Century: Theory and Practice,* Unwin Hyman, London, 1988.

Middlebrook, M & C.Everitt, *The Bomber Command War Diaries: An Operational Reference Book 1939-1945,* Midlands Publishing Limited, Hinckley,1996.

Middlebrook, M., *Convoy,* William Morrow, New York, 1976.

Minty, A.E., *Black Cats,* RAAF Museum, Point Cook, ND.

Mitchell, W., *Winged Defense: The Development and Possibilities of Modern Air Power Economic and Military,* Dover Publications, New York, (1925) 1988.

Moore, Captain J., *Seapower and Politics: From the Norman Conquest to the Present Day,* Weidenfeld and Nicolson, London, 1979.

Mordike, J., *'We should do this thing quietly': Japan and the great deception in Australian defence policy 1911-1914,* Aerospace Centre, Canberra, 2002.

Nelmes, M.V., *Tocumwal to Tarakan: Australians and the Consolidated B-24 Liberator,* Banner Books, Belconnen, 1994.

Nicholls, B., *Statesmen and Sailors: Australian Maritime Defence 1870-1920,* Balmain, 1995.

Odgers, G., *Air War Against Japan 1943-1945,* Australian War Memorial, Canberra, 1968.

O'Neill, R., *Australia in the Korean War 1950-53 Volume 1: Strategy and Diplomacy,* The Australian War Memorial and the Australian Government Publishing Service, Canberra, 1981.

- , *Australia in the Korean War 1959-53 Volume 11: Combat Operations,* The Australian War Memorial and the Australian Government Publishing Service, Canberra, 1981.
- , (ed), *Insecurity!: The Spread of Weapons in the Indian and Pacific Oceans,* Australian National University Press, Canberra, 1978.

Ong Chit Chung., *Operation Matador: Britain's War Plans against the Japanese 1918-1941,* Times Academic Press, Singapore, 1997.

Palmer, M.A., *Origins of the Maritime Strategy: The Development of American Naval Strategy 1945-1955*, Naval Institute Press, Annapolis, 1988.

Parillo, M.P., *The Japanese Merchant Marine in World War 11,* United States Naval Institute, Annapolis, 1993.

Paret, P. (Ed), *Makers of Modern Strategy from Machiavelli to the Nuclear Age,* Princeton University Press, Princeton, 1986.

Peattie, M.R., *Sunburst. The Rise of Japanese Naval Air Power, 1909-1941*, Naval Institute Press, Annapolis, 2001.

Powell, A., *The Shadow's Edge: Australia's Northern War,* Melbourne University Press, Melbourne,1988.

RAAF Historical Section., *Units of the Royal Australian Air Force: A Concise History, (10 Volumes),* Australian Government Publishing Service, Canberra, 1995.

Reader, W.J., *Architect of Air Power: The Life of the First Viscount Weir*, Collins, London, 1968.

Reynolds, C.G., *The Fast Carriers: The Forging of an Air Navy,* Naval Institute Press, Annapolis, 1992.

- , *Admiral John H. Towers. The struggle for naval Air Supremacy,* Naval Institute Press, Annapolis, 1991.

Robertson, A., *The Need for an Australian Aircraft Carrier Capability,* The Research School of Pacific Studies, Australian National University, 1982.

Roskill, S., *The Navy at War 1939-1945,* Wordsworth Editions, Ware, 1998.

- , *Naval Policy Between the Wars II The Period of Reluctant Rearmament 1930-1939,* Collins, London, 1976.

Ross, A.T., *Armed and Ready. The Industrial Development and Defence of Australia 1900-1945,* Turton & Armstrong, Sydney, nd. (1995).

Seversky, A., *Victory Through Air Power,* Hutchinson, London, 1942.

Slessor, Sir J., *The Central Blue: Recollections and Reflections,* Cassell and Company, London, 1956.

- , *Strategy for the West,* Cassell, London, 1954.

Smith, P.C., *Ship Strike: The History of Air-to-Sea Weapon Systems,* Airlife, Shewsbury, 1998.

Smith, Sir V., *A Few Memories of Sir Victor Smith,* Australian Naval Institute Press, Campbell, 1992.

Snowden Gamble, C.F., *The Story of a North Sea Air Station,* Neville Spearman, London , (1928) 1967.

Stephens, A., *Power Plus Attitude: Ideas, Strategy and Doctrine in the Royal Australian Air Force 1921-1991*, Australian Government Publishing Service, Canberra, 1992.

- , *The Royal Australian Air Force,* Oxford University Press, Melbourne, 2001.

- , (ed), *Smaller But Larger: Conventional Air Power into the 21st Century,* RAAF Air Power Studies Centre, Canberra, 1991.

- , (ed), *New Era Security,* RAAF Air Power Studies Centre, Canberra, 1996.

- , & B. O'Loghlin (eds), *The Decisive Factor: Air Power Doctrine by Air Vice-Marshal H.N. Wrigley,* Australian Government Publishing Service, Canberra, 1990.

- , (ed), *Defending the Air Sea Gap,* Australian Defence Studies Centre, University College, ADF, 1992.

Stevens, D., *U-Boat Far From Home: The Epic Voyage of U 862 to Australia and New Zealand*, Allen and Unwin, Sydney, 1997.

- , (ed); *In Search of a Maritime Strategy: The Maritime Element in Australian Defence Planning since 1901,* Strategic and Defence Studies Centre The Australian National University, Canberra, 1997.

- , (ed); *The Royal Australian Navy in World War II,* Allen and Unwin, Sydney, 1996.

- , (ed), *Maritime Power in the 20th Century: The Australian Experience*, Allen and Unwin, Sydney, 1998.

- , (ed), *Prospects for Maritime Aviation in the Twenty First Century,* Royal Australian Navy Maritime Studies Program, Canberra, 1999.

- , (ed)*The Royal Australian Navy,* Oxford University Press, Melbourne, 2001.

Taaffe, S.R., *MacArthur's Jungle War: The 1944 New Guinea Campaign,* University Press of Kansas, Lawrence, 1998.

Tarling, N., *Britain, Southeast Asia and the Onset of the Pacific War,* Cambridge University Press, Cambridge, 1996.

Terraine, J., *Business in Great Waters,* Wordsworth, Chatham, 1999.

- , *The Right of the Line,* Wordsworth, Chatham, 1997.

Till, G., *Air Power and the Royal Navy 1914-1945: A Historical Survey*, Janes Publishing Company, London, 1979.

Vincent, D., *Catalina Chronicle: A History of RAAF Operations,* Catalina National Committee, Adelaide, 1981.

- , *The RAAF Hudson Story: Book One*, Self Published, Highbury, 1999.

Wallace, G., *Up in Darwin with the Dutch,* Ringwood, 1983.

- , *Those Air Force Days,* Surrey Hills, 1986.

Wallace, R., *The Secret Battle 1942-1944*: *The Convoy Battle off the East Coast of Australia during World War 11*, Lamont Publishing, Ringwood, 1995.

Warden, Colonel J.A., *The Air Campaign: Planning for Combat,* Pergamon-Brassey's, Washington DC, 1989.

Werrell, K.P., *Blankets of Fire: US Bombers over Japan during World War 11*, Smithsonian Institution Press, Washington DC, 1996.

Williams, Sir R., *These are Facts: The Autobiography of Sir Richard Williams, KBE, CB, DSO,* The Australian War Memorial and the Australian Government Publishing Service, Canberra, 1977.

Winton, J., *Carrier Glorious: The Life and Death of an Aircraft Carrier,* Arrow Books, London, 1989.

Wright, A., *Australian Carrier Decisions: The Acquisition of HMA Ships Albatross, Sydney and Melbourne,* Royal Australian Navy Maritime Studies Program, Canberra, 1998.

Wilson, D. (ed), *Maritime War in the 21st Century*, RAN Seapower Centre, Fairbairn, 2001.

Wilson, D., *The Decisive Factor: 75 & 76 Squadrons - Port Moresby and Milne Bay,* Banner Books, Melbourne, 1991.

- , *Always First: The RAAF Airfield Construction Squadrons 1942-1974,* Air Power Studies Centre, Canberra, 1998.

Wilson, S., *Military Aircraft of Australia,* Aerospace Publications Pty Limited, Canberra, 1994.

- *, Lincoln, Canberra and F-111 in Australian Service,* Aerospace Publications Pty Limited, Canberra, 1989.

- *, Beaufort, Beaufighter and Mosquito in Australian Service,* Aerospace Publications Pty Limited, Canberra, 1990.

- , *Anson, Hudson and Sunderland in Australian Service*, Aerospace Publications Pty Limited, Canberra, 1992.

Journal Articles and Theses

'Argus'., 'Sea Power - Why it is the basis of defence', *The Navy, Army and Air Force Journal,* 1 October 1935.

Brancker, W.S., 'Air Power and Sea Power', *Brassey's Naval and Shipping Annual 1921-2,* William Clowes and Sons Limited, London, 1922.

Chamier, Air Commodore J.A., 'Air Power and Coast Defence', *The Navy, Army and Air Force Journal,* 1 February 1934.

Coulthard-Clark, C.D., '"A Damnable Thing": The 1938 Ellington Report and the Sacking of Australia's Chief of the Air Staff', *The Journal of Military History,* Volume 54, No.3, July 1990.

Correspondent (S.M.H. but not identified), 'Darwin's Defences Australia's New Task', *The Navy, Army, Air and Munitions Journal*, 1 June 1937.

Correspondent ('Sun' but not identified), 'Wings for Defence: A Singapore View', *The Navy, Army, Air and Munitions Journal*, 15 September 1938.

Forrest, Wing Commander A., 'The Technological Dimensions of War - from Machiavelli to Mahan', *Defence Force Journal*, No. 119, July/August 1996.

Gribble, Lieutenant Commander D., 'Strategic Air Power, Nuclear Weapons and the Corruption of Post-World War II Air Power Theory', *Defence Force Journal*, No. 126, September/October 1997.

Helson, P., 'The Forgotten Air Force - The Establishment of Australian Air Power in the North-Western Area 1941-1945', unpublished Master of Arts honours thesis, UNSW, 1997.

Hodson, H.V., 'Empire Defence Dominions and Policy', *The Navy, Army Air and Munitions Journal,* 10 July 1937.

Hurd, Sir A., 'British Battle Fleet,' *The Navy, Army, Air and Munitions Journal*, 1 October 1936.

Kainikara, Wing Commander P., 'Deep Strike Capability - The Cutting Edge of Deterrence', *Defence Force Journal*, No 137, July/August 1999.

Nicholl, G.W.T., 'The Future of the Aircraft Carrier', *Brassey's Annual: The Armed Forces Year-Book 1952,* William Clowes & Sons Limited, London, 1952.

Ryan, Petty Officer M.G., 'Mobile Air Power: A Case for Australia', *Defence Force Journal,* No. 84, September/October 1990.

Sandes, J., 'RAF Flying Boats: Lessons of the cruise from Basra', *The Navy, Army and Air Force Journal*, 1 November 1934.

Steinbach, Wing Commander J.W., 'Dreadnoughts, pacifism, poising and procrastination: A parliamentary pre-history of air power in Australia 1909-14', *Defence Force Journal,* No. 131, July/August 1998.

Stevens, D.M., 'The role of radio intelligence in the anti-submarine war around Australia 1942-45'; *Journal of the Australian War Memorial,* No. 25, October 1994.

- , 'I-174: The last Japanese submarine off Australia', *Journal of the Australian War Memorial,* No. 22, April 1993.

Stewart, I., 'RAAF Liberators smash vital Java power plant', *Wings,* 20 March 1945.

'Three Year Plan', *The Navy, Army, Air and Munitions Journal*, 1 August 1936.

Vincent, D., 'Quest for a bomber: The RAAF's supply problems, 1934-41', *Journal of the Australian War Memorial,* No. 9, October 1986.

"Volage",. 'Naval Air Power', *Brassey's Naval Annual 1948*, William Clowes and Sons, Limited, London, 1948.

Wilson, D., 'Dash Tempered With Discretion' in *Sabretache,* Vol XXVII, (January-March) 1986.

- , 'Commander in the Shadow: Air Vice Marshal W.D. Bostock 1942-1945', unpublished Master of Defence Studies sub-thesis, UNSW, 1997.

- , 'RAAF Swordfish', *Wings,* June, 1986, Volume 38, No. 2.

- , 'Southern Sunderlands', *Wings*, March 1987, Volume 39, No. 1.

- , 'The Martin PBM Mariner', *Wings,* June 1987, Volume 39, No. 2.