

Purdue University Purdue e-Pubs

Purdue University Press Book Previews

Purdue University Press

6-2020

British Imperial Air Power: The Royal Air Forces and the Defense of Australia and New Zealand Between the World Wars

Alex M. Spencer

Follow this and additional works at: https://docs.lib.purdue.edu/purduepress_previews

Part of the Military History Commons

This document has been made available through Purdue e-Pubs, a service of the Purdue University Libraries. Please contact epubs@purdue.edu for additional information.

BRITISH IMPERIAL AIR POWER

PURDUE STUDIES IN AERONAUTICS AND ASTRONAUTICS

James R. Hansen, Series Editor

Purdue Studies in Aeronautics and Astronautics builds on Purdue's leadership in aeronautic and astronautic engineering, as well as the historic accomplishments of many of its luminary alums. Works in the series will explore cutting-edge topics in aeronautics and astronautics enterprises, tell unique stories from the history of flight and space travel, and contemplate the future of human space exploration and colonization.



RECENT BOOKS IN THE SERIES

A Reluctant Icon: Letters to Neil Armstrong by James R. Hansen John Houbolt: The Unsung Hero of the Apollo Moon Landings by William F. Causey Dear Neil Armstrong: Letters to the First Man from All Mankind by James R. Hansen Piercing the Horizon: The Story of Visionary NASA Chief Tom Paine by Sunny Tsiao Calculated Risk: The Supersonic Life and Times of Gus Grissom by George Leopold Spacewalker: My Journey in Space and Faith as NASA's Record-Setting Frequent Flyer by Jerry L. Ross

BRITISH IMPERIAL AIR POWER

The Royal Air Forces and the Defense of Australia and New Zealand Between the World Wars

Alex M Spencer

Purdue University Press West Lafayette, Indiana

The funding and support of the author by the Smithsonian Institution made the research and writing of this book possible.

Copyright 2020 by Smithsonian Institution. All rights reserved. Printed in the United States of America.

Cataloging-in-Publication data is on file with the Library of Congress. Paperback ISBN: 978-1-55753-940-3 epub ISBN: 978-1-55753-942-7 epdf ISBN: 978-1-55753-941-0

Cover image: Courtesy of the National Library of New Zealand.

To my wife, Mary: her love and support was invaluable and helped sustain me throughout the production of this book

CONTENTS

INTRODUCTION	1
CHAPTER 1	
The First Imperial Air Defense Schemes, 1918–1919	11
CHAPTER 2	
The Formation of the Royal Australian Air Force	
and the First Reassessments of Pacific Defenses, 1920–1921	37
CHAPTER 3	
The Empire's Air Defense: The Geddes Cuts of 1922,	
and the 1923 Imperial Conference and Their Influence	
on the Empire's Air Defense, 1922–1923	53
CHAPTER 4	
The Royal Air Force and Postwar Air Transport	
Defense Planning and the Airmail Scheme, 1919–1939	73
CHAPTER 5	
Airships and the Empire:	
Defense, Schemes, and Disaster, 1919–1930	93

CHAPTER 6	5
-----------	---

Air Defense and the Labour Party: Singapore Naval Base and the 1926 Imperial Conference, 1924–1926	117
CHAPTER 7 Imperial Air Mobility, the Salmond Report,	
and Air Marshal Trenchard's Last Salvo, 1927–1929	137
CHAPTER 8	
Depression and Disarmament, 1929–1933	163
CHAPTER 9	
The International Crises and Imperial Rearmament, 1934–1936	183
CHAPTER 10	
The Final Preparations, 1937–1940	213
EPILOGUE	241
Notes	255
Bibliography	291
Index	299
About the Author	309

INTRODUCTION

At approximately 10 o'clock on the morning of February 19, 1942, the Imperial Japanese Navy and Army Air Force opened a coordinated attack on Darwin, Australia. More than 188 aircraft launched from four aircraft carriers and fifty-five land-based bombers destroyed shipping and the harbor's transport and military infrastructure. Nearly an hour later, a subsequent raid by Japanese army bombers attacked the Royal Australian Air Force base at Parap, destroying numerous aircraft and base facilities. From February 1942 through November 1943, the Japanese conducted sixty-four more air attacks on Darwin. In addition, the Japanese carried out similar strikes on Townsville, Katherine, Windham, Derby, Broome, and Port Hedland. Even though Australia and New Zealand joined the war in 1939, their respective air forces were ill prepared at the outbreak of war with Japan because the majority of their military assets had been sent to the Middle East in support of British operations.

The study of the development of the air defense of Great Britain's Pacific Dominions demonstrates the difficulty of applying the emerging military aviation technology to the defense of the global British Empire during the interwar years. It also provides insight into the changing nature of the political relationship between the Dominions and Britain within the British imperial structure. At the end of World War I, both Australia and New Zealand secured independent control

BRITISH IMPERIAL AIR POWER

of their respective armed forces through their sacrifices made on the battlefields in the Middle East and Western Front and declining confidence in British military leadership. Similar to the other nations that participated in the war, the population of these two Dominions in the 1920s developed a strong aversion to war, not wishing to repeat the sacrifices made by their soldiers, sailors, and airmen on someone else's behalf. The economic dislocation experienced by the Dominions, created by the war and the Depression, meant little money was available to fund their respective air forces.¹ As a result, the empire's air services spent the entire interwar period attempting to create a comprehensive strategy in the face of these handicaps.

For many aviation advocates during the interwar period, the airplane represented a panacea to the imperial defense needs. They always prefaced their arguments with the word "potential." The airplane could potentially replace the navy; it could potentially provide substantial savings in defense expenditure; it could potentially move rapidly to threatened regions; and it could potentially defend the coast from attack or invasion. For all of these claims, there was no supporting empirical data. In short, aviation advocates offered the air force as a third option for the empire's defense, in an attempt to replace the Royal Navy and British Army.

At first glance, it is easy to accuse Britain and its Dominions of willful neglect of their armed forces during the interwar years. As early as 1934, however, Britain's military and political leadership understood the threat to peace and stability that Germany, Italy, and Japan represented, but the empire faced a difficult strategic problem in having a military force structure inadequate to defend the vast worldwide imperial possessions and the inability to pay for the needed expansion. The General Staff, to the best of their ability, began to implement the necessary steps required to expand their military forces to meet these threats and particularly directed funds to expand their respective air forces. Although the leadership was much criticized in the postwar period,

INTRODUCTION

their diligence paid dividends as early as 1940, when Britain's aircraft industry outpaced German aircraft production, and by 1944, the air forces of the British Empire experienced an expansion well beyond the perceived needs contemplated by the military and political leadership during the interwar period. Many of the policies adopted and implemented by the RAF, RAAF, and RNZAF during the interwar years made this expansion possible.

The Royal Australian Air Force (RAAF) experienced a fourfold increase from seventeen operational squadrons in 1939 to seventy-one in 1944. This included operational squadrons in Britain comprised of four heavy bomber, three medium/attack bomber, seven fighter, and one flying boat squadrons; in the Middle East there were two medium/ attack bomber and two fighter squadrons; and in the Pacific the RAAF fielded a force of fifty-five squadrons that included fourteen fighter, fifteen attack/medium bomber, eleven transport and liaison, eight seaplane, and seven heavy bomber squadrons.² In addition, more than 4,000 Australian pilots, air crew members, and mechanics served in Royal Air Force (RAF) units throughout the war.

Likewise, the smaller Royal New Zealand Air Force (RNZAF) sustained a similar expansion from four prewar squadrons to thirtythree squadrons by 1944. By the end of the war, New Zealand had based eight squadrons overseas, including seven in Britain, consisting of two fighter, three attack/medium bomber, one heavy bomber, and one flying boat squadrons, as well as one fighter squadron stationed in West Africa. Twenty-six RNZAF squadrons served in the Pacific theater and included thirteen fighter, six attack/medium bomber, two flying boat, two torpedo, two liaison/transport, and one dive-bomber squadrons that complemented American Army Air Forces, marine, and navy units throughout the entire Solomon Islands campaign.³ In addition, New Zealand provided more than 10,363 trained personnel for service in the Royal Air Force.⁴ The raids on Darwin and the dramatic expansion of the Pacific Dominions' air forces reflect the strategic decisions made during the interwar period concerning those nations' aerial defense. With the advantage of hindsight, the Japanese air attacks on Australia confirmed the judgment of the British chiefs of the Imperial General Staff that the greatest threat to the continent would be raids and that Japan's air power was incapable of a knockout blow. In addition, the chiefs' views were confirmed when the Japanese decided not to invade Australia in early 1942.⁵

By the beginning of the World War II, there were essentially two Australian and New Zealand air forces that emerged from the interwar period. One consisted of the units and personnel that served in Britain as part of the Royal Air Force and that fulfilled the Dominions' imperial commitments and prewar strategic assumptions. These units were trained, equipped, patterned after, and served alongside other RAF units. These Australian and New Zealand air force units represented the most significant contribution of men and materiel by the two Dominions in Western Europe during the war. Following the North African campaign, no Australian ground unit fought in Europe and only one New Zealand division served in the Italian campaign.

Australia and New Zealand's second air force were those RAAF and RNZAF units serving in the Pacific. These units represented the majority of the Dominions' air power and the changing nature of their relationship with Britain. Both nations developed and kept a high percentage of their units in the Pacific for self-defense rather than providing them for the greater "imperial" need. Moreover, the makeup of these units totally disregarded the prewar assumption of imperial uniformity. The RAAF units were an eclectic mix of British, Australian-built British and American designs, and American aircraft. In the case of New Zealand by the end of the war, all of its twenty-six squadrons were equipped exclusively with American aircraft. The rapid expansion

INTRODUCTION

of both air forces would not have been possible without the aircraft provided by the United States. The war underscored the Dominions' transition from the British to the American sphere of influence.

During the interwar period the Royal Air Force had to fight to maintain its independence. Likewise, the RAAF and RNZAF, because of political, economic, and technological circumstances, were largely "paper" air forces. In their effort to maintain their very existence, these imperial air forces presented themselves as a viable and economical third option in the defense of Britain's global empire.

The inspiration of this work comes out of my interest in the Royal Navy during the interwar period. The terrible loss of HMS Prince of Wales and Repulse to waves of Japanese torpedo bombers on December 10, 1941, and the surrender of 84,000 British and Commonwealth troops brought on many books about the failed "Fleet to Singapore" strategy conceived by Fleet Admiral John Jellicoe in 1919. The plan called for the construction of a major naval facility located at Singapore to service and house the bulk of the Royal Navy if a crisis developed in the Pacific against the Japanese. Ian McGibbon's Bluewater Rationale and Ian Hamill's The Strategic Illusion, major works, both illustrate the importance of Singapore serving as a defensive hub to protect Britain's eastern empire, particularly Australia and New Zealand. The Royal Air Force, equipped with inadequate aircraft that were few in number, tended to receive less treatment by historians. This changed in recent times with the publication of Christopher Shores and Brian Cull's thorough volume, Bloody Shambles: The Drift to War to the Fall of Singapore, and Graham Clayton's more focused study, Last Stand in Singapore: The Story of 488 Squadron RNZAF. One aspect of historical research on the RAF in the fall of Singapore points blame for the collapse at Air Marshal Sir Robert Brooke-Popham, Commander-in-Chief Far East. Appointed to the position in October 1941, he was on the job for less than four months before war broke out in the Pacific. Brooke-Popham's

role is only recently receiving a reevaluation in Peter Dye's *The Man Who Took the Rap: Sir Robert Brooke-Popham and the Fall of Singapore.* After reading these studies and others, I began to wonder if the RAF was making similar efforts concerning the defense of the Pacific empire. The answer was yes in an almost forgotten survey by Group Captain Arthur Bettington. Like Jellicoe, Bettington toured the Pacific Dominions in the immediate post–World War I period and made recommendations concerning the future of aerial defenses of the Dominions. So I became more interested in the Royal Air Force during the interwar period and wanted to trace its defense planning for the empire.

The vast majority of works on the RAF of the interwar period tend to emphasize British strategic bombing doctrine as conceived by Air Marshal Sir Hugh Trenchard. They trace a direct path to the massive formations of Halifax and Lancaster heavy bombers that laid waste to German cities. Four of the earliest works are Hilary St. George Saunders's Per Ardua: The Rise of British Air Power, 1911–1939; H. Montgomery Hyde's British Air Policy between the Wars, 1919–1939; Neville Jones's The Beginnings of Strategic Air Power: A History of the British Bomber Force, 1923-1939; and Barry Powers's Strategy without Slide-Rule: British Air Strategy, 1914-1939. In more recent times are Malcom Smith's British Air Strategy between the Wars, 1919-1939 and Tami Davis Biddle's Rhetoric and Reality in Air Warfare: The Evolution of British and American Ideas about Strategic Bombing, 1914–1945. All of these histories focus on the role that the RAF would play in European air space and do not address the position the RAF was attempting to forge in imperial defense. If strategic bombing was a keystone to RAF planning during the interwar period, why did Bomber Command have such horrible aircraft at the beginning of World War II? The bomber force would not see its first four-engine heavy bomber in the Short Stirling until the summer of 1940 at the height of the Battle of Britain. During the interwar period the RAF attempted to establish itself as a

INTRODUCTION

coequal in imperial defense beside the Royal Navy and British Army. Yes, Trenchard wrote about the need for a strategic bombing force, a duty in war unique to the RAF and a way to justify its continued independence. Trenchard was also a political realist and looked for any activity during the interwar period to keep the force autonomous from the army and navy. This has brought a number of interesting studies that examine the use of the RAF in the role of colonial control and policing. The most noted of these works include David Omissi's *Airpower and Colonial Control: The Royal Air Force 1919–1939* and Barry Renfrew's *Wings of Empire: The Forgotten Wars of the Royal Air Force, 1919–1939*.

To discover how air power developed in the Pacific, one must turn to historians from Australia and New Zealand for the answer. The opening chapters of the two official histories of the RAAF and RNZAF in World War II in Douglas Gillison's Australia in the War of 1939-1945, Series 3, Air, vol. I, Royal Australian Air Force, 1939-1942 and Sqd. Ldr. J. M. S. Ross's New Zealand in the Second World War 1939-1945: The Royal New Zealand outline the activities of the origins, founding, and interwar activities of their respective Dominion's air forces. C. D. Coulthard-Clark's The Third Brother: The Royal Australian Air Force 1921–1939 is an excellent and comprehensive study of the RAAF between the wars. John McCarthy's Australia and Imperial Defense: A Study in Air and Sea Power, 1918–1939 and W. David McIntyre's New Zealand Prepares for War: Defence Policy, 1919-39 are both wide-ranging examinations of the defense policies of Australia and New Zealand and both demonstrate the importance of these forces in the defense of their region of the Pacific.

Now that a full century has passed since the end of World War I, this work, *British Imperial Air Power: The Royal Air Forces and the Defense* of Australia and New Zealand Between the World Wars, hopes to provide a fresh and comprehensive examination of the role that air power would play in the Pacific.

BRITISH IMPERIAL AIR POWER

I alone am responsible for this manuscript but no work is the sole product of its author. During the course of its research and writing, I relied on numerous individuals for assistance and it could not be completed without them. The author thanks those most responsible in support of this work. The following chairs of the Aeronautics Division at the Smithsonian Institution's National Air and Space Museum, Tom Crouch, Dominick Pisano, Peter L. Jakab, F. Robert van der Linden, Russell Lee, and Jeremy Kinney for providing the time, financial assistance, and opportunity to conduct research at various archives throughout the world. To Nicholas Partridge who helped shepherd the book's contract to completion with Purdue University Press. Without their support, this work would not have been possible. I would particularly like to thank F. Robert van der Linden who read numerous drafts and was always a sounding board for my thoughts as I developed the chapters of my book. To Dr. Hines Hall at Auburn University whose help and guidance was critical to my academic career.

The author also thanks the professional archival and library staffs from those in the front line managing the reference desk to the individuals deep in the stacks pulling records at the National Air and Space Museum, Smithsonian Institution; the National Archives, Kew; the National Archives of Australia at Canberra and Melbourne; and the Archives of New Zealand, Wellington; without them the historian's task is impossible. I wish that I could name all of you individually in recognition of the truly valuable work that you do. In addition, I would like to thank the staff members from the following museums: the Australian War Memorial, the Royal Air Force Museum, the Royal Australian and Royal New Zealand Air Force Museums, the Yamato Museum, the National Portrait Gallery, London, and the National Library of New Zealand who provided all of the illustrations for this work.

In addition, Dr. Ron Wilkerson who was the first teacher to encourage my interest in history and whose enthusiasm for history

INTRODUCTION

was inspiring; and the unselfish guidance of Dr. Brian Farrell of the National University of Singapore who helped me unlock the files during my very first research trip to the National Archives at Kew.

I would also like to thank my family, my sister Cynthia, and my brother Todd for their support and encouragement that kept me grounded during the course of my studies. My ultimate thanks go to my father, Stephen, and mother, Hildegard, whose love, support, and guidance sustain my every endeavor.

CHAPTER 1

THE FIRST IMPERIAL AIR DEFENSE SCHEMES, 1918–1919

It will be appreciated that the complexity of the problem is increased by the fact that in the case of the Royal Air Force there is no pre-war experience to which reference can be made.¹

-Lord William Douglas Weir

At the end of World War I, Britain's leaders had to reconsider the traditional pillars of imperial foreign policy: a balance of power on the European continent, free and clear trade routes to imperial possessions and the Dominions, and superiority of the Royal Navy on the seas. Germany's defeat, along with the revolution in Russia, created a power vacuum in Europe. Decimated by four years of war, the European powers could not fill this void, though some tried. The rising influence of the United States and imperial Japan tipped the balance of power away from Britain in the Pacific, although Britain may well have lost its influence before the war in its efforts to counter the growing threat of the Imperial German Fleet in European waters.

To add to the British circumstances, Britain's global territorial responsibilities actually expanded in the war's aftermath. By the end of 1918, a military expedition to assist the White Russians against the Bolsheviks, control of new Middle Eastern mandates, and the suppression of nationalist movements throughout the empire placed additional military burdens on Britain. Labor unrest, mutinies, and the Irish uprising further complicated Britain's postwar military circumstances at home. Winston Churchill summed up the situation when he stated, "I cannot too strongly press on the Government the danger, the extreme danger, of His Majesty's Army being spread all over the world, strong nowhere and weak everywhere."² The huge national debt, created by the war, limited many military options that had been available in the past. Chief of the Air Staff Sir Hugh Trenchard echoed Churchill's warnings from the air force's perspective:

The necessity for economy remains unchanged, but the peaceful conditions hoped for have been far from realized. So great a portion of the world has been pervaded by the spirit of unrest, and so largely have the commitments of the Empire been increased by the results of the war...³

The Dominions further compounded Britain's foreign and military policy difficulties. During the war, the Dominions' prime ministers demanded and were promised inclusion in policy decisions that potentially affected their respective states. At the same time, Australia and New Zealand pursued courses of action that ran counter to traditional British interests, such as claiming mandate responsibility over regional Pacific islands that were of no interest in London. This placed the British Empire in direct competition with Japan. While the Dominions demanded greater independence with regard to their emerging foreign policies, they insisted that Great Britain remain committed to their defense.

With Germany defeated and Russia enmeshed in civil war, British leaders found a new threat to the empire: Britain's Pacific ally, Japan. The Anglo-Japanese Naval Alliance, signed in January 1902, allowed the Royal Navy to remain concentrated in European waters to counter the growth of the Imperial German Navy. In addition, the agreement helped to defend against any threat to British and Japanese interests in the Pacific from Russian expansion. During the war, the agreement proved its value when Japanese warships provided escorts to the troopships filled with Australians and New Zealanders on their way to the Middle Eastern and Western fronts and even suffered some losses in the Mediterranean. However, in the postwar environment, could the agreement remain intact? Many thought not.

In assessing the postwar world, Trenchard remarked about the Japanese:

It is not improbable after the storm in Europe, the centre of pressure of unrest will move eastwards and that the future will find it located in China and Japan. There would appear, therefore, to be grounds for an increase of our naval strength in the Pacific and pari passu for the building up of a suitable air force.

These considerations have already been weighted in Australia and New Zealand, and both dominions have intimated their desire for air services.⁴

Australian prime minister William "Billy" Hughes did not help Britain's relationship with Japan. While making his way to Europe in June 1918, he made a speech in New York City in which he proposed a new vision for the future of Pacific security:

In order to ensure the existence of Australia as a commonwealth of federal states of free people, the Australians must be provided with a strong guarantee against invasion, and such a guarantee might be found in an Australian Monroe doctrine in the South Pacific.

To ensure the safety of Australian territory, it is important that control over the islands on the eastern and northern coasts of Australia should either be taken over by Australia herself, or entrusted to some brave and civilized State. It is the United States to which the Australians look for assistance in the matter.⁵

Hughes's comments were as unpopular in Britain as they were in Japan. For the first time Australians looked to a power other than Britain for their security. Hughes imagined an American Pacific Monroe Doctrine backed up by American naval and military power or at the very least the creation of a "hands off the Australian Pacific" policy. This position staked out by Hughes in New York continued to be his steadfast posture at the Versailles Peace Conference. During the war, Australia and Japan expanded their spheres of influence in the Pacific. The Australians, who felt threatened by the German presence in New Guinea, took control of the island early in the war. In addition, a joint Australian and New Zealand force captured Samoa. Meanwhile, the Japanese, taking advantage of the German weakness, moved south and occupied the Marshall and Caroline island groups.

These actions disrupted the peace discussions at Versailles in January 1919. When Prime Minister Hughes arrived in Paris, he fully intended to maintain Australian sovereignty over New Guinea. He believed that all of the northern islands were essential for Australian security. Hughes's claims to the islands and "Pacific Monroe Doctrine" directly clashed with President Wilson's "just peace" based on his Fourteen Points and position that no nation should benefit from victory. Concerning Australian claims in the Pacific, Hughes's reaction was recorded in the minutes of the Imperial War Cabinet meeting that took place on December 30, 1918. Hughes opposed Wilson's position of independence for the former German colonies and argued that Wilson did not understand how essential these islands were for Australia's own security.⁶

In January 1919, the meetings at Versailles addressed the topic of Germany's Pacific colonies. At a meeting of the Council of Ten, Hughes stated his uncompromising position:

Strategically the Pacific Islands encompass Australia like a fortress . . . this is a string of islands suitable for coaling and submarine bases, from which Australia could be attacked. If there were at the very door of Australia a potential or actual enemy, Australia could not feel safe. The islands are as necessary to Australia as water to a city. If they were in the hands of a superior, there would be no peace for Australia.⁷

Hughes's concerns did not impress President Wilson who believed that the old notions of national security would not be applicable in the postwar world and that Hughes's position was "based on a fundamental lack of faith in the League of Nations."⁸ On this point, Hughes agreed with President Wilson, for Hughes placed little faith in the league's ability to control "bad neighbors."⁹ Because of Wilson's position, Hughes likely viewed the U.S. support in Pacific security as unreliable and returned to the position that Australian security was still best served within the British imperial system.

The stance taken by Hughes at Versailles placed British prime minister David Lloyd George in a difficult position between attempting to sustain imperial unity by supporting Australian territorial claims and at the same time maintaining a constructive relationship with Wilson. South African prime minister Ian Smuts proposed a compromise. Smuts designed the mandate system, which placed the former German colonies into three categories based on their social and economic development and geographical location. The Smuts compromise became Article 22 of the League of Nations Compact. Under a Class "C" mandate classification, the administration of New Guinea became Australia's responsibility:

Owing to the sparseness of their population, their small size, or their remoteness from centers of civilisation, or their geographical continuity to the territory of the Mandatory, and other circumstances, can best be administered under the laws of the Mandatory as an integral portion of its territory.¹⁰

The only power remaining in the Pacific that threatened peace, from the Dominions' perspective, was Japan. Whereas Australia and New Zealand considered their own actions as defensive, they viewed Japanese annexation of the Marshall and Caroline Islands as aggressive expansionism. New Zealand's defense minister, Sir James Allen, believed that the British Empire would "regret" letting the Japanese remain in control of the two island groups.¹¹

In a cable, Monroe Furguson, governor general of Australia, also expressed concerns that Japanese expansionism was a threat to the newly formed League of Nations and the agreements made at Versailles. In Furguson's opinion, the Japanese expansion into the central Pacific was challenging decisions made at Versailles because "she is a powerful nation having at her disposal great military resources [and] cannot be allowed to flout the solemn decision of the Conference."¹²

With the emerging diplomatic tension between the British and Japanese empires exacerbated by Australia's political leadership, Britain's military began to evaluate how to defend the Pacific. Early in 1919, former First Sea Lord Admiral John Jellicoe left on an imperial cruise with instructions to determine the naval defense of the empire. At the same time, the leadership of the Royal Air Force began to examine their service's future role in peacetime defense of the empire. The process of the transition to peacetime operations would be more difficult for the Royal Air Force compared to the army or navy. Created during the war by combining the Royal Flying Corps and Royal Naval Air Service, the RAF had no peacetime tradition such as providing security in some remote outpost of the empire or showing the flag during a diplomatic cruise. The new service faced a hostile army and navy wanting to break apart the RAF and reclaim their respective air branches that were taken from them during the war. The air force's leadership looked to the emerging antagonism with the Japanese as a basis to formulate its future responsibilities in defense of the empire.

The president of the Air Council, Lord Weir, asserted in December 1918 that the Royal Air Force would take an important part in imperial defense. Weir argued that aviation had proved its value during the war but its future potential was unclear because the current state of aircraft development was still in its "infancy." For Weir, air power in time would become an equal partner in imperial defense alongside the army and the navy, and "it will be necessary to provide an Air Force of such strength as will amply meet the needs of the Empire."¹³

Less than a month following the signing of the Armistice on November 11, 1918, Trenchard, newly appointed chief of the Air Staff, issued a memorandum outlining the RAF's vision of postwar defense:

The Imperial aspects of the question [of air defense] cannot be overrated and must be considered equally with those pertaining to purely national requirements; the foundations of the air power of the British Empire must be well and truly laid.¹⁴

From the scale and scope of the memorandum, it appears that the Air Staff was clearly working on the imperial air defense issues well before the war's end. Trenchard's memorandum delineated how the RAF would participate in and potentially come to dominate the defense responsibilities for the empire. The Air Staff examined how to utilize the air force in small and large conflicts while maintaining its independence from the navy and army. It outlined specific force structures and dispositions throughout the empire and argued that the Dominions' air services would need to play a direct and vital role in the future air defense of the empire.

The flying distances were truly daunting, especially for the limited capabilities of the aircraft of the day. Trenchard recognized that the state of aviation technology limited the effectiveness of air power and force projection, "owing to the comparatively short radius of action of contemporary aircraft."¹⁵ The Air Ministry plotted a route from London to Australia that required 59 stops—one every 200 miles—and covered the 11,500 miles to Darwin. Nevertheless, this did not deter Trenchard's belief in the future potential of air power: "we possess a rapid and economical instrument by which to ensure peace and good government in our outer Empire."¹⁶

A vital element of the overall air defense of the empire from the perspective of the Royal Air Force was the participation of each of the Dominions in any scheme that would emerge in the postwar period. Trenchard wrote that both Pacific Dominions were interested in establishing air forces as a part of their own security against a threat from Japan.¹⁷

The Air Ministry also felt that the Dominions' air forces would need to have aircraft and training similar to the RAF. This would allow the two forces, even though separated by vast geographic distances, easily to mesh at any crisis spot.

Lord Weir in a memorandum to the War Cabinet emphasized the point that imperial defense would become ever more dependent upon Dominion participation, and he felt that in the future the airplane would be a critical element in that defense. Trenchard also believed that the RAF could not move forward in any imperial air defense scheme until the Dominions made some decision about the size and form of their own air forces.¹⁸ Trenchard's position regarding Dominion participation was different from the commanders of the Royal Navy. He looked upon the Dominions as full partners in aerial defense rather than providing adjunct forces:

The Dominions should be approached with a view to assistance in reconstituting the air staff into an Imperial Air Staff on the lines of the Imperial General Staff.

While it is not desired in any way to accentuate Eastern political complexities, the pressure of unrest in this sphere must be faced. In the past the fears of Australia resulted in the formation of the nucleus of the Australian Navy, and Australia has already inaugurated her own Air Service which her distance from the Mother Country renders all important.¹⁹

Trenchard envisioned an Imperial Air Force with all the imperial members acting in unison. Such an agreement with the Dominions could extend the empire's air defense capabilities while limiting the financial burden for Britain and the Royal Air Force. Trenchard argued that:

Too much stress cannot be laid on the importance of unity and the necessity for organising these aerial resources on similar lines . . . both sides must make every effort to strengthen until a state of perfect and efficient cooperation exists between the various components of the British Empire.

The first essential is that methods of training and organisation and types of machines and equipment should be standardised. Each Dominion would require a Central School at which flying, navigation, aerial gunnery and bomb dropping, cooperation with land and sea forces, meteorology and

BRITISH IMPERIAL AIR POWER

photography would be taught on similar lines. As types of machines improve replacements should be made on a proportionate scale, and interchange of personnel should take place so that training and operation methods, improvements due to innovation, etc., may be co-ordinated throughout the whole of the Imperial Air Force. Thus, if necessity arises, reinforcements can be transferred from one quarter of the globe to another, and on arrival at their destination will fit automatically into their appointed places and carry out their appointed duties.²⁰

The need for imperial unity was a consistent theme from the leaders within the Air Ministry. Once again, Frederick Sykes, assistant air minister, emphasized this point in a speech before a luncheon of the London Chamber of Commerce. Sykes believed that "air forces have become and will remain a leading consideration in questions of national and Imperial defence. The day is indeed not far distant when aircraft will rank equally... with other and older forms of war material."²¹

The Air Ministry wasted no time contacting the Australians about the extent of their participation in an Imperial Air Force. On January 14, 1919, Major Clive L. Baillieu, the Air Ministry's Australian liaison officer, wrote to Australian Imperial Force Headquarters and requested that Australia provide information or plans regarding the air force strength relating to naval and army needs, personnel numbers and training methods, equipment needs, standardization of training and equipment, and commercial aviation plans in order to provide a reserve of pilots and mechanics.²²

The concept of imperial aviation unity was not new. The origins of Australian military aviation dated back to 1915 when the Commonwealth government formed the Australian Flying Corps to cooperate with imperial troops operating in the Middle East. By the end of the war, they had a force of more than 280 pilots and 3,000 support personnel. In the postwar world, the Australian government saw the value of an aerial striking force and continued funding of an air force.

Australian leaders did not question the need to participate in the empire's defense, but they did question the scale and scope of their participation and continually reassessed the degree of support they could provide. There was going to be an Australian Air Service as a component of imperial defense. The debates surrounding the role and formation of an Australian Air Force were similar to those of the Royal Air Force's role taking place in Britain.

Because the strategic need to attack an enemy's industrial and communication capacity by air did not exist in the South Pacific, the Australian air power advocates were in a much weaker position relative to the Australian Army and Royal Australian Navy. The air service would be required to act in a subordinate role to the other services. Their aircraft would operate tactically, providing air cover for ground or naval forces on the defensive and striking enemy shipping or ground troops on the offensive.

Before the British asked the question regarding Australian involvement in air defense, the Australians were considering their capability and the strength of their air arm. In a meeting of the Australian Council of Defence in early November 1918, the central discussion on the agenda was the future form of an Australian Air Service. The chief of the Australian General Staff, Major General John G. Legge, "thought that there would be less extravagance if Australia had a[n] [air] branch under the control of the Navy and Military."²³ In the immediate postwar period, the question of controlling Australia's air forces remained the central debate in the Council of Defence:

The provision of a nucleus of an Air Force [needed] to meet certain fundamental needs of the Navy and the Army. This can be done for an annual expenditure of £1,100,000.

The Air Force recommended is auxiliary to the Navy and the Army and is not an independent Force. It provides merely for the minimum needs of existing defence services. Bearing in mind the economic condition of the country and the fact that time is pressing, the Council considers that the provision of these minimum needs should be undertaken first but, consistent with this provision, the development of aviation should proceed—for instance by the encouragement of commercial aviation.

In the opinion of the Council, this minimum expenditure will give Australia a "sporting chance" of holding out till British command of the Pacific can be established. With any less expenditure there would be no chance to security to Australia in the event of War [with Japan].²⁴

During these formative months following the war, the members of the Council of Defence agreed that it was important that Australia have significant air forces but they would not accept the creation of a separate air force for the Commonwealth. For Australia's military leadership the principal defense of the Dominion was still dependent upon the army and the navy. Because there was no strategic justification for a separate air force, aircraft would have an important role to play but would remain subordinate or auxiliary to the ground and sea forces. In addition, Australia's leadership was not confident that air power alone could "assure" the national defense.²⁵

Australia's navy and army leaders decided to split the Dominion's air assets between the two services and share training facilities. They felt that the army would ultimately require seven fighter squadrons, six reconnaissance squadrons, and two heavy bomber squadrons. The navy would need one torpedo squadron, one shipborne aircraft squadron, and eleven flying boat squadrons.²⁶ These twenty-eight squadrons,

they predicted, would be the minimum requirement to give Australia a "sporting chance." Ultimately, these squadrons were viewed only as air auxiliaries to the naval and military forces.

In the postwar economic environment, the proposed annual expenditure of $\pounds 1,100,000$ was an extravagant if not absurd amount for the Australians. Economic realities would soon force them to halve this amount of money for an air force. It was reported in April 1919 that

A scheme of aerial defence, which has been drafted by the Commonwealth Government, contemplates the establishment of various aviation schools with squadrons of Aeroplanes and seaplanes, together with an airship section, the personnel of the scheme numbering 1,400. There will be an initial expenditure of \pounds 500,000, and an annual expenditure of the same amount.²⁷

Undeterred by the reduction of the military funding, the Council of Defence created a uniquely Australian solution to the problem. They envisioned the creation of a dual force consisting of a permanent air force and an aviation militia or the "Citizen Air Force."

It is proposed to establish both permanent and Citizen Force Units. Permanent units will be required for Naval centres, for isolated squadrons, and for training squadrons. It is proposed that 2 Reconnoitering Squadrons, 1 Flying-boat Squadron, to be formed next year will be on the Citizen Force basis. The difficulty of a Citizen Force, in the future, will be the time required for continuous training for a pilot which takes about one year.

Air Units will be organised as part of an Australian Air Corps. This Corps will be formed in two wings, one for the Navy and one for the Army. The Corps will be controlled separately from the Navy or Army by the Minister of Defence. An Air Council composed of sailors and soldiers detailed from the Naval and Military Boards will advise upon principle; the administrative control of the Air Corps will be in the hands of an Air Board, subordinate to the Air Council, and composed of flying officers.²⁸

The value of the Citizen Air Force would be continually examined throughout the interwar period. The formation of the Volunteer Reserve in Britain originated from this Australian idea.

Britain's military leadership did not forget New Zealand. They recognized that this Dominion's fate was closely linked to that of Australia. In 1919, Trenchard stated:

The possibility of unrest in the East affects New Zealand equally with Australia. The length of her coast line makes her peculiarly vulnerable to attack and her distance from the Mother Country makes it necessary for her to be able to hold her own until the arrival of available reinforcements.²⁹

Early in 1919, New Zealand's defense minister, Sir James Allen, requested that the Royal Air Force send an adviser to New Zealand to provide recommendations for the Dominion's postwar air defense and aviation policy. The RAF sent Group Captain Arthur Vere Bettington to assess New Zealand's state of affairs. Bettington issued a lengthy report to Allen in July that echoed many of the positions in Trenchard's memoranda on "Air Power Requirements of Empire." But like many of these early postwar planning documents, Bettington's recommendations were not realistic and went far beyond the scale and scope that New Zealand's political leaders or budgets were prepared to handle.



Figure 1.1. Lt. Col. Arthur Bettington (right) with New Zealand aviation pioneer Sir Henry Wigram (left) at the Sockburn Aerodrome, New Zealand in 1919. Following World War I, Bettington toured Australia and New Zealand to determine the two Dominions' aerial defense requirements. His subsequent report and recommendations laid the foundation of imperial interwar aerial defense strategy. (Photograph courtesy of Air Force Museum of New Zealand)

With the war over in Europe, Bettington argued that international instability would continue because of the vacuum left in Europe by the defeat of the Central Powers. Bettington reiterated Trenchard's position that Japan might threaten peace in the Pacific:

It is impossible to reconcile the aspirations of all the nations. Signs of this are already visible with certain Eastern nations who have openly claimed equal rights. The Japanese may be persistent in its demands for equality . . . for this reason, also as a result of the elimination in the near future of the Central European Empires as warlike groups, the centre of unrest in the world may now be assumed to have moved from Western Europe to the Pacific.³⁰

Bettington warned that the potential antagonism between the British Empire and Japan would place New Zealand in the middle of any conflict between the two imperial powers. No longer could they enjoy the protection afforded by vast distance from the traditional sources of conflict in Europe:

While it is not desired to appear unduly pessimistic or to pose as a scaremonger, the Eastern political complexities and unrest should be squarely faced. The geographical position of this Dominion renders an efficient defence force a greater necessity than in the past. . . . The distance from the Mother Country is so great that considerable time must elapse before assistance could be expected from that quarter. The nearest point from which help might arrive is over 1200 miles away and even then it is by no means unlikely that Australia might find herself threatened at the same time and not in a position to give aid.³¹

Bettington repeated the common theme among the air power advocates that an air force would be an important third option for imperial defense alongside the Royal Navy and British Army. Bettington summarized this point:

Highly trained Air Forces are now essential components of all efficient defensive and fighting forces, as aviation provides a new and distinct striking force of temendous [*sic*] potentiality. . . . A Nation thinking in three dimensions will lead and defeat a nation thinking in two, both in time of peace and war.³²

Bettington underscored Trenchard's proposal that New Zealand should participate in the Imperial Air Force. In addition, there was an important connection between civil and military aviation if New Zealand were to participate in imperial affairs. Bettington also stressed that New Zealand's air force should be prepared to render assistance to any part of the empire.

So that New Zealand's aerial policy became a reality, Bettington strongly recommended that the Dominion should take immediate steps to build an air force compatible with that of the British and Australian air forces by standardizing their training, equipment, and procedures.³³

New Zealand's meager industrial capacity made the Dominion dependent upon Britain for its aviation equipment and infrastructure. New Zealand would need to purchase all of this material from Britain to maintain compatibility with its imperial partners, Bettington reported:

It may be assumed that for some years to come at least, New Zealand will not be in a position to manufacture anything more than the actual aeroplane or seaplane and will have to rely on imported engines, guns, bombs, wireless sets, navigational and other aircraft instruments, etc. As the close co-ordination of aircraft equipment of the British Empire is of such vital importance, it is proposed that in the first instance the complete machines and engines with all their component parts and armament be purchased in England, in consultation with the Air Ministry, due regard being given to the standardisation, as far as practicable, with the policy of Australia and the rest of the Empire.³⁴

In retrospect, Bettington's proposal for New Zealand's aerial force structure seems modest—seeking seven squadrons that included one fighter, one day and night bombing, one scout, one torpedo, and two flying boat squadrons, two air bases, and one training depot.³⁵ Bettington argued that this force structure was the minimum required to defend the strategic points on New Zealand's North and South Islands.^{36*}

Reasonable as the proposals seemed, New Zealand's leaders were not prepared to adopt Bettington's scheme. Following a review of the plan by New Zealand's cabinet, Minister of Defence Allen informed him that it was "impracticable" for the Dominion to spend the funds called for to implement the civil and military aviation scheme that he outlined.³⁷

In response to Allen's admission that New Zealand could not afford extensive aerial expenditures, Bettington sent him a number of suggestions that further limited these defense burdens. He proposed to Allen a reduction in his recommendation by three or four squadrons, hoping that this proposition might address the fiscal concerns of the cabinet. Once again, he received a negative reply.

By the end of August 1919, Bettington counseled New Zealand's cabinet that the Dominion still needed to participate in the imperial partnership. He asked that the cabinet consider appointing an air liaison officer to track developments in commercial and military aviation and establish or subsidize an aviation school on the North Island near Auckland and on the South Island near Christchurch. Finally, he recommended that veteran New Zealanders with aviation training should be kept on a reserve list and trained annually on the latest developments.³⁸

a. Wellington and the Cook Strait

- c. Christchurch and Lyttelton
- d. The northernmost part of New Zealand including Awanui
- e. Invercargill and Awarua
- f. The coal fields of Westport and Graymouth
- g. Dunedin and Port Chalmers

[&]quot;Beddington considered the following as the "chief nerve" centers and the most likely to be attacked:

b. Auckland

To defend these strategic points, he proposed New Zealand establish first-class air bases at Wellington, Auckland, Christchurch, and Dunedin.

For Bettington, these three steps were the minimum actions that New Zealand could take to maintain a credible aerial presence.

To this end, New Zealand's government agreed. To create a reserve of aviators and aviation mechanics, the government devised a scheme to provide financial subsidies to the Sockburn and Kohimarama flying schools. During the war, both schools had provided preliminary training for New Zealanders who later served in the Royal Air Force. It became these two schools' responsibility to train an active reserve of 200 pilots, to provide periodic flight training and lectures, and to train a cadre of aircraft mechanics. In the end, New Zealand's government was only prepared to spend £25,000 annually on any form of aviation, civil or military.³⁹

Early in 1919, while the Australians and New Zealanders considered their own air defense plans, aerial strategists in London devised an idea that they hoped would address the fiscal concerns of the Dominions relating to the creation of their aerial defense and striking force and ensure that they would begin working toward the unified Imperial Air Force: British leaders initiated the transfer or gift of 100 surplus aircraft to each Dominion. The origin of the aircraft gift was Trenchard's idea. Under-Secretary of State for Air Gen. John Edward Bernard Seely took the idea to the Imperial War Cabinet. For Seely, a gift of aircraft to the Dominions provided "an opportunity of giving assistance to Dominions which will be valued by them and which should be of great use in the general interest of the defence of the Empire by Air."⁴⁰

On May 29, 1919, the War Cabinet approved Seely's proposal and decided to offer each Dominion government 100 surplus aircraft out of the thousands of serviceable aircraft left over at the end of the war. The War Cabinet decided that this gift would be available to any Dominion or colonial government that required aircraft and that as much publicity as possible should be generated on behalf of the government.⁴¹

On June 4, 1919, cables went out to the Dominions and Colonies informing their respective cabinets that the Air Ministry was proposing to send each of them aircraft to become the core of their respective air forces. The gift of aircraft to the Dominions was well timed. Without monetary resources or established aircraft facilities and with limited military equipment at home, the transfer of aircraft would allow the Dominions to form the nucleus of their own air arms.

The Australians were most eager to obtain the aircraft offered by Britain. On June 21, 1919, Brig. Gen. Thomas A. Blamey submitted the initial request for four squadrons to "form the nucleus of the Australian Air Force."⁴² The British Air Staff recommended that this Australian force should consist of twenty-four Sopwith Snipes, twenty-four Bristol Fighters, eighteen de Havilland D.H. 9s, and ten Vickers Vimy bombers, one of the larger aircraft in the Royal Air Force's inventory. For the Australians, the gift amounted to more than £624,000.⁴³ In addition, the British Air Staff made additional suggestions regarding the importance of the Australians operating similar equipment as the British.

On July 9, 1919, in a letter from Lt. Col. H. Macquire, the RAF's liaison officer to the Australian government, to Australian defense minister Sir George Pearce, Macquire made additional suggestions regarding equipment to be sent to Australia:

With reference to the proposed gift of 100 Aeroplanes by H.M. Government and the equipment of 4 Squadrons of the Australian Air Force, I forward the following proposals.

That the following types and numbers of machines should be asked for:

35 AVROS. Training

30 S.E. 5 Viper engines in lieu of Snipes asked for.

35 D.H.9a, in lieu of Squadron D.H.9a with Rolls engines asked for. $^{\rm 44}$



Figure 1.2. Royal Aircraft Factory S.E.5a #A2-1 at Yanakie, Victoria. This aircraft was one of 35 S.E.5as given to the RAAF by the British government as part of the 1920 Imperial Gift. The RAAF's leadership requested the S.E.5a over the Sopwith Snipe because the aircraft was more stable and easier to fly. (Photograph courtesy of the Australian War Memorial)

The Avro 504 would become the principal training aircraft for the infant Australian Air Service. The replacement of the Sopwith Snipe with the S.E.5a indicates Macquire's preference for a safer and more stable aircraft.

For Australia, the 100-airplane gift was only the beginning of its air force. Prime Minister Hughes envisioned the creation of an Australian aircraft-manufacturing sector whereby the 100 aircraft nucleus would be supplemented over time by more than 200 aircraft built exclusively in the Dominion. On July 4, 1919, Hughes wrote Prime Minister Lloyd George:

In reference to your request that I should outline my views as to the manufacture of AEROPLANES in Australia and its relation to the Air Defence of Australia: My view is that the best policy would be for the Commonwealth Government to arrange for some British firm of repute to commence manufacture in Australia. To this end, I would recommend that arrangements should be with such a firm, and that we should stipulate for the right to take over the works on equitable terms at any time, and also to have the right of control of such works during war.⁴⁵

In an August 4, 1919, cable to Defence Minister Pearce, Hughes approved Australia's acceptance of the aircraft gift from Britain along with his desire that construction of aircraft should take place in Australia.⁴⁶ However, few things are truly free; Australia had to cover the $\pounds 25,000$ to $\pounds 30,000$ freight expense to transport the aircraft to the Commonwealth.⁴⁷

The plan to supplement the aircraft gift with Australian-built aircraft illustrated Australia's paramount desire to assert its independence. The Committee of Defence established an Aircraft Construction Committee to guide the creation of an Australian aircraft industry. In its first report, the newly formed body recognized the importance and limitations for Australia in the sphere of manufacturing. The Australian government decided that they should produce dual-purpose aircraft such as the de Havilland D.H.4, capable of both bombing and aerial fighting. It was also important that the materials used to construct these aircraft should be from local sources. Though the committee making these recommendations agreed on the use of British equipment, a small fissure emerged. The Australian Air Board, established in 1920 to control and administer the air force according to the policies established by the Air Council, advised for the "adoption of American 'Liberty' engines in preference to a British type considering simplicity of manufacture."48 This was the first time, but not the last, Australians went outside the imperial system for aircraft equipment. In 1938, a more serious rift would take place over the adoption of American equipment.

The gift of 100 aircraft from the British government was not received in New Zealand with the same enthusiasm as it was in Australia. When the British submitted their offer to New Zealand, Colonel Bettington was writing his plan to develop military aviation in New Zealand. In a June 5, 1919, letter to Sir James Allen, Bettington urged that the Dominion accept the British government's offer, "as keen competition for the available supplies was likely."⁴⁹

On August 27, 1919, Defence Minister Allen informed Bettington that New Zealand did not have the means to service a hundred machines and that the offer would have to be declined.⁵⁰ Allen's rejection of the British offer was greeted with surprise and disbelief in Britain. Stanley Spooner, founder and editor of *Flight*, commented:

Sir J. Allen, the New Zealand Minister of Defence, says that the British offer of Aeroplanes is "undoubtedly valuable," representing about £500,000, but its acceptance depends upon the policy of New Zealand, which is not yet determined. The *Wellington Post*, commenting upon this statement, says that the offer of Aeroplanes should remind New Zealand equally of British generosity and of her own responsibilities. Admitted, in partnership with the Empire, to the League of Nations, the Dominions should rise to the full status of manhood and accept the gifts as a trust for the purposes for which they are offered and undertake the fundamental obligation of self-defence.

What does the Minister of Defence mean exactly when he says that the policy of New Zealand has not been determined and that upon this determination depends the acceptance or rejection of the Mother Country's gift? Does he mean to convey that it is possible New Zealand, which has borne such a gallant part in the War, will rest content under the shadow of the League of Nations and take no part in preparing to defend herself or the Empire? It is impossible to say, but we do think some more adequate explanation is called for of why it should be necessary to publicly hint at the refusal of the free gift of aircraft which ought to form an essential part of the Dominions' contribution to Empire defence. As to the determination of policy, it again seems to us that it is really about time the constituents of Empire had formulated their policy sufficiently to be able to say whether or not aerial defence is to form a part of the programme.⁵¹

Bettington told the New Zealanders that he thought the government would be ill advised not to accept at least some of the aeroplanes offered, and that a certain number of these could be used in the periodical training given to his suggested Reserve force.⁵² Facing pressure from the editorial writers and the British government, in September 1919, Allen accepted thirty-eight gift aircraft, twenty Avro 504 trainers, nine de Havilland D.H.9as, nine S.E.5a fighters, and six large flying patrol boats.⁵³ The British government accepted the New Zealanders' request to limit the number of aircraft in the original offer. Owing to the delay in its acceptance, only a reduced number of machines arrived in New Zealand in 1921: twenty Avro 504s, nine D.H.9s, two D.H.4s, and two Bristol Fighters.⁵⁴

The early postwar plans and gift of aircraft to Australia and New Zealand had no realistic or immediate effect on the defense of the Dominions in 1919. There was no air threat. The vast distances that the British faced to move aircraft to the South Pacific were just as daunting to any potential enemy. Nevertheless, these plans and the gift served a useful purpose. Defense planners began to examine the use of air power to defend the eastern empire. The idea of a ready reserve or cadre of pilots and mechanics in the Dominions would later transform itself into the Empire Air Training Scheme, which trained tens of thousands of pilots and aircrew for service in World War II. Moreover, the plans laid the foundation for an aviation industry. Finally, the schemes encouraged the importance of an "imperial" standard for pilot training, aerial tactics, and equipment. The ideas outlined by the early planners remained constant themes in air defense throughout the interwar years.