FEARLESS

For Sandra

FEARLESS

The extraordinary untold story of New Zealand's Great War airmen

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CONTENTS

INTRODUCTION

Fearless: The extraordinary untold story of New Zealand's Great War airmen is part of the First World War Centenary History series of publications, overseen by the Ministry for Culture and Heritage. One of this project's chief allures is that there is no single book-length study of New Zealand's contribution to the 1914–18 air war — no official history, no academic monograph, not even a military aviation enthusiast's pamphlet.[1] Moreover, in the 100 years following the conflict, only one Great War airman, Alfred Kingsford, published his memoirs.[2] This is incredible, especially when you consider the mountain of books spawned by New Zealand's Second World War aviation experience.[3]

Only slightly offsetting this dearth of secondary literature are three biographies of New Zealand airmen which contain chapters covering their Great War flying careers: G. H. Cunningham tells the story of Malcolm McGregor, and historian Vincent Orange discusses the wartime work of Keith Park and Arthur Coningham in their respective biographies.[4] Complementing these are a small number of journal and magazine articles published on individual airmen, and two university theses that analyse the contributions of Ronald Bannerman and Leonard Isitt to New Zealand's military aviation history.[5] Elsewhere, New Zealanders appear in the publications of non-antipodean airmen, but most are short, incidental entries. Mercifully, a number of families have published collections of letters and diaries of less well-known aviators.[6]

As I researched this book, a few reference publications were immensely helpful, and seldom left my side. The first and third volumes of Errol Martyn's *For Your Tomorrow* trilogy were indispensable.[7] Accurate and exhaustive, they are an invaluable source on New Zealanders who have died serving in the Allied air services since 1915. For a wider examination of casualties, Trevor Henshaw's *The Sky Their Battlefield II* is excellent — it chronologically lists air casualties of British, Commonwealth and United States air services from 1912 to 1919 and, along the way, offers the best description of the developing air war that you could want in a single volume.[8]

With few secondary sources and published primary materials available, much of the research for this book was archival. Some of the personal stories of the airmen were gleaned from documents held in private collections, but most were gathered from the diaries, letters

and logbooks that are curated by New Zealand libraries and museum archives, including the Canterbury Museum, the Alexander Turnbull Library, the Museum of Transport and Technology and the Auckland War Memorial Museum. Naturally, the largest and most useful collection belongs to the Air Force Museum of New Zealand at Wigram, Christchurch. This is New Zealand's foremost repository for military aviation documents, ephemera and artefacts. In Wellington, Archives New Zealand holds a number of personnel files and other useful material spanning the establishment of the dominion air schools through to papers covering the problems associated with the large number of New Zealand soldiers wanting to transfer to the air service. The National Library of New Zealand's paperspast.natlib.govt.nz website was an invaluable resource for hunting down errant airmen and piecing together their stories. For the operational aspects of the New Zealanders' flying service, the British National Archives at Kew, London, furnished me with everything from personnel files and combat reports to squadron record books and 'inhouse' unit histories.

One of the first things to decide was who to include or exclude from the story. Early in the project I determined to err on the side of generosity rather than parsimony — better to be accused of the former than the latter. The majority of the individuals who populate these pages were either born in New Zealand, served in the New Zealand armed forces, or lived in New Zealand before the war.[9] This last category reflects the fact that New Zealand has always been a nation of immigrants; in 1914, when the war-to-end-all-wars broke out, this was demonstrably so. The last prewar census revealed a diverse population of just over one million, of whom nearly a quarter — 228,779 — were born elsewhere, including in Australia, Europe, Canada and the United States.[10] Many attended New Zealand schools or worked on local farms, in factories, or ran their own businesses in the years predating the Great War. Consequently, the 'New Zealanders' who appear in this book are nearly as varied as the makeup of its population at the commencement of the war.

Having defined a 'New Zealander' for the purposes of this work, it would be nice to say I have a definitive grip on how many this included. I do not — and nor do people who have explored this subject for decades. There were no published Defence Department figures because the New Zealanders who joined the Royal Flying Corps (RFC), the Royal Naval Air Service (RNAS), the Australian Flying Corps (AFC), the Woman's Royal Air Force (WRAF) and the Royal Air Force (RAF) were entering a 'foreign' service. The government did collect some information on New Zealanders who served in this manner but it was not comprehensive. Over the subsequent decades various researchers and writers have suggested the number may be as low as 500 or as high as 1000 individuals.[11] I have gone with the more recent assessments that put the number close to 850.[12] Of these, about a third entered operational units. Most served as pilots, observers or gunners, and a much smaller number of men — and a few women — occupied roles on terra firma as mechanics, fitters, riggers, despatch riders and clerks.

Fearless is not an 'official history'. Official histories are invaluable reference works but seldom hold the attention of even the most motivated reader. Instead, I have attempted to smooth out the narrative in several ways for the general reader. For example, I have kept military ranks to a minimum: since most of the men who populate these pages flew operationally as lieutenants, I have chosen to include an officer's rank only where it deviated from this. Organisational structures make only a brief appearance. In operational matters, this book concentrates on the work undertaken by New Zealanders at the level of the most ubiquitous independent unit in the air war, the squadron. With regard to the 'aces' — airmen with five or more combat claims — I have generally avoided breaking these down into subcategories, such as 'out of control', 'shared' or 'destroyed'. Nor have I felt the need to re-evaluate generally accepted totals for each airman. Readers are directed to *Above the Trenches* by Christopher Shores, Norman Franks and Russell Guest. Although slightly showing its age, it is still *the* starting point for discussion on the war's aces.[13]

I also took the liberty, in general, of not applying the term 'scout' to what modern audiences would call fighter aircraft. In the prewar period scout-type aircraft were lightweight single-seater machines deployed in scouting and reconnaissance operations. When the war commenced these were still unarmed. However, as the air over the Western Front filled with competing machines, scouts were increasingly fitted with armament to engage in air-to-air combat: first, revolvers or rifles and finally forward-firing machine guns. And thus the first single-seater 'fighter' aircraft was born. Nonetheless, the British air service continued to use the term 'scout' for this new class of aircraft, and regularly applied the term 'fighter' to two-seater fighting machines such as the Bristol F2B Fighter. To avoid confusion I have simply called these single-seater, air-to-air combat machines 'fighters'. Some former Great War airmen also adopted this practice years later when they published their memoirs.

One aspect of the air war I could not bend to my stylistic proclivities was the names of the aircraft. As an historian of the Second World War, I was accustomed, at least with regard to RAF aircraft, to the elegant simplicity of names such as Hurricane, Spitfire or Lancaster — but here I was confronted with the bewildering alphabet soup of letters and numbers attached to Great War machines such as the FE2b, DH4, SE5a and FK8. Even the great Sopwith Aviation Company, which gave us the delightfully zoologically themed Pup, Camel and Dolphin, had its own snaggle-toothed offspring, the 1½ Strutter. Who comes up with this stuff? Some machines gained affectionate nicknames, such as the Royal Aircraft Factory 'Harry Tate' RE8, but overall it was a miscellany of letters and model numbers on both sides of the trenches. Of course, the manufacturers did not have my twenty-first-century sensibilities in mind when they named their aircraft, and thanks to the rapid evolution of aircraft over the war, letters and numbers piled up. I'm sure readers will gradually acclimate themselves to this practice, as I had to.

Structurally, *Fearless* is a chronological tale. The book begins (chapters one and two) with an examination of the prewar years and the growing concerns about the place of air power in a future war and what New Zealand's contribution to this might be. At the same time it chronicles the exploits of a string of aviators who were to inspire young New Zealanders to head to the flying services once war broke out. In the war's early years, 1914–15, a small number of New Zealanders were involved in air operations in France, at Gallipoli, and in the Middle East. In chapters three, four and five we follow their exploits, and we see how the fighting on

the ground, particularly at Gallipoli, turned the hearts of many young men to the air service. This is followed by a discussion of flight training at New Zealand's two indigenous schools (chapter six) and subsequent military aviation instruction in Britain (chapter seven). The remainder of the book (chapters eight to 16) details the New Zealanders' amazing exploits over the period from 1916 to 1918. Their experiences were often extraordinary — but also, all too frequently, terminally short. This is their story.

Twenty-one-year-old Harold Beamish was typical of the adventure-loving young New Zealanders who yearned to be airmen in the Great War. The son of a Hawke's Bay farmer, he was a pupil at Wanganui Collegiate when war was declared and three years later was flying the celebrated Sopwith Camel over the Western Front, with 3 (Naval) Squadron.

CHAPTER ONE

THE PIONEERS

1908–1912

previous pages
Children watch Louis Blériot fly across the English Channel in 1909. The Frenchman's achievement announced that heavier-than-air flying machines could change the face of warfare.

Miracles were a rare commodity over the Great War's Western Front, and every airman needed at least one. In the late summer of 1918, with only weeks of fighting left in the war, squadron commander Major Keith Caldwell got his miracle. He was flying with a wingman — a Yorkshireman — over territory scarred and cratered by four years of uninterrupted fighting, when he spotted a German aircraft.

Caldwell opened the throttle and the engine growled. He and his biplane were well matched: the New Zealander was a tall and athletic pilot, the product of extensive training and blessed with fighting skills honed over months of vicious dogfights. His weapon, the Royal Aircraft Factory SE5a — the latest-generation fighter — was menacing with its over-long snout, snarling exhausts stretching past the open cockpit, and twin machine guns: it had all the elegance and brutality of a large African cat, an apex predator.

Caldwell and his offsider stalked their prey across the open blue savannah, manoeuvred within striking distance, hunched, then pounced, a final leap to secure their prize. Then it happened: the two Allied airmen collided. In concentrating on their quarry they had converged; the Englishman's undercarriage ploughed into Caldwell's upper left wing at 8000 ft. Like lions competing over their prey, the V8 engines roared at each other, ripping fabric skin and breaking timber bones.

The Yorkshireman came through relatively unscathed, but Caldwell's wing bent and buckled. He wrestled with his quivering, staggering SE5a deep over enemy-occupied territory; his fighter descended rapidly and then entered a flat spin. Death was only moments away. As one squadron member observed, 'Most men — indeed the huge majority — would have become unnerved and paralysed with fear, and resigned themselves to their fate. Not so this tough son of Auckland.' Self-preservation stepped in. Caldwell would not die without a fight. He stood and placed his left foot on the right rudder, leaning as far out as he could. He gained a tenuous equilibrium, his long leather flying coat whipping and cracking against him in the strong wind. Another subordinate had seen his commanding officer's SE5a fall and followed him down; the airman gasped as Caldwell momentarily let go of the joystick and waved to him. The spectator assumed it was a farewell gesture and turned away from the sickening sight of the New Zealander's death plunge.

Caldwell had other ideas. He crossed no-man's land, heading for the Allied trenches.

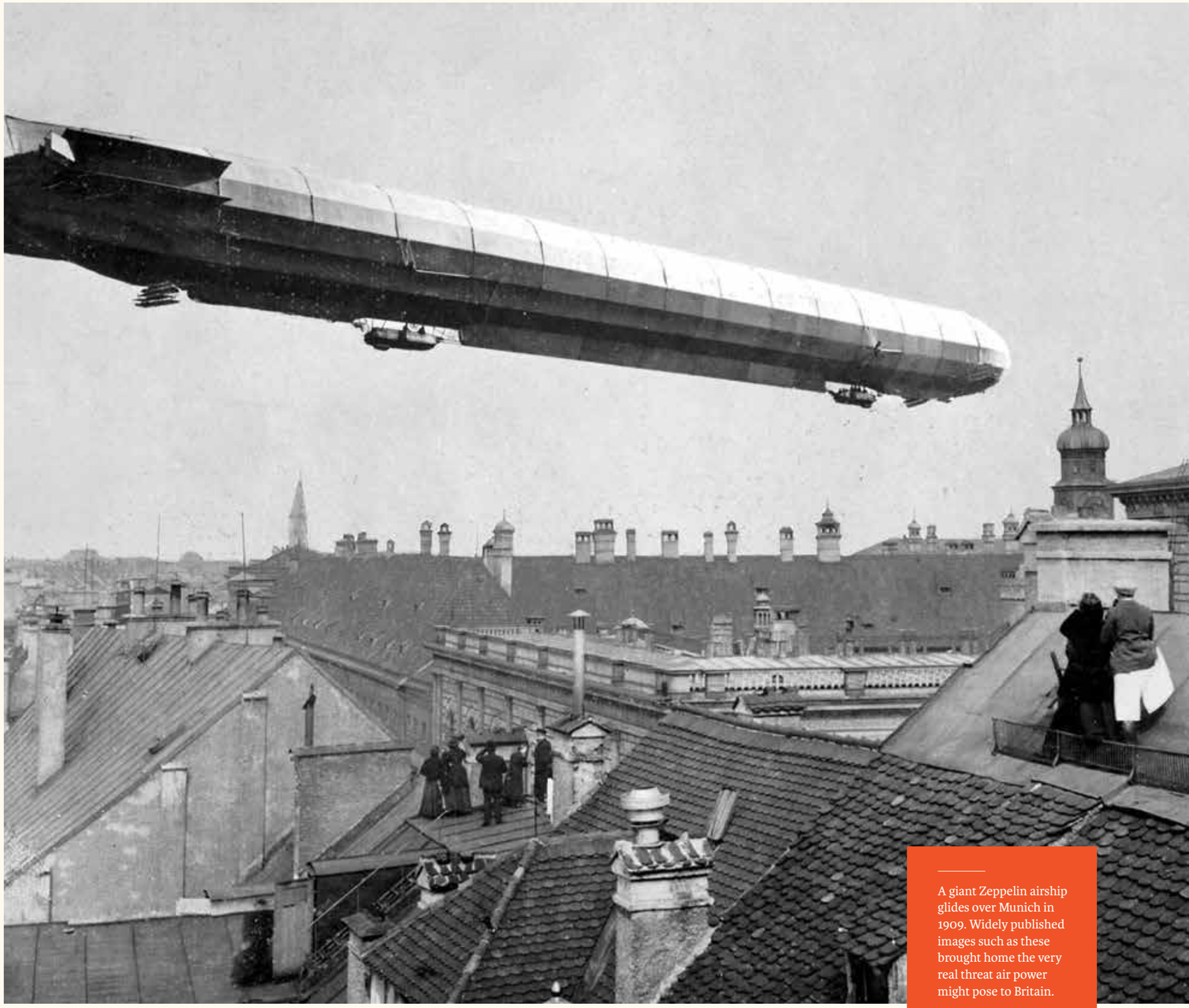
Heads looked up as he careened over the British troops. It was an impossible sight: Was the pilot flying on the wing? The mud-brown earth beckoned — the grave of innumerable men. He waited for the last moment and, in the heartbeat between flying and crashing, leapt. He hit the ground, somersaulted a few times and, to the surprise of the horrified watching infantry, simply stood up — a bleeding lip and considerable bruising the extent of his injuries — shook off the dirt, and walked to the nearest trench in search of a telephone.

'Very lucky,' he wrote in his flying logbook.[1]

Keith Caldwell was an eight-year-old Auckland schoolboy when the Wright brothers achieved the world's first controlled and sustained powered flight on 17 December 1903. At the time the event barely registered with the world's newspapers, but within the space of six years flying had captured international imagination. Men and women were soon considering how powered flight might be utilised, not only in the delivery of letters, parcels and human passengers but also in matters of warfare. Politicians, generals and futurists wondered how this technological marvel might be applied to defence and war.

In New Zealand, military aviation's most vociferous early advocate was Christchurch businessman turned parliamentarian Henry Wigram. In 1908 Wigram spent a good six months in Britain, a country bewitched by the air craze sweeping the globe and the growing fear that in a future war the home cities of the Empire might be subjected to death from the skies. Newspaper stories of the Wright brothers' increasing haul of aviation records, photographs of the Farman brothers flying around the Eiffel Tower, and reports of Count Zeppelin's vast airships were the staple of European conversation.[1A] The British imagination was captured, too, by futurist H. G. Wells' serialised story of a surprise German assault by airships and large bombers on the American naval fleet and, terrifyingly, on New York City; airships moving down Broadway and clinically bombing and devastating the city. In the unfolding fictional war, London in turn suffered New York's fate.

The story, subsequently published in book form as *The War in the Air*, drew on German advances in airship construction and the rapid development of heavier-than-air machines as pioneered by the Wright brothers in the early 1900s. Why had the Americans and the British been caught so flat-footed by the German attacks



A giant Zeppelin airship glides over Munich in 1909. Widely published images such as these brought home the very real threat air power might pose to Britain.

in *The War in the Air*? The answer lay early in Wells' fictionalised drama, when the British government, failing to recognise the importance of air power, rejected an inventor's plans for an aircraft that would have protected their skies from the German menace. The story was a lesson for governments that dragged their feet in the face of the aerial threat.

Thanks to Wells, fear of destruction-bearing air machines led to numerous false sightings of German airships, not only at the heart of the British Empire but also, improbable as it may seem, in its far-flung South Pacific dominion of New Zealand, where Wells' book had been read by a receptive audience.[2] Some 40 'sightings' were covered in the New Zealand press.[3] While the phantom machines were accounted for by lights at night or fire balloons of various manufacture, many newspapers reasoned that the 'scare' was not altogether unwarranted. The *Waihi Daily Telegraph* reported on British concerns.

> Only a few weeks since a Zeppelin airship not only rode out a gale, but completed a journey of two hundred and fifty miles, and it is assumed that Germany will have an airship fleet capable of excelling this performance . . . It is time for Britain to awaken . . . The only defence against flying machines is to meet them with flying machines, and when other countries are building them Britain cannot afford to be left behind.[4]

'War in the Air' was the byline for the *Wairarapa Age*'s 1909 article on the dangers of air power, and the possibility of Germany not only bombing but also undertaking an aerial invasion of England: in a future Anglo-German war, the difficulties of getting German soldiers past an English Channel patrolled by the Royal Navy would be accomplished by 'aerial transports' conveying 'the German soldiery safe into the doomed country'.[5]

On his return to New Zealand, and in this climate of unease, Henry Wigram addressed the Legislative Council members on 11 June 1909. New Zealand's parliamentary upper house was sitting to discuss naval matters, but Wigram turned the debate towards the promise and threat of air power in a future war. Like most New Zealanders of British extraction, he colloquially referred to the centre of the Empire as 'Home'.

> A few words about the development that is taking place in aerial navigation. I hold that this is a matter that is coming into practical politics. It seems to me there are large possibilities for it in the defence of this Dominion in the near future, and I wish to raise the question as to whether we should consider it. We have always been in the forefront of progress, and I ask whether we should not now take up the matter of aerial navigation. There is an opportunity presented at the present time for the Premier to make inquiries at Home: he might cable Home about it, so that the information may be ready for him on his arrival there. The German nation has awakened to the importance of the subject. I was at Home last year, and the intense excitement created by Count Zeppelin and his machine is fresh in my memory. It was an excitement that passed over the whole of Europe . . . We here, living many thousands of miles from possible hostilities, are not likely to be attacked by airships for many years to come, but in the development that is taking place they might prove a useful defence to us against hostile ships. The cost is trifling compared to armament — that is to say, big guns and cruisers . . . I should like to see that question taken up at the start, and that we should get expert advice and lead the way.[6]

But Wigram's speech and subsequent public pronouncements had little effect. The members of the Legislative Council made no continuing reference to his speech, and there is no indication that the prime minister raised Wigram's concerns with the imperial government in Britain on his subsequent visit.

One of aviation's biggest hurdles was overcoming recent developments in naval matters. New Zealand could not afford its own naval fleet, but in 1909 the government announced it would 'donate' a large battlecruiser, HMS *New Zealand*, to the Royal Navy as protector of the Empire's sealanes and first line of defence against foreign aggression. Expenditure was calculated at some £2 million over 18 years — to be funded by a loan to the New Zealand government. The idea was popular with the public. With so much committed to HMS *New Zealand* and the dominion's land forces, the Defence Department was naturally wary of any new and as yet untested venture into military aircraft. Still, aviation captured the imagination of the people — and of the military.

On 25 July 1909, within weeks of Wigram's speech, the French aviator and engineer Louis Blériot flew across the English Channel. It was a significant achievement and seemed to vindicate the fears of the aviation prophets. Blériot's Type XI monoplane, powered by a 25-hp three-cylinder engine, had a top speed of 45 mph. Lacking a compass, Blériot took his bearings from the French destroyer *Escopette*, which served as his escort. He arrived in Dover 38 minutes after departing Calais, making a heavy landing in the gusty conditions. The Frenchman collected a £1000 prize and a raft of orders for the machine from numerous countries. The flight made Blériot a prosperous businessman and celebrity.

The implications for military aviation were not lost on observers. The *Daily Express* in England ran the front-page headline: 'Britain is no longer an island'. The English Channel and the Royal Navy could no longer vouchsafe Britain's security: the moat and its vessels could now be leapt by aircraft. The possibilities it opened up were noted by interested parties in the antipodes, too. In October, Henry Wigram revisited the subject of aviation.

> Aerial navigation might be an immense factor in the event of war taking place. It would be perfectly possible for a fleet of these aerial machines to hover over the Thames and set fire to the docks and timber-yards, and pretty well destroy the shipping of the Thames. We are only on the eve of developments that may take place.[7]

In a future war, he argued, Britain might well not be able to render aid to its far-flung dominions in the event of an attack from 'the East'. In saying this Wigram may well have been drawing on the plot of *The War in the Air*, in which the German aggression against America was immediately followed by an aerial assault from Japan. This begged the question: Was New Zealand more vulnerable to attack from this quarter than generally believed? More

William Burn (fourth left, back row) was New Zealand military's earliest trained aviator. His Central Flying School No. 5 Course was full of future air luminaries, including Hugh Trenchard (far right, second row), who did much to shape the early RAF, and Hugh Dowding (fourth left, second row), who led Fighter Command in the Battle of Britain in 1940.

importantly, even if New Zealand did not come under threat from airships — something Wigram admitted was very unlikely — would not a small clutch of defensive machines provide valuable coastal protection against intruding naval vessels?

Not all ears were deaf to the pleas of Wigram and others, and in 1912 the New Zealand Army explored aviation's potential. Captain George Richardson of the New Zealand Staff Corps was despatched to Britain to undertake study at the Staff College at Camberley.[8] During his sojourn in Britain he investigated the place air power might occupy in future New Zealand military priorities.

> If an officer were sent from N.Z. to undergo special Engineer Training he should be given the opportunities for attachment to the Aeroplane Section of the Air Battalion, as I am of the opinion that N.Z. will not be able to afford the maintenance of Air-ships. They are expensive and necessitate huge buildings and workshops as well as a big staff, but Aeroplanes are cheap and do not require the special machinery for air compressors, or a big staff.[9]

Major General Alexander Godley, general officer commanding New Zealand military forces, considered Richardson's assessments.

> The question of aviation has been under the consideration of the General Staff, and preliminary arrangements have been made for the training of certain officers and non-commissioned officers in this important subject; but till next year, when the training is more advanced and our expenditure has become normal, I do not propose to make any definite recommendation or incur any expenditure in connection with the purchase of aeroplanes. We must learn to walk before we attempt to fly.[10]

In other words, fiscal constraints prohibited significant investment in military aviation.

Nevertheless, the army followed through with its plans to send personnel to Britain for training. In late 1913 William Burn was despatched to Upavon, England. A former Christchurch Boys' High School pupil, Burn was to 'receive a general training in aviation . . . and it was intended that he should superintend aviation in New Zealand upon his return'.[11] Aircraft manufacturing at the Royal Aircraft Factory, Farnborough, was Burn's first introduction to this

newest of military sciences. He received flight lessons at Hendon, London, and in the New Year he was instructed in a dual-control biplane. At this point he entered what would become the longest-running flying school in history, and the birthplace of many of the great leaders in military aviation: the Central Flying School (CFS), Upavon.

The school was situated on the edge of the Salisbury Plain, with a forest backdrop. The students lived in small wooden huts. Doubtless Burn found the student life agreeable. As his colleague Christopher Draper noted, the food 'in the Officer's Mess was a revelation. Never had I seen such variety or so many rows of hot dishes. We changed into Mess Dress every night except Sunday.'[12] (Draper was later dubbed the 'Mad Major' for his daredevil exploits, notably his penchant for flying under bridges including the Tay rail bridge, Dundee.) Apart from Draper, the student body and instructors included 'five future air marshals of the RAF', among whom were the 'two Hughs': Trenchard and Dowding;[13] the former was instrumental in the establishment of the modern RAF, and the latter was famous for his role in the Battle of Britain. Burn was in good company.

By 24 February 1914 Burn had completed the final requirements for his aviator's certificate, and after nine weeks' instruction he received his pilot's flying badge or 'wings' on completion of the CFS course. Two months later he was headed home to New Zealand, and in all likelihood excited by the opportunity to fly a recently acquired aeronautical gift from Britain.

In February 1913 Britain had offered New Zealand a monoplane. To improve imperial defence, the Imperial Air Fleet Committee — a collection of British businessmen — advocated the establishment of air corps across the Empire's dominions; in this way the advances made by menacing 'foreign powers', Germany and Japan, would be lessened. In all likelihood the presence of former New Zealand Prime Minister Joseph Ward at the Imperial Air Fleet Committee meeting had given New Zealand a 'leg up' on other dominions in receiving a plane.

Minister of Defence James Allen cautiously acknowledged the generosity of the offer but noted that 'until we have men trained to use these machines it would not be of very much service to us'. However, Prime Minister William Massey liked the idea, and the offer was 'gratefully' accepted. The machine was a Blériot monoplane — a military incarnation of the one that had conquered the English Channel, and greatly improved over its 1909 predecessor: it sported a more powerful engine that could pull the unarmed two-seater reconnaissance machine to a top speed of 70 mph in 'calm air'. With over five hours' flying time when fully fuelled and an operational altitude of over 7000 ft, the Blériot was a first-class modern aeroplane in 1913.

Presentation of the machine, officially christened *Britannia*, took place on 22 May at Hendon airfield. Joseph Ward was on hand to receive it. He had never been up in an aircraft, but he was a pushover for new technological advances and took great delight in being the first New Zealander to clamber aboard the Blériot. Newspapermen reported that Ward 'divested himself of silk hat and frock coat, donned a sporting coat and goggles, and went up in the charge of Gustav Hamel', one of the world's leading pilots.

> From the moment the machine started it was impossible to hear oneself speak, especially when going against the breeze, as Britannia did. He was told to keep his cap over the ears, but it would not go over the ears, and this intensified the sound of the wind, so that no other sound could be heard above the propeller. When the machine righted herself after banking steeply round one of the pylons, Hamel looked round and roared: 'That's all right,' and Sir Joseph replied 'Yes' in his loudest key. The tilt round the corner was a sensational experience, and Sir Joseph for some moments could see the earth straight beneath him.

Caught between joy and white-knuckled terror, Ward hung on for dear life in the steep turn. After several minutes at 700 ft, Hamel gracefully landed *Britannia*. Ward's face was 'wreathed in smiles' as he alighted.[14]

The politicians were happy but the military was still fretting over the implications. It was not that they failed to appreciate aviation's potential; rather, they were all too aware of how the costs of such endeavours could spiral out of control. The machine and any likely supplementary aircraft would require qualified mechanics, riggers, fitters, carpenters and sailmakers for inevitable repairs. The demands of fuel, spare parts and constant maintenance made this aircraft a costly gift. Moreover, who would fly *Britannia*? New Zealand was hardly awash with airmen capable of flying the Blériot. In August, while *Britannia* was on the high seas heading for the Empire's southernmost dominion, a miffed Colonel Alfred Robin, New Zealand's representative on the Imperial Staff, reiterated the now common caution.

> I have in no way been consulted re this machine. In my reports [from London] on aviation I advised holding off purchase of machines, and that the Naval or waterplane would be most suited for New Zealand. Of course we cannot well criticise the gift, but you know monoplanes are not favoured by the War Office. They favour the Biplane as more stable if somewhat slower . . . Had I been consulted in the matter I would have advised that the machine remain here during the time our New Zealand officer was being trained [and] on his return to New Zealand to take it out with him.[15]

Robin had touched on a key impediment to getting the best out of *Britannia*: the 80-hp engine was simply too powerful for training new pilots. The Blériot would need a skilled airman, and at present Burn was still months away from tackling *Britannia*. Into this gap arrived Joseph 'Joe' Hammond, New Zealand's greatest prewar pilot.

Hammond's mild manner belied the irrepressible thirst for adventure that characterised many early aviation aspirants. Born in Feilding, he left home for Australia in 1904 at the age of 18. There he worked briefly on a sheep station, before making his way — with a stopover in Hawai'i — to the gold mines of the Klondike in Canada. Like many fortune-seekers, Hammond found the hastily built Dawson City plagued with fires, high prices and epidemics; the unsanitary conditions assaulted eyes and nose. He had also arrived too late: the mines had reached their peak the year before and general small-scale prospecting was giving way to heavy machinery. He briefly took up animal trapping in Alaska, then for much of the following

year he worked on a cattle ranch in Phoenix, Arizona. After an interregnum in New Zealand he returned to the United States in 1908, where he fell in with 'Buffalo Bill' Cody's Wild West show.[16]

Immensely popular at the turn of the century, 'Buffalo Bill' Cody's circus was a fertile playground for Hammond's thrill-seeking. The widely imitated show encapsulated the idealised and romanticised Old West frontier. Performers like Hammond were costumed as fur-skinned trappers, feathered Indians, uniformed rough riders and buckskinned cowboys. Shooting competitions and displays of marksmanship, often from horseback, were staples of the show, but the highlight was the 'historical' scenes, notably the defence of isolated settler cabins and wagon trains and, of course, re-enactments of 'Custer's Last Stand' at the Battle of the Little Bighorn. The Hammond family's Rangitikei farm and their ownership of the Bulls raceway, plus recent ranching work in the United States, had furnished Hammond with obligatory horsemanship for the circus. His old school, St Patrick's in Wellington, later recalled the qualities that Hammond brought to Buffalo Bill's show:

> [H]e never knew what fear was. He had a passionate love for any vocation that held the promise of excitement and danger. It was no uncommon thing for him, when on his vacations, to spring suddenly on to the back of an 'outlaw' and set it at a gate or fence. . . . 'Dare devil Joe' was the name he was known by the School, and his reputation has remained . . . with us for nigh on twenty years . . . his wonderful horsemanship brought him swift renown.[17]

After six months with the circus Hammond departed for Europe, where his passion for flight was ignited by the accomplishments of aviation pioneers. He undertook the study of famous French airmen and by September 1910 was receiving formal instruction at the Sanchez-Besa school in Mourmelon. He was a natural. On 4 October he secured his aviator's certificate (no. 258) from the Aéro-Club de France. Hammond was 'the first Colonial to pass the authorities as a full-fledged aviator', recorded a British newpaper, 'and holds the record for speed in passing the brevet. He has already been inundated with offers of engagement from all parts of the world, some of which he has accepted.'[18] Six weeks later he had his Royal Aero Club certificate (no. 32). As one historian noted, Hammond achieved 'in the space of a few weeks' what had eluded many enthusiasts in New Zealand: he was a 'successful (and qualified) aeroplane pilot'.[19]

Of the 'offers of engagement', Hammond accepted a position with the first British firm to manufacture aircraft on a large scale: the Bristol and Colonial Aeroplane Company, established in February 1910. Its machine was the Bristol Boxkite, a biplane with a 'pusher' engine nestled behind the pilot, who sat open to the elements. A number of early airacraft, including the *Wright Flyer* of 1903, were pushers but others, such as the various Blériot designs, utilised the 'tractor' configuration, with the propeller in front of the engine 'pulling' the machine through the air. The Boxkite's wings and tail were, as its name suggested, similar in shape to a box kite, with a fabric skin thin enough for the sun to reveal the timber skeleton. Bracing the Boxkite was a spider's web of rigging and control wires. The 50-hp French Gnome engine gave the Bristol a

Joe Hammond and his wife Ethelwyn with Bristol Boxkites in England in 1910. Ethelwyn was a keen aviatrice and accompanied Hammond on a number of flights in Australia.

top speed in the vicinity of 40 mph. The flimsiness of the prewar machine was evident in the manufacturer's instructions that it could only be flown safely in steady winds not exceeding 30 mph, or gusting winds from 10 to 15 mph.

Hammond would prove more durable than the Bristols, but in many ways he resembled the Boxkite in physical build and temperament. Blue-eyed and fair-haired, he was tall and of spare build, with sharp features. Over his eight years as an aviator he displayed considerable skill and bravery, and he played an important part in the development of military aviation in the Empire — as did the Boxkite itself; it became the mainstay of instruction aircraft in prewar Britain.

With flying certificates in hand, Hammond became one of the company's salesmen and demonstrator pilots. In late 1910 two Bristol company mechanics and a manager embarked for Australia with Hammond, his new bride Ethelwyn and two crated Boxkites. Hammond was about to change Australia's aviation landscape.

Bristol was keen to attract orders for the plane, and on 13 December 1910, the Bristol team disembarked at Fremantle, Western Australia, where they used Perth's Belmont Park racecourse as a base of operations. The Boxkites were assembled ready for flight in the New Year. Australia, like New Zealand, had its share of aviation enthusiasts who had had a modicum of success in heavier-than-air flight, but it was Hammond's Boxkite demonstrations that had the greatest impact on the military authorities.[20] Resplendent in goggles, head gear and garments to protect him from the cold, the New Zealander's initial flight was widely covered in daily print and was of a duration and height yet unseen in Australia. In the early evening of 3 January,

> the machine rising in a distance of about 50 yards, sped through the air with perfect freedom, and with a grace of movement that delighted a small crowd of onlookers who had gathered on the course. The pilot (Mr. Hammond) rose the machine steadily for several hundred feet, and, soaring higher in large spiral movements, he flew the biplane over the [Swan] river and above the recreation ground, at a height of about 1,400 ft. . . . Immediately after ascending, the wind increased in velocity, and the swaying of the machine indicated that Mr. Hammond was having a somewhat difficult passage. After circling, however, for some time, and driving down the wind at a rate estimated at not less than 60 miles an hour, the pilot descended safely and with the greatest of freedom.[21]

This was just the first of many flights the Bristol and Colonial Aeroplane Company hoped would demonstrate the uses of the aeroplane 'for military and commercial purposes'.

After Perth the Bristol team decamped to Melbourne, where Hammond was a sensation. Early on the morning of 2 March, when he flew over Australia's second city, hundreds of thousands of Victorians were about to see an aeroplane for the first time. The New Zealander flew east along the foreshore from Port Melbourne towards Albert Park. Crowds of bathers lifted their heads at the buzzing Gnome engine. They cheered as Hammond turned towards Government House. Australian troopers at the Victoria Barracks let out a rousing cheer as the Boxkite cast its shadow over crowds along St Kilda Road. Tipping his wing, Hammond circled Government House before heading deeper into the city. The flying conditions were almost flawless, and the higher he ascended, to about 5000 ft, the 'stiller' the atmosphere was.

The flyover prompted amusing incidents. Some pyjama-clad workers had almost fallen out of bed at the sound of the propeller; they thought it was the siren for work and that they had somehow overslept. At the Treasury, a sentry observed the mysterious air machine and called out the entire guard. His commanding officer was incredulous. 'Well,' replied the sentry with an injured expression, 'Our orders are to call out the guard if there is a fire or anything unusual, and that aeroplane was unusual enough for me.'

A good number of Melburnians agreed. A little over a week later, at Altona Bay, west of the city, the site of the next Bristol exhibition, a reporter captured the feelings of many who saw Hammond fly in 1911.

> We have all seen the photographs and read the accounts of the deeds of aviators. We know that men fly, but somehow the sight itself gives us a shock of surprise. The great screw revolves in a roar and eddy of furious air-currents, the complicated structure of planes, and wire and wood rolls along the ground for 50 yards; the angle of the planes shifts, and the miracle is accomplished. Almost imperceptibly the earth is abandoned, and the machine moves steadily up an ascending angle into the freedom of the air. There does not seem any reason why it should do so — that is one of the strangest impressions of the performance. There is no appearance of passionate energy, of speed. We know there is 40 or 50 horse power behind the whirl of the screw, and that the machine is flying at a rate of about 30 miles an hour. Yet that does not seem enough. It is an illusion — we cannot believe it afterwards. We expect it to show that it flies, to flap its wings. But it soars above us, the aviator waving his hand, turns and wheels against the white fire of the east, offers towards Sunshine, changes its mind and sweeps back again into the north-west. Its serenity and lack of inherent movement and flexibility do not seem right under the circumstances. Here is a marvel brought about with no fuss beyond the clacking of the screw and the smell of petrol! . . . Not one of the crowd who saw this first public flight but felt the early rising, the tiresome journey, and the expense of 7/6 was well repaid. The sensation of wonder was to be gained in no other way, by reading or by photograph. And a miracle is cheap at that price.[22]

The crowds had been delivered to Altona by special trains laid on for the occasion and were treated to extraordinary feats. Hammond had the Boxkite jumping over fences and appearing to run along a wall. Most thrilling for the crowd were the 'jumps' he made directly over them: 'Coming close to the ground, almost within touch, he charged at the crowd at full speed till within 20 or 30 yards, and then suddenly ascended and came down on the other side. This daring feat was repeated several times, the people falling back like a mob of frightened sheep before a gigantic bird of prey.'[23]

In early April the Bristol team arrived in Sydney, where a temporary hangar was built at Botany Bay and the Boxkite was reassembled. The Ascot Racecourse proved once again the usefulness of racecourses to aviation in a largely pre-airfield era. Duplicating the Melbourne endeavours, there were aerial displays and flights for fee-paying passengers, and Sydney's

eastern and northern suburbs were treated to Hammond's skills. Cheering multitudes crowded streets and rooftops to catch a glimpse of the aviator. Over Sydney Harbour, Hammond and his onboard mechanic turned towards the Royal Navy cruiser HMS *Powerful* — which lay at anchor — for a military demonstration. Hammond throttled back the Boxkite and they 'bombed' the vessel with paper balls. The ship sustained no damage and no casualties were reported, but it did highlight the possible 'effectiveness that bomb-dropping could have in a time of war'.[24] It also highlighted the very real business the Bristol Company was hoping to do with the Australian government.

The Bristol sales team were keen to get their Boxkites in front of the defence authorities and had already made a considerable impression on defence minister George Pearce, whose military representatives had attended Hammond's flights in January and February.[25] The most important military demonstration took place in the last weeks of Bristol's sales mission to Australia. On 3 May, Hammond headed west from Botany Bay for Liverpool and a light-cavalry training camp, 20 miles away. Tucked in behind him was the *Sun* newspaper's military reporter, a retired naval captain.[26] The early morning flight drew sleepy-eyed, nightgown-clad New South Wales citizens out from their homes. At Liverpool Hammond's exploits were watched by excited onlookers — cavalrymen, schoolchildren and the Governor-General Lord Dudley; all raucously 'cheered and cheered the plucky aviator again and again'.[27] The New Zealander's most important task, though, was impressing two officers: Major General Joseph Gordon and Lieutenant Colonel John Antill. After breakfast he took the crewcut, square-jawed Antill up for a 15-minute demonstration. As a cavalryman and Boer War veteran who had often been ordered to reconnoitre enemy positions, Antill immediately appreciated the advantage an aircraft-equipped army would have in battle. At 600 ft he picked out various features 'for miles around', including some detached squadrons of the brigade.

> I had doubts about the stability of these machines until Mr. Hammond afforded me the coveted opportunity of trying for myself what a biplane was like . . . From the military point of view I felt that I was able to obtain in a few minutes from my position in the air information that a thousand light horse could not have gathered in such country as we have travelled over in days of complicated operations . . . If we had had aeroplanes with us in South Africa thousands of lives would have been saved during reconnaissance operations.[28]

The flight persuaded Antill that 'aviation is going to be the biggest factor in military operations'.[29] 'I doubt very much,' Gordon concurred, 'whether the science of flying has ever been demonstrated in a more telling and at the same time delightfully thrilling manner . . . all in the camp are now more fully convinced of the part that aviation must necessarily play in the near future as a factor in war.' Hammond nailed this home 24 hours later in a forthright interview with the *Sun*. He laid out the steps Australia should take to avoid catching the aviation wave too late: select a chief instructor, gather a cohort of young officers, build hangars, and acquire half a dozen training machines and a 'good dozen aeroplanes' for operations.[30]

Joe Hammond over Geelong, Victoria, in early 1911. In more than 65 flights the New Zealander introduced practical aviation to Australia, and became a local celebrity.

Joe Hammond and Lieutenant-Colonel John Antill prepare for a reconnaissance flight over a military training camp at Liverpool, New South Wales.

Naturally he hoped Canberra would select the Boxkite as its training machine of choice. Unfortunately the Australian authorities, like their New Zealand counterparts, were reluctant to commit themselves to aviation.

It would be another three years before military aviation was firmly planted in Australian soil, but Hammond had prepared the ground. His efforts in Australia, where he had become a national celebrity, generated a lasting legacy. As one paper glowingly wrote, 'Mr Hammond was an object of worship . . . Men and women ran to clasp his hand, to be seen speaking to him, to implore him to take them up on a trip to the stars. Tiny children were held up in the air that they might join the hero worship.'[31] In all likelihood he was Australia's best-known New Zealander. Across five months he flew over 65 flights. These included a number of 'firsts' for the Australian dominion: the first cross-country flight; the first passenger flights; the first female passenger flight; the first fare-paying passenger flight; the first two-person passenger flight; and the first 'military' flight.[32] When Canberra eventually committed to military aviation, the inaugural flight in March 1914 left from an airfield only a few miles south of Hammond's 1911 Altona base in Sydney; it was made by a Bristol Boxkite popularised by Hammond and flown by men who were inspired by Hammond's dazzling exploits to become airmen.

Over the next two and a half years Hammond devoted the greater part of his time to being the chief instructor at the Eastbourne Flying School in Sussex, England. As well as instruction, he gave public exhibitions and fare-paying passenger flights. The school's aircraft included at least one Boxkite and a few of the popular Blériots. The gift of *Britannia* to his homeland was covered extensively in the British press, and Hammond — now a probationary second lieutenant in the Special Reserve of Officers of the Royal Flying Corps — offered his services to the New Zealand government for the 'tuition of pilots'.[33] Perhaps in expectation of an appointment, the accomplished flyer embarked for his native land.

Surely this would be the boost New Zealand aviation desperately needed. The Wellington *Evening Post* certainly thought so. It was apparent that aviation was 'just beginning to stir again after a period of stagnation' and that 'the little flying that has been done here has been the performance of self-taught aviators, who are going through gingerly and tentatively what America and the Old World saw six or

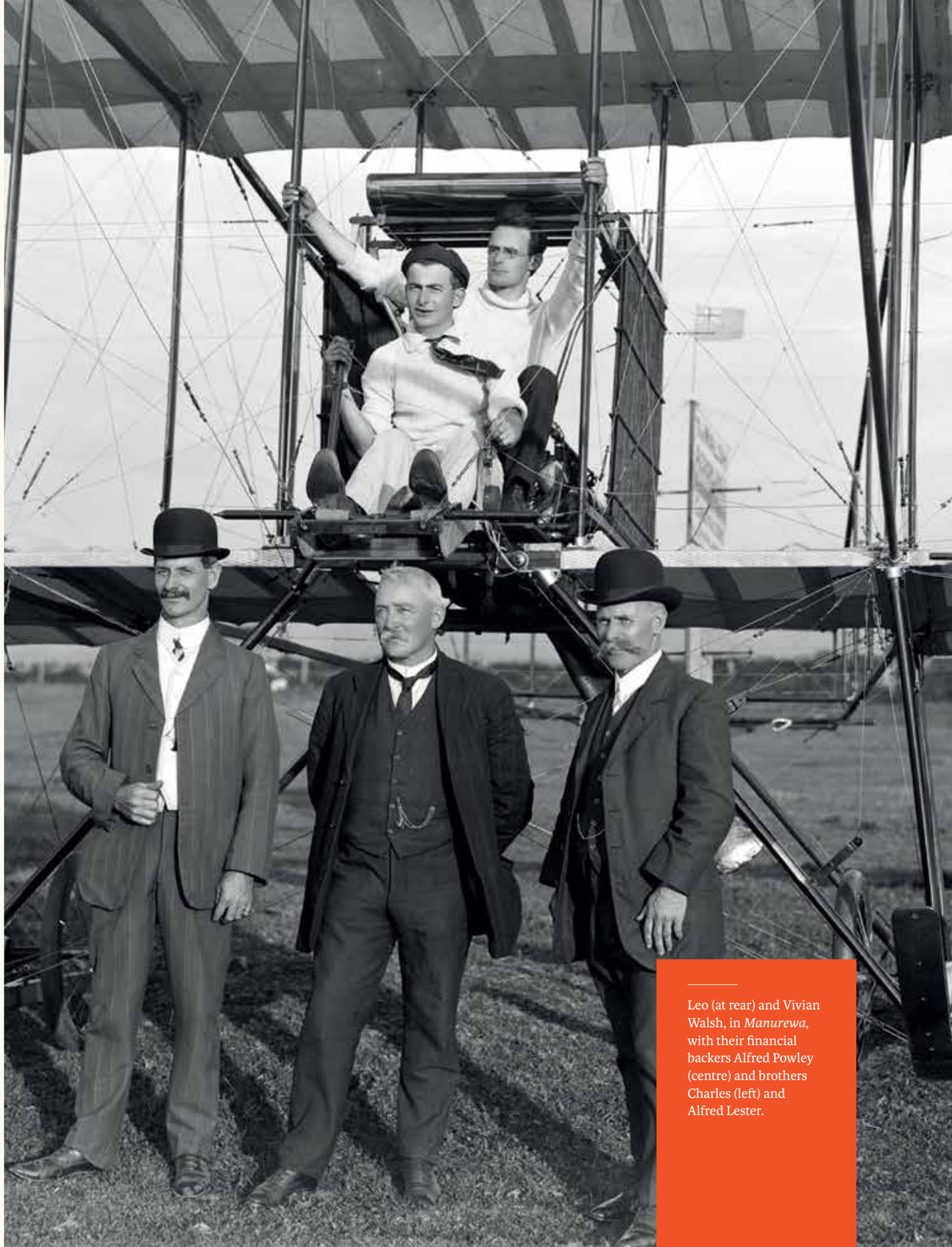
seven years ago'.[34] The editorial's harsh evaluation of local aviation enthusiasts' efforts was not far off the mark. Homemade powered 'flight' had achieved short hops but nothing resembling the 'sustained flying' that included controlled takeoffs and landings, turns and cross-country expeditions.

By at least one reliable estimate New Zealand's prewar, ragtag amateur aviation community had produced some 30 gliders or air machines and generated more than 70 aeronautical patents.[35] Nevertheless, by the time *Britannia* and Hammond arrived in late 1913, New Zealand aviation had not moved very far from the first attempt at powered flight by Richard Pearse, when he bunny-hopped an uncontrollable homemade machine at Waitohi in late 1909.[36] As encouraging as Pearse's efforts were, they paled in comparison to what was being achieved elsewhere in that same year. In 1909, just six years after the Wright brothers' *Flyer* made its first successful flight near Kitty Hawk, North Carolina, overseas aviators were flying over 100 miles at a time in flights that could exceed three hours.[37] And, of course, Blériot had flown the Channel. The only real advances in New Zealand were made with imported plans, materials, engines and entire machines.

With engineering backgrounds and a backing syndicate of businessmen, two Auckland brothers, Leo and Vivian Walsh, set about procuring the components to build a flying machine. In 1910 they imported the materials and engine for a British Howard Wright biplane: a crate full of rough lengths of Honduras mahogany for the fuselage and wings, ash for the skids, coils of wire for the rigging, and rolls of linen fabric. The only ready-to-install components were the engine and propeller. The £750 rough 'kitset' was unpacked and construction commenced in August in Remuera. Nearly all the components were fashioned by hand.

Shortly after Christmas the completed machine was dismantled and moved to a large marquee at Glenora Park, Papakura. Here the Walsh sisters, Veronica and Doreen, were co-opted into machining 500 yards of fabric for the biplane's 'skin'.[38] To shrink the fabric to the wood skeleton and smooth the surface, sago was boiled to the consistency of a paste and applied with hot brushes. The aircraft emerged, a 'giant grasshopper with the sun glistening on its wings'.[39] To the casual observer the 60-hp biplane shared much of the Boxkite's characteristics, and as such it was only suitable for placid weather conditions and vulnerable to breakage. Nonetheless, the brothers had an aeroplane and an adjacent racecourse for testing. But they were missing a pilot. The elder brother, Leo, was a good manager and planner, but felt he lacked the necessary reaction speed for the task, which fell to Vivian. At 23 years of age, Vivian began his self-taught lessons in their newly completed machine, which the visiting Prime Minister Joseph Ward had christened *Manurewa*, 'soaring bird'.

The early testing of *Manurewa* and the 'training' of Vivian Walsh involved little more than taxiing up and down the field as the pilot felt his way into the task. 'Vivian knew,' recalled his brother, 'that in learning to fly he would have to register each experience and learn from it. There were no printed instructions; no instructors to whom to turn. You felt your way, alone . . . at 60 mph.'[40] Urged on by his siblings and friends, Walsh opened the throttle a little



Leo (at rear) and Vivian Walsh, in *Manurewa*, with their financial backers Alfred Powley (centre) and brothers Charles (left) and Alfred Lester.

Vivian Walsh opens the throttle as the straining *Manurewa* is held back at Glenora Park, Papakura. 'Soaring Bird' was the first aircraft to undertake sustained flight in New Zealand.

and spectators lying on their stomachs were able to gauge the strength of the wheels and undercarriage as the aeroplane made short leaps past them.

The early jumps were not without their perils. In January, on a test run, the biplane's skid caught a mound of earth and tripped up the machine. Walsh and *Manurewa* somersaulted. Vivian crawled out of the wreck with only a minor knee injury, but the aircraft was ruined. 'The engine bolts had all been broken by the impact and the engine had been held above the pilot's head only by a stray wire that had become twisted round the propeller.'[41] The damaged machine was left unattended overnight and calves grazed on the sago-rich fabric. The machine was duly repaired, and on 9 February 1911 Vivian guided *Manurewa* to 20 ft and flew close to 400 yards before gently landing.[42] It was the first sustained, if brief, flight in New Zealand history.

Aside from a notable repetition of the flight over a month later, when *Manurewa* ascended to the unheard-of height of 60 ft, the biplane was bedevilled with minor mishaps. A 22 March exhibition jaunt for the mayor, city councillors and schoolchildren of Papakura ended badly after Vivian took the aeroplane up for a preliminary early-morning run. The engine was turned over and the 'two-bladed propeller was sent revolving at such a speed that left only a blur to be seen,' wrote a reporter from the *New Zealand Herald*. The 'huge flying bird was then started rolling up and down the field, giving the pilot time to get accustomed to his work'. However, at 40 ft the machine was hit by a pocket of wind that lifted the front and lowered the rear: *Manurewa* was almost vertical. It fell to the ground. The damage was not terminal but there would be no exhibition.

In the following months the businessmen investors in the syndicate grew restive about the poor return on their investment. Many hundreds of pounds had been sunk into the venture, but Walsh was yet to attempt turning the aircraft in flight, let alone fly it over Auckland city. The unhappy syndicate members used their majority to wrest *Manurewa* away from Leo and Vivian, thereby temporarily ending their flying aspirations. Aucklanders would have to wait well over a year for a sustained flight that was even close to that being achieved elsewhere in the world.