

The Next War in the Air

Civilian Fears
of Strategic Bombardment
in Britain, 1908-1941

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Abstract

During the First World War, several writers began to argue that the main strategic risk to Britain was the possibility of a sudden, intense aerial bombardment of its cities, which would cause tremendous destruction and large numbers of casualties. The nation would be knocked-out of the war very quickly, in a matter of days or weeks, before it could fully realise its military potential. The theory of the knock-out blow solidified into a consensus during the 1920s and by the 1930s had almost become an orthodoxy, accepted by pacifists and militarists alike.

This thesis examines the concept of the knock-out blow as it was articulated in the public sphere, the reasons why it came to be so widely accepted in public life, and the way it shaped the responses of the British public to the great issues facing them in the 1930s: armaments and appeasement, war or peace. It mainly draws on published, but little examined, sources – books, journals, newspapers – produced in the period between 1908 (when aviation was first perceived as a threat to British security) and 1941 (when the Blitz ended, and it was obvious that no knock-out blow was coming). And it shows how, after having been taught to fear the bomber as the bringer of destruction to all they knew and held dear, the British people were instead taught to regard it as their best hope for victory.

Declaration

This is to certify that:

1. This thesis comprises only my original work towards the PhD.
2. Due acknowledgement has been made in the text to all other material used.
3. This thesis is less than 100,000 words in length, exclusive of tables, maps, bibliographies and appendices.

Brett Anthony Holman

18 February, 2009

To Paul

Keep watching the skies!

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List of abbreviations

AA Anti-aircraft

ARP Air Raid Precautions

BUF British Union of Fascists

C³I Command, control, communications and intelligence

CAS Chief of the Air Staff

CID Committee of Imperial Defence

DORA Defence of the Realm Act

HDAF Home Defence Air Force

LADA London Air Defence Area

NLA National League of Airmen

RAF Royal Air Force

RFC Royal Flying Corps

RNAS Royal Naval Air Service

UDC Union of Democratic Control

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Finally, one of the great pleasures of my PhD experience was writing a blog, *Airminded*, and more particularly interacting with its readers.¹ Some

¹<http://airminded.org>

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All of the above have helped to make this thesis much better than it would otherwise have been; but any and all errors are my responsibility alone!

Introduction

The knock-out blow

On 25 July 1909, the Frenchman Louis Blériot became the first person to fly across the English Channel, having travelled the 22 miles from Calais to Dover in just 37 minutes. He was greeted rapturously by thousands of Londoners when his aeroplane was exhibited in their city on the following day. The press hailed Blériot's feat as the herald of a new era for mankind, and lauded him for his bravery in crossing such a long stretch of open water in a frail monoplane with only one unreliable engine. But as well as admiration, there was also anxiety. The most popular British newspaper of the day, the conservative *Daily Mail*, noted that 'British insularity has vanished [...] As the potentialities of the aeroplane have been proved, we must take energetic steps to develop a navy of the air'.²

The reason why the *Daily Mail* thought a 'navy of the air' was needed was because of the possible – indeed, all but certain – future use of aircraft in warfare. But exactly how Britain was threatened in the air was left quite vague. All the newspaper could say was that just as command of the sea had been vital to Britain's survival in the past, so too would command of the air be in the future. During the next three decades, however, a vast amount of ink was spilled by strategists, novelists and journalists – paralleling and sometimes preceding similar efforts inside the government and the Royal Air Force (RAF) – in an attempt to determine exactly what the danger was and how it might be averted. The result was a remarkably consistent and

²'The meaning of the marvel', *Daily Mail*, 26 July 1909, 6.

widely-held theory of strategic air warfare, known as the *knock-out blow*.

During the First World War, several writers began to argue that the main strategic risk to Britain was the possibility of a sudden, intense aerial bombardment of its cities, which would cause tremendous destruction and large numbers of casualties. Civilian morale would be shattered and the nation knocked-out of the war very quickly, long before it could fully realise its military potential. In this view, the next war would start and end in the air, and would be won or lost in the air. The theory of the knock-out blow solidified into a consensus during the 1920s and by the 1930s had almost become an orthodoxy, accepted by pacifists and militarists alike. It was popularised in an increasing number of books, both fiction and non-fiction, often written by experts in relevant fields such as aviation or chemical warfare, but sometimes by interested non-specialists as well. The media – mainly newspapers, but with newsreels and radio becoming increasingly important from the late 1930s – played a crucial role in propagating the fear of aerial bombardment to a wider audience. The ebb and flow of the public's own awareness of the danger of a knock-out blow contributed to their support for disarmament, collective security, rearmament, appeasement and finally war.

By the 1930s, the basic elements of how a knock-out blow would be carried out were largely stereotyped. Germany was the presumed enemy, and London the obvious target. One common characteristic was the initiation of an aerial surprise attack by the enemy, simultaneously with, or even instead of, a declaration of war. Another widespread assumption was that the attack would be massive in scale, carried out by hundreds, thousands or even tens of thousands of aircraft, far larger than the airship and aeroplane raids on Britain during the First World War. A final shared element was that such an attack would be devastating, with estimates of British casualties ranging from the thousands to the tens of millions. It was feared that there would be massive damage to the urban environment from high explosive and incendiary bombs. Poison gas might render cities uninhabitable. Essential services such as water, electricity, transportation and communications would be interrupted, or even cease altogether. A mass exodus of panicked civil-

ians would flee London in search of the relative safety of the countryside; famine and disease would follow. Under such circumstances, with its citizens in utmost danger and its ability to wage war severely compromised, the government would have little choice but to surrender after a matter of weeks, days or even hours. In fact, this never came close to happening, even in 1940, Britain's darkest hour: the knock-out blow was a myth. But this did not become clear until the end of the Blitz in 1941.

Implicitly or explicitly, predictions of the effects of a knock-out blow highlighted perceived weaknesses of modern Britain. Proponents of the knock-out blow theory argued variously that in wartime, the complexity of industrial society would be its undoing; that democracy would prove to be a liability; or that the working classes would revolt. In short, theories of the knock-out blow predicted that the next war would bring British society to the point of collapse, and perhaps beyond. Other nations might also be vulnerable to air attack, but none so much as Britain.

This thesis examines the concept of the knock-out blow as it was articulated in the public sphere, the reasons why it came to be so widely accepted in public life, and the way it shaped the responses of the British public to the great issues facing them in the 1930s: armaments and appeasement, war or peace. It will mainly draw on published, but little examined, sources – books, journals, newspapers – produced in the period between 1908 (when aviation was first perceived as a threat to British security) and 1941 (when the Blitz ended, and it was obvious that no knock-out blow was coming). And it will show how, after having been taught to fear the bomber as the bringer of destruction to all they knew and held dear, the British people were instead taught to regard it as their best, and perhaps only, hope for victory.

Imagining the next war in the air

The future did not always appear different from the present. In 1763, for example, the anonymous author of *The Reign of George VI, 1900-25* could only envisage early 20th century warfare as being exactly the same as that of the mid-18th century, with muskets, muzzle-loading cannon and cuirassiers.

In his landmark study of the future-war literary genre, *Voices Prophesying War*, I. F. Clarke shows that the habit of imagining the next war as something different from the last began in the late 18th century, driven by the gradually-increasing tempo of technological change. So, just two decades after *The Reign of George VI* was written, a rash of stories depicting airborne invasions of Britain appeared, inspired by the invention of the hot-air balloon by the Montgolfiers in France.³ In its modern form, the genre of future-war fiction was established by Lieutenant-Colonel George Chesney in his novel *The Battle of Dorking: Reminiscences of a Volunteer*, published in 1871. A reaction to the shocking Prussian victory over France that year, *The Battle of Dorking* portrayed an unstoppable German invasion of Britain and inspired hundreds of fantasies of the next war in the next half-century.⁴ This genre was most popular in Britain itself, but many French, German and American titles appeared also.

Many of these stories attempted to assess how the increasing numbers of new types of weapons coming into service, such as the machine gun and the self-propelled torpedo, might change warfare. Interestingly, most such efforts to anticipate the future of war took place outside the armed forces. As Clarke observes:

The great paradox running through the whole of this production of imaginary wars between 1871 and 1914 was the total failure of army and navy writers to guess what would happen when the major industrial nations decided to fight it out [...] None of them ever seems to have imagined that technology might be able to create new instruments of war. That was left to the civilian; for in the fifty years before the First World War were Albert Robida, H. G. Wells, and Conan Doyle.⁵

In retrospect, the First World War itself seemed to prove this want of imagi-

³I. F. Clarke, *Voices Prophesying War: Future Wars 1763-3749*, 2nd edition (Oxford and New York: Oxford University Press, 1992), 5-9.

⁴See I. F. Clarke, 'Before and after *The Battle of Dorking*', *Science Fiction Studies* 24 (1997), 33-46.

⁵Clarke, *Voices Prophesying War*, 81.

nation on the part of the professional warriors. The effects of new or untried technologies such as indirect-fire artillery, machine guns, barbed wire and poison gas conspired to make generals seem like fools, when their carefully-planned offensives exchanged many thousands of lives for advances of just a few hundred yards. That this stereotype of ‘red-tabbed butchers’ was unjust is beside the point.⁶ The fact is that it was widely held after 1918, and for many it justified the practice of writing the next war, particularly outside the services.⁷

The development of military aviation before 1914 presents a partial exception to this picture. Although the War Office during Richard Haldane’s tenure as War Secretary could hardly be accused of impetuosity when it came to aeronautical matters, it did institutionalise heavier-than-air flight within the Army when the Air Battalion was formed in 1911, which in turn became part of the Royal Flying Corps (RFC) when that was founded the following year.⁸ Although only a small force, its existence meant that there was a cohort of officers who by virtue of their routine activities had to face the question of how this totally new technology could or should be used in wartime. Some members of this community participated in public debates about the value of aviation, as did a few officers outside the RFC.⁹ But even taking these individuals into account, it remains the case that the most innovative and influential ideas about airpower during the Edwardian period came from outside the military, from independent thinkers like Wells and Montagu of Beaulieu. And although aircraft had already been used by other

⁶On the ‘lions led by donkeys’ myth, see Dan Todman, *The Great War: Myth and Memory* (London and New York: Hambledon and London, 2005), chapter 3.

⁷E.g., Brigadier-General P. R. C. Groves, who retired from the RAF in order to criticise it, wrote that ‘In our military system [...] not only is there no incentive to creative thought but such thought is definitely suppressed’: P. R. C. Groves, *Behind the Smoke Screen* (London: Faber and Faber, 1934), 73.

⁸The Royal Engineers had operated a balloon section since 1890. The RFC nominally comprised a Military Wing and a Naval Wing, though in practice the naval wing soon came under the control of the Admiralty, and shortly before the outbreak of war was renamed the Royal Naval Air Service. See Hugh Driver, *The Birth of Military Aviation: Britain, 1903-1914* (Woodbridge: Boydell Press, 1997).

⁹In particular, Lieutenant-Colonel Frederick Sykes, then commander of the Military Wing. See Eric Ash, *Sir Frederick Sykes and the Air Revolution, 1912-1918* (London and Portland: Frank Cass, 1999), 27.

nations for bombing in Libya and the Balkans (albeit on a small scale), and experiments in arming aeroplanes were undertaken in Britain, the Army's thinking essentially remained limited to the use aircraft in the observation role, as an adjunct to cavalry.¹⁰ Like its equivalents in other European militaries, the RFC possessed a rudimentary doctrine for the offensive use of airpower but lacked the equipment and the training to carry it out.¹¹

When war came in August 1914, the RFC, though small and ill-prepared, certainly proved its worth for reconnaissance. But all belligerents quickly began to use their aircraft for other purposes, namely aerial combat and aerial bombardment. The first truly strategic air missions were undertaken in 1914. Already in August, a German aeroplane bombed Paris and Zeppelins bombed Liège and Antwerp; Britain was spared until 24 December when a Friedrichshafen floatplane dropped a single bomb near Dover Castle.¹² No casualties resulted from that raid, but much worse was to come: the Zeppelin offensives of 1915 and 1916 and the Gotha raids of 1917 and 1918 between them claimed nearly 1500 British lives, mostly civilians (see Figure 1). Britain's responses to these air raids included rudimentary air raid precautions (ARP); a rather more sophisticated integrated air defence system; the creation of a strategic bombing force; the Air Ministry; and the RAF itself, the first independent air force. At the end of the war in November 1918, Britain possessed the world's largest air force, with nearly 300,000 men under arms.¹³ But the urgent desire by politicians and public alike to return to peacetime normalcy and expenditure meant that this force was soon greatly reduced in size. Moreover, the question of the value of airpower in peacetime now had to be faced, especially given the apparently remote prospect of another major war in the near future. This question soon claimed the second Chief of the Air Staff (CAS), Major-General Sir Frederick

¹⁰See Michael Paris, *Winged Warfare: The Literature and Theory of Aerial Warfare in Britain, 1859-1917* (Manchester and New York: Manchester University Press, 1992), 106-12.

¹¹See *ibid.*, 214-5, 225-6; John H. Morrow, *The Great War in the Air: Military Aviation from 1909 to 1921* (Washington and London: Smithsonian Institution Press, 1993), 52-7.

¹²See Christopher Cole and E. F. Cheesman, *The Air Defence of Britain 1914-1918* (London: Putnam, 1984), 19-20.

¹³See Morrow, *Great War in the Air*, 329.

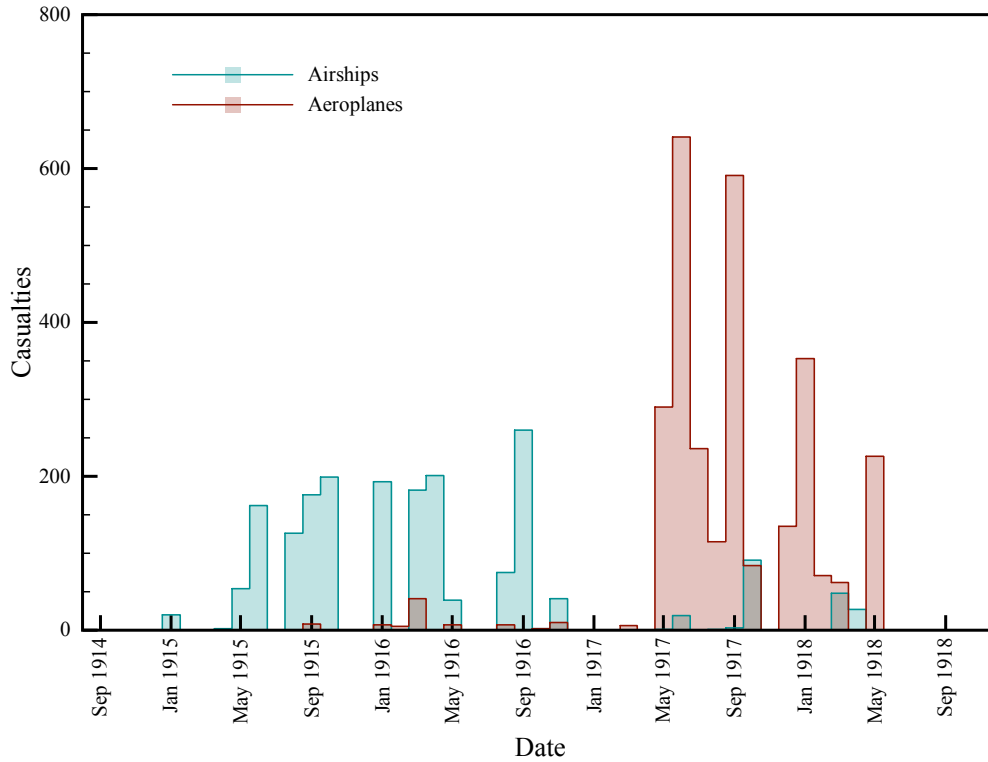


Figure 1: Monthly casualties (i.e., dead and wounded) in Britain due to aerial bombardment between August 1914 and November 1918, inclusive. Casualties caused by airships are indicated in blue and those caused by aeroplanes in red. Source: War Office, *Statistics of the Military Effort of the British Empire During the Great War, 1914-1920* (London: His Majesty's Stationery Office, 1922), 674-7.

Sykes.¹⁴ In a memorandum circulated in December 1918, he proposed a large standing air force, ready for war at any time and oriented towards defence of the Empire.¹⁵ As this was deemed far too expensive by the Air Minister, Winston Churchill, Sykes was shuffled sideways at the beginning of 1919 and his predecessor (and bitter rival), Major-General Sir Hugh Trenchard, was reinstated in his place.¹⁶ Politically more realistic than Sykes, Trenchard favoured a small cadre force with an emphasis on institution building, and committed in theory to a strategic bombing doctrine – in essence, the knock-out blow.¹⁷ The Home Defence Air Force (HDAF) programme, begun in 1923 as a response to the supposed French air menace, institutionalised the RAF's orientation towards strategic bombing, since in order to create a deterrence force it mandated the creation of two bomber squadrons for every fighter squadron. In practice, however, the HDAF scheme was never completed and was overtaken by the expansion schemes of the 1930s: until 1928, fighters actually outnumbered bombers, as they were cheaper to build.¹⁸ Operationally, the RAF soon found a role in imperial policing, or 'air control', especially in Iraq where it was found able to hold down a rebellion at far less cost in blood and treasure than was the Army.¹⁹

After a lull in the immediate postwar period, the task of predicting the course of the next war began again. Much had changed since the years before 1914. For the moment, the German menace was no more: the German High Seas Fleet scuttled itself at Scapa Flow and the Versailles Treaty limited Germany to a small army and navy, and no air force at all. Indeed, with

¹⁴The CAS was the professional head of the RAF.

¹⁵This was the famous 'Sykes memorandum': see Barry D. Powers, *Strategy Without Slide-Rule: British Air Strategy 1914-1939* (London: Croom Helm, 1976), 161-2. The memorandum itself is reprinted in Frederick Sykes, *From Many Angles: An Autobiography* (London: George G. Harrap & Company, 1942), 558-74.

¹⁶The Air Minister was more formally known as the Secretary of State for Air, but the informal title will be used here.

¹⁷See Powers, *Strategy Without Slide-Rule*, 164-5.

¹⁸See John Ferris, 'Fighter defence before Fighter Command: the rise of strategic air defence in Great Britain, 1917-1934', *Journal of Military History* 63 (1999), 862.

¹⁹See David E. Omissi, *Air Power and Colonial Control: The Royal Air Force 1919-1939* (Manchester and New York: Manchester University Press, 1990); Priya Satia, 'The defense of inhumanity: air control and the British idea of Arabia', *American Historical Review* 111 (2006), 16-51.

widespread pacifist feeling and the new instruments of collective security embodied in the League of Nations, war with anyone seemed remote.²⁰ But if, despite all of this, a great war did come again, it was clear that it would be utterly unlike any fought before 1914. After the U-boat and bombing campaigns, war endangered civilians as never before. And it was slow, costly and bloody in ways barely imaginable before 1914, almost to the point where it was as disastrous to win a major war as to lose it. Hence the increasing interest in finding ways to avoid a repeat of the morass of the Western Front. For all its lethality, a knock-out blow was one possibility, particularly as it would be so fast. There were other approaches to the same problem, such as J. F. C. Fuller's advocacy of mechanised warfare, or Basil Liddell Hart's call for a return to a limited-liability 'British way in warfare'.²¹ But even these champions of a reformed Army gave a prominent place to airpower. Indeed, at different times both espoused their own versions of the knock-out blow theory.²² Behind closed doors in Whitehall, civil servants and airmen tried to predict the likely casualties resulting from an air attack on London, extrapolated from statistics of the First World War, and taking into account the subsequent advances in aviation technology. In 1924, these secret estimates stood at 50 casualties per ton of bombs dropped, and 100 tons in the first day of bombing, 75 in the second, and 50 thereafter. By 1939, the Air Ministry was predicting that London could expect an average of 700 tons of bombs per day for a fortnight. A 1937 estimate by the Committee of Imperial Defence (CID) put the total casualties from a 60-day bombing campaign at 600,000 dead and 1.2 million wounded.²³ Fortunately, the reality fell far short of these predictions (see Figure 2).

The importance of airpower in public discussions of military strategy at this time should not be overstated. For example, a series of lectures given by eminent military thinkers in 1925 and 1926 on 'the study of war for states-

²⁰On pacifism, see Martin Ceadel, *Pacifism in Britain 1914-1945: The Defining of a Faith* (Oxford: Clarendon Press, 1980).

²¹See Azar Gat, *Fascist and Liberal Visions of War: Fuller, Liddell Hart, Douhet and Other Modernists* (Oxford and New York: Clarendon Press, 1998), 178-9.

²²See pp. 57 and 60.

²³See Richard M. Titmuss, *Problems of Social Policy* (London: His Majesty's Stationery Office, 1950), 4-6, 12-4.

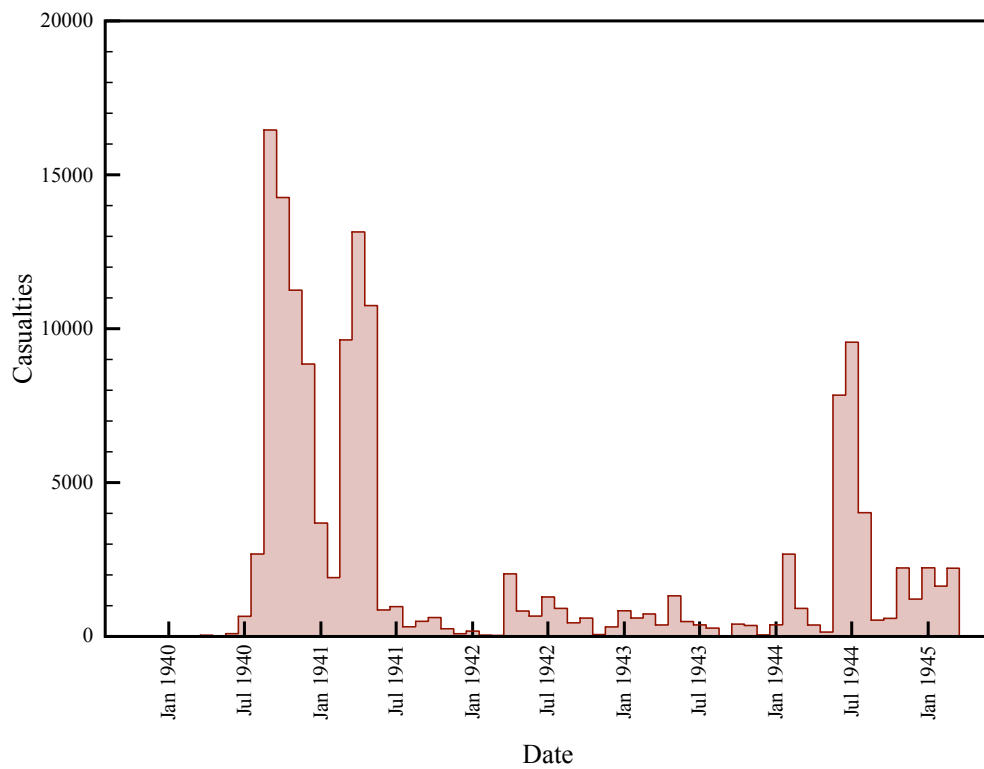


Figure 2: Monthly casualties (i.e., dead and seriously wounded) in Britain due to enemy action between September 1939 and May 1945, inclusive. The vast majority of these casualties were due to aerial bombardment. Source: compiled from HO 191/11 by Dan Todman (Queen Mary, University of London).

men and citizens' featured two each on sea and land warfare, but only one on air warfare.²⁴ And the Royal Navy, in particular, still possessed a large and influential lobby which mounted bitter attacks on the most extreme claims of airpower advocates.²⁵ The Navy had by far the greatest share of the annual defence estimates, and until 1937 the RAF had the smallest.²⁶ Nor was strategic bombardment the only use of aircraft envisaged by airpower theorists: air defence was championed by the pseudonymous Squadron-Leader in 1927, and close air support by Wing Commander J. C. Slessor and Squadron Leader E. J. Kingston-McCloughry a decade later.²⁷ And much energy was devoted to inter-service arguments over whether the aeroplane doomed the battleship, and indeed, could replace it.²⁸ But it remains the case that increasingly, from the early 1920s until the late 1930s, war came to mean air war and airpower the strategic bomber, at least as far as non-specialists were concerned.

Those who argued for the paramount importance of aircraft in war were assisted by the enormous public popularity of all forms of flying. Distance and speed records were continually broken. The annual RAF Pageant at Hendon attracted massive crowds, year after year. Fliers such as Sir Alan Cobham, Amy Johnson and Jim Mollison – not to mention the American Charles Lindbergh – became household names. Air races like the Schneider Trophy were followed avidly in newspapers and news reels. Aeroplanes became ever sleeker and faster, and advertisers sought to associate themselves with the triumphs of their pilots. The first international airlines made the farthest reaches of Empire weeks, instead of months, away – at least for

²⁴George Aston, editor, *The Study of War for Statesmen and Citizens: Lectures Delivered in the University of London during the Years 1925-6* (London: Longmans, Green and Co., 1927).

²⁵See, e.g, Neon, *The Great Delusion: A Study of Aircraft in Peace and War* (London: Ernest Benn, 1927).

²⁶See Malcolm Smith, *British Air Strategy between the Wars* (Oxford: Clarendon Press, 1984), 336.

²⁷Squadron-Leader, *Basic Principles of Air Warfare (The Influence of Air Power on Sea and Land Strategy)* (Wellington Works: Gale & Polden, 1927); J. C. Slessor, *Air Power and Armies* (London: Oxford University Press, 1936); E. J. Kingston-McCloughry, *Winged Warfare: Air Problems of Peace and War* (London: Jonathan Cape, 1937).

²⁸See Powers, *Strategy Without Slide-Rule*, 138-42, 174-7.

those who could afford the airfare. Aviation was new and exciting and its possibilities appeared limitless. By the late 1920s, the term ‘airmindedness’ was being used to describe this sense of enthusiasm for flight.²⁹ Although its advocates were constantly complaining that the British people were not nearly airminded enough, it is clear that in the 1920s and 1930s flying had a cachet that older forms of transport could not match, embodying as it did speed, power and modernity itself.³⁰ And as the embodiment of high technology, the aeroplane dominated popular images of future wars as did no other weapon, with the possible exception of poison gas, itself closely associated with airpower.

Sources for British airmindedness

There were three distinct (though interdependent) groups of writers working on the next war in the air, which can be labelled originators, popularisers, and disseminators. Originators were those who had sufficient knowledge of or experience with relevant subject matter – usually aviation – to introduce new concepts, such as the knock-out blow theory itself and its subsequent modifications. Most frequently members of this group were airmen like Brigadier-General P. R. C. Groves or Air Commodore L. E. O. Charlton, but H. G. Wells certainly qualifies for his innovative and influential novels about aerial

²⁹See, e.g., Murray F. Sueter, *Airmen or Noahs: Fair Play for our Airmen; The Great ‘Neon’ Air Myth Exposed* (London: Isaac Pitman & Sons, 1928), 296.

³⁰See David Edgerton, *England and the Aeroplane: An Essay on a Militant and Technological Nation* (Basingstoke and London: Macmillan Academic and Professional, 1991); Bernhard Rieger, *Technology and the Culture of Modernity in Britain and Germany, 1890-1945* (Cambridge: Cambridge University Press, 2005). Airmindedness (or air-mindedness) in Britain was a very ambiguous concept, dominated by awareness of the nation’s aerial peril more than the opportunities for new forms of cultural expression, for example, which so dominated the much more optimistic American form. See Joseph J. Corn, *The Winged Gospel: America’s Romance with Aviation, 1900-1950* (New York: Oxford University Press, 1983). Other studies of national airmindedness include Peter Fritzsche, *A Nation of Fliers: German Aviation and the Popular Imagination* (Cambridge and London: Harvard University Press, 1992); Leigh Edmonds, ‘How Australians were made airminded’, *Continuum: The Australian Journal of Media & Culture* 7 (1993), 183-206; Scott W. Palmer, *Dictatorship of the Air: Aviation Culture and the Fate of Modern Russia* (Cambridge: Cambridge University Press, 2006). There is clearly a need for a transnational study of airmindedness.

warfare. By contrast, popularisers took the ideas of originators and reworked them into more accessible formats, often novels. Typical examples include Roy Connolly and Frank McIlraith, the authors of the 1934 novel *Invasion from the Air*; while the pacifist and philosopher Bertrand Russell quoted extensively from books by Groves, Charlton, J. F. C. Fuller and Victor Lefebure in his discussion of the changing nature of warfare.³¹ Less typically, the Air Ministry official J. M. Spaight can be counted in this category, as his books were largely careful and compendious summaries of the writings of others. Finally, disseminators took their inspiration from either of the other two groups, but are chiefly distinguished from them by their ability to reach a truly massive audience. In the first half of the twentieth century this meant the popular press, and, in the 1930s and 1940s, radio and film also. The premier example is the *Daily Mail*, which had one of the largest circulations in the country, and belonged to successive airminded proprietors, the brothers Lord Northcliffe, who awarded the handsome prize Blériot won in flying the Channel, and Lord Rothermere, the nation's first, though short-lived, Air Minister.³² These categories are necessarily fluid to a degree: for example, Wells was a best-selling author and commanded large audiences in his own right, while Spaight was original in his application of legal precedent to the question of bombing civilian targets. But they do capture something of the distinction between elite influence, which is the usual subject of histories of air policy, and popular influence, the subject of this thesis.

Popular influence is difficult to measure for the simple reason that popular opinion in this period is itself difficult to measure. Opinion polling was only instituted toward the end of the 1930s, and then only on a limited range of questions. Mass-Observation, an ambitious attempt to anthropologise British society, began work in 1937, and provides valuable evidence on the

³¹Frank McIlraith and Roy Connolly, *Invasion From the Air: A Prophetic Novel* (London: Grayson & Grayson, 1934), 7-9; Bertrand Russell, *Which Way to Peace?* (London: Michael Joseph, 1936), chapter 2.

³²Technically President of the Air Council, from November 1917 to April 1918. He and Trenchard both resigned because they could not work with each other – in part because Trenchard did not agree with Rothermere that airpower should be used strategically. See Powers, *Strategy Without Slide-Rule*, 101-2.

reception of ARP propaganda, among other things.³³ The Peace Ballot in 1935 and 1936 provides some evidence for attitudes towards aerial warfare; occasional by-election results affected by defence issues (most famously, East Fulham in 1933) are usually rather more ambiguous.³⁴ Personal letters and diaries would presumably provide tremendous insights, but it is difficult to survey these in any great depth. There is also less direct, but nonetheless compelling, evidence for the British public's concern about aerial warfare. The phantom airship scares of 1909 and 1913, when all kinds of witnesses from all parts of the country reported seeing German airships in the sky which just were not there, is one example.³⁵ The huge response to Rothermere's call for ordinary people to join his new National League of Airmen in 1935 is another, and the spontaneous evacuation of 150,000 people from London during the 1938 Sudeten (or Munich) crisis yet another.³⁶ But perhaps the most consistently useful sources – if only because they are available for all periods – are newspapers, particularly the leading articles and the letters to editors, which reflect public opinion as a whole, even if imperfectly. As Patrick Kyba writes in his pioneering study of public opinion on defence issues in the early 1930s:

modern newspapers cannot afford to be consistently out of touch with their readers and thus they either lead or follow public opinion. Furthermore, it is common knowledge that some papers such as *The Times* printed letters on both sides of an issue in direct proportion to the numbers they received.³⁷

However, letters written to the editors of newspapers suffer from being both a self-selecting (by those motivated enough by some issue to write a letter about it) and a selected (by the editor, on any number of criteria) sample.

³³See p. 208.

³⁴See p. 208. On East Fulham, see Martin Ceadel, 'Interpreting East Fulham', in: Chris Cook and John Ramsden, editors, *By-elections in British Politics*, Revised edition (London and Bristol: UCL Press, 1997), 94-111.

³⁵See p. 229.

³⁶See pp. 242 and 254.

³⁷Patrick Kyba, *Covenants without the Sword: Public Opinion and British Defence Policy, 1931-1935* (Waterloo: Wilfrid Laurier University Press, 1983), 5.

They are not only expressions of public opinion, but attempts to sway public opinion. Ultimately, then, any study of public opinion in Britain in the first half of the twentieth century by means of an analysis of the press must necessarily be more of a study of the *influences* upon public opinion.

All of this matters. Historians of modern Britain often make unexamined assumptions about public opinion as an important background influence on the decisions made by politicians in all sorts of areas, from defence procurement to foreign relations to social policy. For example, Uri Bialer suggests that ‘the decision reached in July 1934 to give priority to air expansion in terms of both action and presentation was to a considerable extent a response to the British public’s growing apprehension’ about the danger of bombing. He supports this with statements by the Prime Minister, Stanley Baldwin, and Sir Maurice Hankey, Secretary of the CID.³⁸ But despite this acknowledgment of the importance of public opinion, Bialer devotes little space to examining what opinions the public actually held, or why.³⁹ As Frank McDonough notes in a related context:

Many studies of appeasement assume the policy enjoyed widespread public support. Most leading figures involved in the making of British policy during the 1930s held a similar belief. Yet the influence of the elusive force known as public opinion on British foreign policy has been curiously neglected.⁴⁰

This thesis is motivated in large part to redress that neglect with respect to the British public’s changing understanding of the threat of the bomber and why they perceived it as a threat.

³⁸Uri Bialer, *The Shadow of the Bomber: The Fear of Air Attack and British Politics, 1932-1939* (London: Royal Historical Society, 1980), 51.

³⁹*Ibid.*, 11-5, 46-9.

⁴⁰Frank McDonough, *Neville Chamberlain, Appeasement and the British Road to War* (Manchester and New York: Manchester University Press, 1998), 114.

Historiography of the knock-out blow

Historians have long recognised that the anticipation of strategic bombing was an important feature of British defence planning between the World Wars: ‘the shadow of the bomber’, to borrow the title from one history. A substantial literature exists on the beliefs held by the military and the government – particularly the RAF and the Air Ministry, but also the other services, the CID and the Cabinet – about the vulnerability of Britain to bombing, and the consequent effects on military strategy, foreign policy, rearmament and civil defence. The parallel literature dealing with civilian ideas is slender by comparison. In general, unofficial ideas about bombing have been portrayed as a simple reflection of official ones, despite the confidential nature of government and military discussions and the inconsistent nature of attempts to educate the public.

The official histories set the basic narratives for subsequent historians to either accept or revise: all the more so because they were based on official documents which remained secret until the 1960s and 1970s. That of the RFC and RAF in the First World War, *The War in the Air*, was begun in 1922 by Sir Walter Raleigh and continued by H. A. Jones. Two volumes deal with the air raids on Britain. The first of these (1931) warns the reader not to be misled by the apparent ineffectiveness of the early Zeppelin raiders, for their real value lay in the way that they forced Britain to devote considerable resources into building a substantial defence system, and furthermore disrupted production and other vital wartime functions by causing alerts.⁴¹ In the second (1935), Jones argues that the same was true of the Gotha raiders as well.⁴² Ultimately, he concludes that ‘the only defence in the air likely be effective in the long run is an offensive more powerfully sustained than that conducted by an enemy’.⁴³ But while he does suggest that Germany missed an opportunity by not timing aeroplane raids in early 1918 to

⁴¹H. A. Jones, *The War in the Air: Being the Story of the Part Played in the Great War by the Royal Air Force*, volume 3 (Oxford: Clarendon Press, 1931), 243-5.

⁴²H. A. Jones, *The War in the Air: Being the Story of the Part Played in the Great War by the Royal Air Force*, volume 5 (Oxford: Clarendon Press, 1935), 153-5.

⁴³*Ibid.*, 159.

coincide with its offensive of the Western Front so as to maximise the impact on civilian morale, he is not concerned with theories of the knock-out blow, which, although prevalent while he was writing, were after all barely extant during the war itself.⁴⁴

The first important historical survey of the knock-out blow appeared in the volume of the official British history of the Second World War written by Richard Titmuss, *Problems of Social Policy* (1950).⁴⁵ Titmuss concentrates on official discussions of ‘the expected war’ during the 1930s and the increasingly pessimistic estimates of the scale and effects of a knock-out blow, extrapolated from the damage caused by German air raids in the First World War and the growing capabilities of the Luftwaffe. He contends that these grim (and exaggerated) scenarios largely determined the growth of British emergency services up until the Blitz. For example, the (false) assumption that air-raid casualties would have homes to return to was made because ‘the needs of the individual were hidden from view by the sheer mass and crudity of the problems that were expected to result from an attack on civilian society’.⁴⁶ Titmuss notes the government’s public stress on anti-gas measures in the mid-1930s, and emphasises the influence of statements made by politicians like Stanley Baldwin and (particularly) Winston Churchill.⁴⁷ Generally, however, Titmuss takes for granted the public fear of air attack, for example asserting that ‘In the public mind – for reasons which need not be discussed here – gas warfare and air raids were vividly linked’.⁴⁸ Another official history, Terence O’Brien’s *Civil Defence* (1955), describes the growth of ARP in much more detail but otherwise follows the general contours defined by Titmuss.⁴⁹

A third contribution to the official history, *The Strategic Air Offensive Against Germany* (1961) by Charles Webster and Noble Frankland, traces

⁴⁴Jones, *The War in the Air*, 156-7.

⁴⁵On Titmuss’ role in the historiography of the welfare state, see John Welshman, ‘Evacuation and social policy during the Second World War: myth and reality’, *Twentieth Century British History* 9 (1998), 28-9.

⁴⁶Titmuss, *Problems of Social Policy*, 50.

⁴⁷Ibid., 6, 7, 9, 16, 21.

⁴⁸Ibid., 6-7.

⁴⁹Terence H. O’Brien, *Civil Defence* (London: Her Majesty’s Stationery Office, 1955).

the origins of the RAF's belief in the primacy of the bomber to the experience of the First World War, and, in particular, to the interpretation of that experience by Marshal of the RAF Sir Hugh Trenchard, CAS from 1919 to 1929. For much of the war he had been commander of the RFC in France, where he insisted on what he described as an 'incessant and relentless offensive' at all times, a stance he retained after the war but applied to the strategic realm.⁵⁰ Trenchard's dominant personality ensured that the young service reflected his adherence to the offensive, with the proportion of fighter aircraft kept to a minimum.⁵¹ In wartime, its bombers should attack enemy centres of production rather than the enemy air force, and this would inevitably, but not incidentally, cause substantial civilian casualties, and the attendant loss of morale might be decisive.⁵² In the rearmament of the 1930s, the Air Staff maintained its preference for offence over defence, checked only by political interference.⁵³ Not until after the weakness in all aspects of Britain's defences was revealed during the Sudeten crisis did it accept that parity with Germany's bombers could not be obtained quickly enough before war might come, and that priority therefore had to be given to fighters.⁵⁴

George Quester's *Deterrence Before Hiroshima* (1966) is a valuable, if brief, synthesis of ideas held about the knock-out blow in Britain and other countries from the turn of the century to 1945. It is clearly written for a Cold War audience interested in historical precedents for contemporary nuclear deterrence theory. Quester classifies predictions of future air war in terms of either inflicting pain on the enemy civilian population or disabling the enemy armed forces, and argues that war is more likely when the latter capability appears to outweigh the former.⁵⁵ Aside from its comparative nature, the most novel feature of Quester's book is its analysis of attempts to ban or limit bombing by diplomatic means. He argues that Britain, as the

⁵⁰Charles Webster and Noble Frankland, *The Strategic Air Offensive Against Germany 1939-1945*, volume I: Preparation (London: Her Majesty's Stationery Office, 1961), 42-3.

⁵¹Ibid., 54-5.

⁵²Ibid., 63-4.

⁵³Ibid., 77-9.

⁵⁴Ibid., 80-1.

⁵⁵George H. Quester, *Deterrence before Hiroshima: The Airpower Background of Modern Strategy* (New Brunswick and Oxford: Transaction Books, 1986 [1966]), 5.

nation which most feared the bomber, genuinely hoped to limit national air forces to low levels, and that attempts to do so at the World Disarmament Conference failed because of the conflicting goals of Britain and Germany on the one hand, and France on the other.⁵⁶ Quester draws upon studies produced both for the government and for the public, although he does not always clearly distinguish between the two. Examples of the latter include writings by P. R. C. Groves, Churchill, Jonathan Griffin and Philip Noel Baker; however Quester does not consider their intended audience, as he is more concerned with the ideas expressed than how they were used.⁵⁷

Published the same year was another work of intellectual history, Robin Higham's *The Military Intellectuals in Britain* (1966). Like Quester, Higham writes very much from a Cold War perspective, and is mainly interested in evaluating the ideas of his subjects for their relevance to the strategic problems of his own era – a presentist attitude which devalued the ideas of widely-read authors like L. E. O. Charlton. Unlike Quester, however, Higham does not think highly of the airpower writers he studies (notably F. W. Lanchester – whom he credits as the first airpower theorist – Major-General Frederick Sykes, Trenchard, J. M. Spaight and Groves), referring disparagingly to their faith in the bomber as 'The heavenly city of the airpower philosophers'.⁵⁸ His book is nevertheless valuable for the attention it gives to many lesser known writers, and for the way he places airpower advocates in the broader context of military theory in the interwar period, comparing them with writers like J. F. C. Fuller and Basil Liddell Hart. In addition, Higham's book is one of the few to concentrate on those writing for the public.

The sudden availability of interwar and then Second World War records in the late 1960s and 1970s led to a number of new works on British airpower policy, most of which focused on specific chronological periods. Neville Jones, in *The Origins of Strategic Bombing* (1973), examines the years up to 1918. He emphasises the importance of Lord Tiverton, a RNAS and RAF officer whom he credits with the development of the first truly sophisticated strate-

⁵⁶Quester, *Deterrence before Hiroshima*, 70, 80-1.

⁵⁷Ibid., 86-91.

⁵⁸Robin Higham, *The Military Intellectuals in Britain: 1918-1939* (Westport: Greenwood Press, 1966), 119.

gic air warfare doctrine in 1917, which he tried to implement while at the Air Ministry the following year. For example, Tiverton pointed out the importance of navigational skills for accurate target location, and advised the continuous bombardment of German industrial cities in order to maximise both material and morale effects.⁵⁹ Jones also pays some attention to airpower propaganda before 1914, particularly that of the Aerial League of the British Empire.⁶⁰ However, as a whole, his work is unbalanced by an excessive desire to correct what he sees as a historical record which neglects the role of the RNAS in pioneering the theory and practice of strategic bombing.

The most compendious result of the new thirty year rule was H. Montgomery Hyde's *British Air Policy between the Wars* (1976).⁶¹ Hyde's interest is primarily in understanding how the RAF came to be ready for war in 1939, for which he mainly credited CAS Trenchard and CAS Air Chief Marshal Sir Cyril Newall, Air Minister Viscount Swinton and Minister for the Co-ordination of Defence Sir Thomas Inskip (with CAS Air Chief Marshal Sir Edward Ellington blamed for his lack of urgency during the mid-1930s).⁶² Overall, it is an air force view of history and a political one – top-down rather than bottom-up – little concerned with the broader public understanding of airpower.

Barry Powers devotes roughly equal space to public and to military theorising about airpower in his book *Strategy Without Slide-Rule* (1976), which covers the period from 1914 to (approximately) 1931.⁶³ In arguing that air policy should be 'seen as a complicated interaction of the factors involved – popular conceptions, press campaigns, political thinking and military con-

⁵⁹Neville Jones, *The Origins of Strategic Bombing: A Study of the Development of British Air Strategic Thought and Practice upto 1918* (London: William Kimber, 1973), 142-7.

⁶⁰Ibid., 27-30.

⁶¹Hyde was unusually well-qualified to write such a book, as he had been private secretary to Lord Londonderry (Air Minister 1931-5); the co-author of a book on the danger of bombing, H. Montgomery Hyde and G. R. Falkiner Nuttall, *Air Defence and the Civil Population* (London: The Cresset Press, 1937); a postwar MP at Westminster; and last of all, a prolific academic historian. See also Ian Kershaw, *Making Friends With Hitler: Lord Londonderry and Britain's Road to War* (London: Allen Lane, 2004), 250.

⁶²H. Montgomery Hyde, *British Air Policy between the Wars, 1918-1939* (London: Heinemann, 1976), 490-502.

⁶³Despite the book's subtitle, only the period up to c. 1931 is covered in detail.

cerns', Powers comes close to the central concerns of this thesis.⁶⁴ He examines in great detail parliamentary debates about airpower, as well as articles published by serving officers in military journals, demonstrating that there was little dissent from the assumptions of the knock-out blow theory, even outside the RAF. But Powers generally neglects the dissemination of ideas through popular culture, and his book does not cover the crucial period of the 1930s or the origins of airpower politics before 1914.

Uri Bialer's *The Shadow of the Bomber* (1980) is the most widely cited work on the knock-out blow (perhaps rivalled only by Quester's). It is a thorough account of the influence of the fear of bombing on British defence policy in the 1930s, from the attempts to reach a European disarmament agreement at Geneva until the outbreak of war in 1939. Bialer finds that 'there can be no doubt that the spectre of air attack had a material influence on the making of both defence and foreign policy'.⁶⁵ His analysis of Cabinet, Whitehall (especially the Air Ministry and the Foreign Office) and CID discussions regarding air policy and diplomacy is still the most detailed available, despite its brevity, although the sections on rearmament have been superseded. Ultimately, Bialer concludes that the British deterred themselves through years of exaggerated warnings about the danger of bombing and the over-estimation of Germany's air strength.⁶⁶ The capitulation at Munich and the subsequent staff talks with France – appeasement and resistance – were two direct consequences of the fear of the bomber.⁶⁷ But Bialer's book is deficient in almost completely neglecting the public sphere. Although he notes that government officials were aware of public attitudes towards air warfare, and indeed shared them to a large extent, his discussion of these attitudes is confined to a few brief passages.⁶⁸

Malcolm Smith's *British Air Policy Between the Wars* (1984) is perhaps the standard work on that subject, despite being favourable to Trenchard, a now unfashionable position. His aim is to 'write the history of how Britain

⁶⁴Powers, *Strategy Without Slide-Rule*, 9.

⁶⁵Bialer, *The Shadow of the Bomber*, 5.

⁶⁶Ibid., 146-50.

⁶⁷Ibid., 157-9.

⁶⁸Ibid., 11-5, 46-9.

prepared for what was often assumed would be an apocalyptic war, with as full a reference as space allows to the many perspectives which directly shaped that preparation'.⁶⁹ Smith claims that the experience of the First World War in fact had little effect on the development of British air strategy, which only really began after the war, and then only as one element in wearing down the enemy (what Smith calls 'strategic interception'). It was Trenchard's successors in the 1930s who debased this sophisticated strategy into simple victory through independent airpower ('strategic independence'). Like Bialer, Smith is sympathetic to the decision to appease Germany, given the apparently insoluble problem of the bomber, which he partly blames on the Air Ministry: 'Air propaganda had the effect of making it impossible to plan a rational distribution of the limited resources available'.⁷⁰

Like Neville Jones (although, unlike him, completely ignoring Tiverton), Malcolm Cooper focuses on the First World War in his contribution to the study of air policy, *The Birth of Independent Air Power* (1986). Cooper agrees that in this period lay the seeds of the RAF's later strategic policy, but argues that this was actually due to a general lack of interest in strategic bombing, since army co-operation was the main task of the RFC and RAF.⁷¹ Hence, when the Armistice came and the mass armies were disbanded, the RAF had to abandon this role and find another justification for its independence, namely strategic bombing.⁷² He criticises H. A. Jones for producing an apologia for the independent air force and for Trenchard, who has far overshadowed his rival, Sykes, in the historiography.⁷³

The Ultimate Enemy (1986), by Wesley Wark, is a highly original study of British intelligence assessments of Nazi Germany's military capabilities and intentions. Wark shows that in the early 1930s the British tended to incorrectly assume that the rebirth of the German air force, when it occurred, would follow the course taken by the RAF in the 1920s, with a focus on

⁶⁹Smith, *British Air Strategy between the Wars*, 9.

⁷⁰Ibid., 320.

⁷¹Malcolm Cooper, *The Birth of Independent Air Power: British Air Policy in the First World War* (London: Allen & Unwin, 1986), 156-7.

⁷²Ibid., 157.

⁷³Ibid., xvii.

institution-building and only a slow growth in frontline aircraft numbers. It was also believed that it would have a strategic bombardment orientation like the RAF: a false but persistent illusion.⁷⁴ By the time of the Sudeten crisis, accurate numbers for German air strength were available, but serviceability rates were greatly overestimated, which made the Luftwaffe appear much stronger than it actually was.⁷⁵ These intelligence estimates were, for the most part, secret (a major exception being Desmond Morton's leak of the Industrial Intelligence Centre's frontline strength assessment to Churchill in 1934) and so only had an indirect effect on public perceptions of German airpower.⁷⁶

Neville Jones followed his earlier book with one on the RAF's bomber force between the wars, *The Beginnings of Strategic Air Power* (1987). In it, he criticises historians like Smith who dismiss the First World War as being of little relevance to the origins of strategic bombing, which he believes is a consequence of too great a reliance on the official history by H. A. Jones.⁷⁷ But he also attacks those who trace a straight line between Trenchard's aggressive operations over the Western Front and his postwar embrace of the strategic offensive. In Jones' view, Trenchard was essentially an opportunistic and unwilling father of the RAF, who neglected to keep it abreast of developments in aviation during the 1920s.⁷⁸ But the blame was shared with the postwar governments who failed to support civil aviation, from which many of the necessary skills and techniques could have been learned. As a result, Bomber Command was grossly unprepared for the challenges it faced from September 1939.⁷⁹

Alfred Gollin's *The Impact of Air Power on the British People* (1989) integrates the public and the political to provide a detailed overview of the origins of airpower and of airpower politics in Edwardian Britain. He defends

⁷⁴Wesley K. Wark, *The Ultimate Enemy: British Intelligence and Nazi Germany, 1933-1939* (Oxford: Oxford University Press, 1986), 41, 63-4.

⁷⁵Ibid., 68-9.

⁷⁶Ibid., 42.

⁷⁷Neville Jones, *The Beginnings of Strategic Air Power: A History of the British Bomber Force 1923-1939* (London: Frank Cass, 1987), xiii-xiv.

⁷⁸Ibid., xviii-xxi.

⁷⁹Ibid., xxi-xxii.

War Secretary Richard Haldane's deliberate, scientific approach to founding an air force, noting that the several airships purchased for the nation by public subscription turned out to be a waste of time and money.⁸⁰ Gollin is particularly strong on the Aerial League and the first alarmist pronouncements about Britain's vulnerability to air attack by civilian authors such as H. G. Wells and Montagu of Beaulieu. One of the few historians to pay close attention to the Edwardian air panics, Gollin argues that it is too simplistic to blame them on the need of the press to sell newspapers, instead placing them firmly within the context of contemporary fears about German spies and invasions.⁸¹

England and the Aeroplane (1991) is David Edgerton's attack on declinist historians of Britain such as Correlli Barnett, who believe that Britain has lagged other nations technologically and industrially, particularly in aviation during the 1920s and early 1930s. By contrast, Edgerton argues that Britain – or rather, England – practiced liberal militarism, the use of 'technology as a substitute for manpower, and using the technology to attack enemy civil populations and industries, rather than armies'.⁸² After the anomalous mass armies of the First World War, liberal militarism was a particularly seductive notion which underlaid support for bombers and other new technologies such as tanks.⁸³ There is much to be said for this idea, but being so widespread liberal militarism is of limited relevance to the study of the knock-out blow: few would have argued against the bomber in favour of a return to trench warfare.

In *Winged Warfare* (1992), which covers the period 1859-1917, Michael Paris also attempts to redress the damage done by H. A. Jones, who he believes was too close to Trenchard to produce anything but a partial account. But he also points out that most critiques of Trenchard were themselves partial, as they were written by his enemies.⁸⁴ He also notes a reluctance on

⁸⁰ Alfred Gollin, *The Impact of Air Power on the British People and their Government, 1909-14* (Stanford: Stanford University Press, 1989), 46-8, 65-8.

⁸¹Ibid., 58-63.

⁸²Edgerton, *England and the Aeroplane*, xv. See also David Edgerton, *Warfare State: Britain, 1920-1970* (Cambridge: Cambridge University Press, 2006).

⁸³Edgerton, *England and the Aeroplane*, 41-2.

⁸⁴Paris, *Winged Warfare*, 2-6.

the part of previous airpower historians to examine the predictive literature about aerial warfare in any detail, aside from occasional references to Wells or Verne. He therefore aims to explore, as well as ideas present within the RFC, ‘the assumptions about the use of the air weapon in popular literature and the theories of aerial warfare proposed by individuals and pressure groups who foresaw its future potential – the pre-history of aerial warfare’.⁸⁵ Paris notes that ideas about aerial warfare which seemed like fantasy before 1914 were commonplace by 1918, contending that ‘the pre-war literature of aerial warfare had created a climate of airmindedness among the military and in some instances had direct influence upon airmen and decision-makers’.⁸⁶ He dismisses the criticism made by Neville Jones and others that RFC commanders underrated strategic bombing, since events at the time and later demonstrated that the tactical and operational use of airpower in support of armies and navies was by far its most important contribution to warfare.⁸⁷

British strategic bombing doctrine in the interwar period, as distinct from policy, has been little studied. The major exception is Scot Robertson’s *The Development of RAF Strategic Bombing Doctrine* (1995), which seeks to use a neo-Clausewitzian approach to uncover the underlying principles. For Robertson, previous historians have simply been content to treat doctrine as unimportant, perhaps because the RAF itself took an unintellectual, unrigorous approach to the topic.⁸⁸ He argues that it was the government which panicked in the Gotha raids of 1917, not the people, and that the RAF’s later devotion to strategic bombing derived not from British efforts in that period but from a gross overestimation of the effectiveness of German air raids.⁸⁹ He too believes that Trenchard was only a late convert to the cause of strategic bombing, though more as a way to safeguard RAF independence than a matter of principle.⁹⁰ According to Robertson British strategic bombing doctrine, or rather the almost complete lack of it, was a

⁸⁵Paris, *Winged Warfare*, 10.

⁸⁶Ibid., 253.

⁸⁷Ibid., 254.

⁸⁸Scot Robertson, *The Development of RAF Strategic Bombing Doctrine, 1919-1939* (Westport and London: Praeger, 1995), xxvi-xxvii.

⁸⁹Ibid., 16, 19-21.

⁹⁰Ibid., 25-6.

major cause of the RAF's impotence as a bomber force in 1939.⁹¹ Yet as he himself points out on numerous occasions, such a logical, methodical way of framing military principles was alien to the British way of warfare, so it seems unfair to condemn the Air Staff on these grounds.

Another revisionist work which tries to correct the excessive focus on Trenchard is Eric Ash's *Sir Frederick Sykes and the Air Revolution* (1999). As its title suggests, this is an account of Sykes' influence on all aspects of British airpower, from his time as commander of the Military Wing of the prewar RFC through to his tenure as CAS in 1918. Nor is his time in the wilderness in 1916-8 neglected, for his various commands and studies during that time taught him the value of technology as a substitute for manpower. Ash's position is that Sykes embraced a wide view of the value of airpower, seeing it as more than simply fighting or bombing.⁹² But while Sykes did not believe that airpower had fundamentally changed the principles of war, he did institute a paradigm shift towards the bomber, one which Trenchard appropriated only once it had ceased to be associated with his rival.⁹³ Ash, however, does not explain how Sykes came to his beliefs, other than to suggest that he may have been influenced by the Italian Giulio Douhet on a visit to Italy before the war.⁹⁴

John Ferris' important paper 'Fighter defence before Fighter Command' (1999) shows that, contrary to most assumptions, air defence was not neglected by the interwar RAF only to be redeemed by the invention of radar. Ferris argues that Trenchard's dominance within the RAF has been greatly exaggerated. He was almost alone in his scepticism of air defence, and other senior RAF officers were prepared to stand up to him on the issue. In fact, the essential lessons learned about air defence during the First World War were never forgotten and formed the fundamental basis of the sophisticated command, control, communications and intelligence (C³I) system which won the Battle of Britain.⁹⁵ But Ferris does not adequately explain why, if this

⁹¹Robertson, *Development of RAF Strategic Bombing Doctrine*, 157-8.

⁹²Ash, *Sir Frederick Sykes*, 221.

⁹³Ibid., 224-8.

⁹⁴Ibid., 223-4.

⁹⁵Ferris, 'Fighter defence', 845-84.

was the case, that the perception existed – then and later – that Britain’s air defence was in crisis.

The most recent survey of British strategic bombing theory and practice is Tami Biddle’s *Rhetoric and Reality in Strategic Air Warfare* (2002), which also covers parallel American developments. For Biddle, the fear of bombing had its origins in Edwardian concerns about the urban working class, amplified by episodes of unrest after air raids, particularly the daylight Gotha raids in 1917 which the government believed led to a ‘prerevolutionary’ state of affairs.⁹⁶ She distinguishes between a ‘Tivertonian’ school of thought, which laid stress upon the complexity and interdependence of modern societies, and a ‘Trenchardian’ school, which emphasised the importance of targeting morale, even if only indirectly by causing air raid alerts.⁹⁷ Reflecting Trenchard’s influence, the postwar survey of the effects of British air raids on Germany uncritically exaggerated their psychological impact on workers and the consequent loss of production.⁹⁸ Conversely, the early Zeppelin and Gotha raids, when the British air defences were caught unprepared, made a disproportionate impression both inside and outside the RAF, whereas the more effective defence mounted later in the war was forgotten. And the small number of raids sent over by Germany meant that air defence appeared to be far too costly to be worthwhile, an error which became clear during the Second World War.⁹⁹ By the 1930s, the RAF’s declaratory offensive policy had become a doctrinal straitjacket: air defence exercises were biased in favour of bombers, and the (admittedly scanty) evidence from the Spanish Civil War for the increasing capabilities of fighter aircraft were dismissed or otherwise interpreted in such a way as to reinforce the prevailing dogma.¹⁰⁰ Meanwhile, attempts to acquire the equipment, doctrine and training necessary for effective strategic operations were belated and haphazard.¹⁰¹ So

⁹⁶Tami Davis Biddle, *Rhetoric and Reality in Strategic Air Warfare: The Evolution and Reality of British and American Ideas about Strategic Bombing, 1914-1945* (Princeton and Oxford: Princeton University Press, 2002), 33.

⁹⁷Ibid., 186.

⁹⁸Ibid., 62.

⁹⁹Ibid., 73-4.

¹⁰⁰Ibid., 101-2, 115-20.

¹⁰¹Ibid., 123-7.

while the RAF continued its belief in the relentless offensive, it entered the Second World War with an inadequate bomber force which it refrained from using for fear that Germany would strike back far harder.¹⁰² As at Munich, the British were self-deterred by their own belief in the power of the bomber.

In addition to the books on air policy and strategy proper, there are two other distinct historiographical strands relevant to the knock-out blow: one focuses on fictional literature and the other on civilian morale.

The first was pioneered by I. F. Clarke's *Voices Prophesying War* (1966; 2nd edition, 1992), which explores the genre of future-war fiction. But his chapter on interwar fiction (of which air warfare novels can be said to be characteristic) is disappointingly brief when compared to his much more exhaustive examination of Victorian and Edwardian invasion novels.¹⁰³ This omission motivated Martin Ceadel to write his paper 'Popular fiction and the next war' (1980). He sees British future-war novels of the 1920s and 1930s as generally falling into one of three categories: science fiction concerned with demonstrating the effects of scientific progress on war; moralising anti-war tracts; and old-style defence alarmism. These roughly correspond to periods: respectively, the 1920s, when there was no plausible enemy; the early 1930s, when war no longer seemed unthinkable; and the late 1930s, when war began to seem imminent.¹⁰⁴ But he does not compare these fictional predictions with their non-fictional counterparts. Finally, a PhD thesis by Christopher Simer, 'Apocalyptic Visions' (1999), examines the fear of bombing in interwar Britain by way of the public construction of theories of air warfare. Unlike Ceadel, Simer does compare fictional and non-fictional representations of future aerial warfare, concluding that there is little difference between them in terms of content.¹⁰⁵ Unfortunately, he does not show how a shared belief in the knock-out blow could lead to different conclusions about how to defend against it.

¹⁰²Biddle, *Rhetoric and Reality*, 183-4.

¹⁰³Clarke, *Voices Prophesying War*.

¹⁰⁴Martin Ceadel, 'Popular fiction and the next war, 1918-1939', in: Frank Gloversmith, editor, *Class, Culture and Social Change: A New View of the 1930s* (Brighton: Harvester Press, 1980).

¹⁰⁵Christopher Joel Simer, 'Apocalyptic Visions: Fear of Aerial Attack in Britain, 1920-1938' (1999), PhD thesis, University of Minnesota, 203.

The second strand is exemplified by Tom Harrisson's *Living Through the Blitz* (1978) and Robert Mackay's *Half the Battle* (2002). Harrisson was one of the founders of Mass-Observation, and his book provides a valuable corrective to the other works cited here by using its reports to demonstrate the reactions of the British people to the prospect and the reality of air warfare, including a vivid section on reactions to the false air raid warning of 3 September 1939.¹⁰⁶ Unfortunately, the prewar years are not given the same treatment, and here Harrisson seems to be largely following Titmuss' account. More recent and more comprehensive, Mackay's book also betrays Titmuss' influence but draws on a much wider range of sources, including critics of the concept of the knock-out blow; he also covers the deep shelter controversy. A short but dense section on the 'view from below' notes the influence of films and newsreels on popular conceptions of aerial bombardment.¹⁰⁷

It has been suggested that historians of British air policy and strategy before 1939 have been unduly influenced by the official histories of both world wars, in particular overstating the importance and influence of Trenchard upon the RAF.¹⁰⁸ But if this was ever true, it has not been substantially so since the 1970s, since nearly every author since then has differed from this position, with the major exception of Smith. Certainly, some misconceptions have persisted, such as that the interwar RAF did not believe that air defence was possible, whereas in fact it had the most effective air defence system in the world. And not even Trenchard was as 'Trenchardian' as has often been assumed.¹⁰⁹

But for present purposes the real biases in the literature are the neglect of events before 1914 or even 1918, and the neglect of non-military ideas about aviation. The first bias derives from the assumption that, since strategic air warfare was primitive during the war, the important events in its development took place afterwards during the early years of the RAF and

¹⁰⁶Tom Harrisson, *Living Through The Blitz* (Harmondsworth: Penguin, 1978), 44-52.

¹⁰⁷Robert Mackay, *Half the Battle: Civilian Morale in Britain during the Second World War* (Manchester and New York: Manchester University Press, 2002), 17-42.

¹⁰⁸See Jones, *The Origins of Strategic Bombing*, 21-4; Paris, *Winged Warfare*, 2-7; Ash, *Sir Frederick Sykes*, 2, 3-4.

¹⁰⁹See John R. Ferris, 'The Air Force brats' view of history: recent writing and the Royal Air Force, 1918-1960', *International History Review* 20 (1998), 128-33.

of Trenchard's tenure as CAS.¹¹⁰ In fact, the theory of the knock-out blow was developed during the war, from elements discussed before 1914. The second bias derives from the assumption that civilian ideas about strategic air warfare were derived from military ideas.¹¹¹ Actually, military thought lagged behind civilian thought at key junctures: civilians were the first to formulate the theory of the knock-out blow and the first to abandon it. And no work adequately takes a long view of British civilian ideas about strategic bombing, a shortcoming which this thesis corrects.

The structure of this thesis

This thesis is divided into three sections.

Part I describes how the threat of the bomber was constructed in civilian literature, both fictional and non-fictional. Chapter 1 shows how concerns about the possibility of bombing appeared in the late Victorian and Edwardian periods, coalesced into the knock-out blow theory in the heat of the First World War, and developed during the peaceful 1920s. Chapter 2 demonstrates how the concept of the knock-out blow subsequently evolved under the pressure of international events, undergoing eclipse in the late 1930s and revival in the early 1940s.

Part II explores the responses to the perceived threat of the knock-out blow: how the threat posed by the bomber was to be met. Chapter 3 shows how the threat of the knock-out blow was used to argue for adaptive responses such as political reform, psychological self-reliance, evacuation and dispersal of urban populations, and air raid shelters. Chapter 4 concerns ideas about resistance to the knock-out blow in the form of air defence, anti-aircraft (AA) guns, or counter-offensives. Chapter 5 examines internationalist responses such as the limitation of bombing, aerial disarmament, collective security, and an international air force.

¹¹⁰Counter-examples include the works of Robin Higham, Neville Jones, Barry Powers, Michael Paris, John Ferris and Tami Biddle.

¹¹¹Counter-examples include the works of Higham, Powers, Martin Ceadel, Paris and Christopher Simer.

Finally, Part III examines the way in which the threat of the bomber was deployed by the media in times of perceived national crisis. Chapter 6 proposes a new model for analysing the way in which the press responded to and amplified threats to the nation, the defence panic, inspired by the sociological concept of moral panic. Chapter 7 applies the defence panic model to the phantom airship scare of 1913, the so-called French air menace of 1922 and the German air menace of 1935. Chapter 8 applies it to the Sudeten crisis of 1938. Finally, Chapter 9 applies it to the Gotha raids in 1917 and the Blitz in 1940.

The following thesis will show that the late Edwardian period and the First World War were crucial in forming civilian ideas about airpower which – after a temporary eclipse caused by the Spanish Civil War – persisted into the Second World War, and that these ideas evolved in a public sphere largely independent of, and sometimes in advance of, thinking inside the RAF and Air Ministry. It will explain how fear of aerial bombing led to support for collective security, ARP and rearmament, and how the perceived danger of a knock-out blow was a crucial factor underpinning the desire for a peaceful resolution of the Sudeten crisis. But it will also show how the chance of a knock-out blow had to be downplayed in wartime to stave off the possibility of a defeat by the Luftwaffe's bombers, and was finally resurrected in order to nurture confidence in the inevitability of a victory secured by the RAF's own bombers.

Part I

Threats

Chapter 1

Origins of the knock-out blow theory, 1893-1931

The knock-out blow concept was characterised by the certainty of surprise, the need for massive forces, the devastation of cities, the possibility of panic and the vulnerability of infrastructure. All of these elements were present, in varying degrees, in the writings of the first airpower theorists in the late Victorian and Edwardian periods. They developed more or less in isolation, and it took the experience of total war to synthesise them into a coherent theory. So although the knock-out blow theory originated in the First World War, its roots in the years before 1914 also need to be studied in order to understand why it arose.

Before the advent of airpower, the sea was Britain's only frontier, and the Royal Navy its first line of defence. Debates about the security of the British Isles then generally revolved around two opposing ideas: the 'blue water' school of thought, which held that a strong Royal Navy could be relied upon to prevent an invasion; and the 'bolt from the blue' school, which instead pointed to the large and efficient conscript armies of continental Europe and argued that a temporary loss of naval superiority might allow an overwhelmingly large army to be landed on Britain's shores with little warning. Proponents of the blue water school – navalists – therefore wanted a

stronger navy; proponents of the bolt from the blue, national service.¹ By its nature, the bolt from the blue involved a threat to the safety of civilians, but it was still primarily a military strategy, in that it turned upon the defeat of the British army in the field. More closely related, conceptually, to the knock-out blow was the *guerre de course*: a naval trade war that would strangle Britain's food imports and bring about defeat as its people began to starve, or, less dramatically, bankrupt the nation through pushing up insurance premiums for shipping. Like the knock-out blow, the *guerre de course* was mainly aimed at the vulnerabilities of the civilian population, albeit indirectly.² The link between the two strategic ideas is made explicit by the fact that some early strategists thought that the chief danger of aviation to Britain might be the part that aircraft could play in suppressing trade.³

The knock-out blow would use a new technology – flight – to combine the surprise of the bolt from the blue with the *guerre de course*'s targeting of civilians, with greater speed and devastation than either. None of the traditional forms of defence could prevent an aeroplane from overflying them, which was both the peril and the promise of airpower. Even in the First World War period, the speed of aircraft was so great that it would take a European air fleet only a matter of hours to fly from its bases to a target in another country, drop its bombs and return home. And just as the speed of aircraft increased dramatically in the first two decades of flight, so too did their endurance and payload. But early aircraft were frail and unreliable, grave deficiencies for machines of war. And there was little experience to go upon. Some aircraft were used in the Italian invasion of Libya in 1911 and in the Balkan wars of 1912-3, but it was not until the First World War that large numbers were employed in major combat, in tactical, operational, and

¹See A. J. A. Morris, *The Scaremongers: The Advocacy of War and Rearmament, 1896-1914* (London: Routledge & Kegan Paul, 1984), 98-110.

²See Bernard Semmel, *Liberalism and Naval Strategy: Ideology, Interest, and Sea Power during the Pax Britannica* (Boston: Allen & Unwin, 1986), 89-92.

³For example, René Declarges – otherwise something of an airpower sceptic – thought that ‘There can be no easier task for an efficient airship’ than to sweep along a trade route and deflect ‘all the English commerce to some distant port, under threat of destruction, and to sink in a few minutes any that disobeys’. René Declarges, ‘An aerial possibility’, in: Fred T. Jane, editor, *All the World's Air-ships (Flying Annual)* (London: Sampson Low, Marston & Co., 1909), 331. See also p. 45.

strategic roles.⁴ So, before 1914 the ways in which aircraft would be used in warfare were unclear, and airpower doctrine was necessarily speculative.

Such questions did not only concern Britain; they were discussed in Europe too, a debate which Britons were aware of and sometimes referred to, despite finding their own answers to the questions raised. Today, the best known of the European airpower prophets and the one credited with the greatest influence is Giulio Douhet, a retired Italian general whose *Il dominio dell'aria* ('The command of the air') was published in 1921. He was developing his ideas as early as 1909, although there is no evidence to suggest that his work was widely known in Britain before the mid-1930s.⁵ Other Europeans were more influential. P. R. C. Groves quoted a remark made to him in 1921 by the French general Ferdinand Foch, who had led the Allied armies to victory in 1918:

The potentialities of aircraft attack on a large scale are almost incalculable, but it is clear that such attack, owing to its crushing moral attack on a nation, may impress public opinion to the point of disarming the Government and thus becoming decisive.⁶

Foch's international stature was such that advocates of knock-out blow theories found it hard to resist quoting him to bolster their case, despite his later, more ambiguous statements on the subject.⁷ Similarly, several writers followed Basil Liddell Hart in quoting the views of a German general named von Altrock in support of the idea that wars of the future will have 'the appearance of the destruction *en masse* of the entire civil population rather than a combat of armed men'.⁸ In 1931, the Inter-Parliamentary Union published

⁴See Paris, *Winged Warfare*, 106-12; Richard C. Hall, *The Balkan Wars 1912-1913: Prelude to the First World War* (London and New York: Routledge, 2000), 88, 133.

⁵See Gat, *Fascist and Liberal Visions of War*, 54-5. Early British discussions of Douhet may be found in H. de Watteville, 'Armies of the air', *Nineteenth Century and After* 116 (December 1934), 353-68; L. E. O. Charlton, *War from the Air: Past Present Future* (London: Thomas Nelson and Sons, 1935), 127-34. See also Higham, *The Military Intellectuals in Britain*, 257-9.

⁶P. R. C. Groves, 'Our future in the air', *The Times*, 22 March 1922, 13. 'Moral' is here used as an alternative form of 'morale', a common variant in the early twentieth century.

⁷See J. M. Spaight, *Pseudo-Security* (London, New York and Toronto: Longmans, Green and Co., 1928), 118-9.

⁸Quoted in B. H. Liddell Hart, *Paris, or the Future of War* (London: Kegan Paul,

an English edition of its collection of essays discussing the question *What Would be the Character of a New War?*, evidence of a widespread anxiety on the Continent about the threat of bombing.⁹ The contributors were from Britain (J. F. C. Fuller, Norman Angell, and the gas expert Victor Lefebure), Germany, France, Switzerland, Sweden, Japan, Denmark, Greece and the Soviet Union. They nearly all assumed that a knock-out blow was possible.¹⁰ One, a Swedish officer named Karl Bratt, had published a book in Britain the previous year, entitled *That Next War?* Bratt believed that the next war would be decided in the air, and would involve hard-fought battles for the destruction of ‘air fortresses’, heavily defended industrial centres, the homes of ‘that part of the population which is psychologically most sensitive – the working classes’.¹¹ Society would have to be re-shaped in order to meet the threat of air attack and he warned that democracy itself would be in danger of being sacrificed to the needs of air defence. The only long-term solution to the problem of aerial bombardment, Bratt believed, was a world state.¹² Neither his argument nor his conclusion would prove remarkable when set against British attempts to understand the influence of airpower upon the future.

This chapter comprises two parts. The first outlines how, in the late 19th and early 20th centuries, isolated elements of the later knock-out blow theory – including the susceptibility of civilians to panic, the ease with which complex infrastructure could be disrupted, the possibility of overwhelming destruction – were developed by a diverse range of writers, most notably H. G. Wells and Montagu of Beaulieu. The second shows how these elements were forged into a coherent theory during the First World War by Claude Grahame-White and Harry Harper, and describes the subsequent refinement

Trench, Trubner & Co., 1925), 54. Von Altröck was the editor of *Militär-Wochenblatt*, a semi-official German military periodical.

⁹Summaries of airpower theory among the European powers can be found in James S. Corum, *The Luftwaffe: Creating the Operational Air War, 1918-1940* (Lawrence: University Press of Kansas, 1997), 91-8; Quester, *Deterrence before Hiroshima*, 50-104.

¹⁰Inter-Parliamentary Union, *What Would be the Character of a New War?* (London: P. S. King & Son, 1931).

¹¹K. A. Bratt, *That Next War?* (London: George Allen & Unwin, 1930), 81.

¹²*Ibid.*, 260.

and popularisation of the knock-out blow theory during the 1920s, particularly by Groves. The implication of this theory was that Britain could be swiftly defeated by a sudden, massive aerial attack.

The doom of the great city, 1893-1916

Cities first became the target of air attack in the nineteenth century: in 1849, the Austrians unsuccessfully attempted to use balloons to drop explosives on the besieged city of Venice.¹³ But this was an isolated incident: the city was threatened from the air more often in fiction than in fact, and then by megalomaniacal inventors or revolutionary anarchists more than by foreign powers. One of the earliest such examples was E. Douglas Fawcett's *Hartmann the Anarchist* (1893), in which a single airship destroys a fifth of London, including the Houses of Parliament, in just half a day.¹⁴ In George Griffith's *The Outlaws of the Air*, published in 1895, London is saved by an aerial battle but the French city of Strasbourg is bombed before world peace is established.¹⁵ Anarchists were then a plausible enemy, and the panics of the London mob in these novels were probably inspired by the working-class riots of the late 1880s.¹⁶ A more conventional story of the next war, Vice-Admiral Philip Colomb's *The Great War of 189—* (1893) included one incident where the Russians use an airship to bombard military targets in a town held by the Ottoman Empire. However, this is represented as a measure of desperation and one unlikely to 'enforce any surrender'.¹⁷

¹³See Richard P. Hallion, *Taking Flight: Inventing the Aerial Age from Antiquity through the First World War* (Oxford and New York: Oxford University Press, 2003), 66.

¹⁴E. Douglas Fawcett, *Hartmann the Anarchist; or, the Doom of the Great City* (London: Edward Arnold, 1893).

¹⁵George Griffith, *The Outlaws of the Air* (London: Tower Publishing, 1895).

¹⁶Though this unruly behaviour seems to have caused more contempt than alarm on the part of the middle and upper classes: see Robert F. Haggard, *The Persistence of Victorian Liberalism: The Politics of Social Reform in Britain, 1870-1900* (Westport: Greenwood Press, 2001), 32-6. On the anarchist threat, see Richard Bach Jensen, 'Daggers, rifles and dynamite: anarchist terrorism in nineteenth century Europe', *Terrorism and Political Violence* 16 (2004), 116-53.

¹⁷Philip Colomb et al., *The Great War of 189—: A Forecast* (London: Routledge/Thoemmes Press, 1998 [1893]), 230. Episodes in the narrative were contributed by other authors, including the soldiers John F. Maurice and Frederic N. Maude.

But the most important early novel of ‘the doom of the great city’ (as Fawcett’s book is subtitled) was undoubtedly H. G. Wells’ *The War in the Air*, published in 1908 but set some time in the 1920s.¹⁸ In this widely-read novel, the destruction of New York by a huge fleet of German airships – ‘As the airships sailed along they smashed up the city as a child will shatter its cities of brick and card’¹⁹ – is merely the prelude to the descent of the entire world into aerial war: France, Britain and Italy against Germany and Switzerland, the Sino-Japanese alliance against the United States and British India. ‘The catastrophe was the logical outcome of the situation created by the application of science to warfare. It was unavoidable that great cities should be destroyed’.²⁰ The destruction of London takes place late in the novel, but the novel’s protagonist had already realised ‘that the little island in the silver seas was at the end of its immunity’.²¹

Wells’ vision of the aerial war-to-come was referred to widely in following years by serious and popular writers alike, even if only disparagingly at times.²² Certainly, Wells had a serious argument to make, as he explained in the preface to the 1921 edition:

The thesis is this; that with the flying machine war alters its character; it ceases to be an affair of ‘fronts’ and becomes an

¹⁸In some respects, *The War in the Air* was anticipated by Wells’ earlier novel, *The War of the Worlds*, published in 1898, particularly in the scenes of London’s destruction and the panic-stricken crowds. However, these are not caused by airpower but by (alien) invasion. Also of interest is his non-fictional predictive work, *Anticipations*, which was published in 1902. Although here Wells foresaw an important role for aircraft in war, he did not envision their use against strategic targets. H. G. Wells, *The War of the Worlds* (Harmondsworth and Ringwood: Penguin, 1946 [1898]); H. G. Wells, *Anticipations of the Reaction of Mechanical and Scientific Progress upon Human Life and Thought* (London: Chapman & Hall, 1902), 190-7.

¹⁹H. G. Wells, *The War in the Air and Particularly how Mr Bert Smallways Fared while it Lasted* (London and Glasgow: Collins’ Clear-type, n.d. [1908, 1921]), 154.

²⁰Ibid., 153.

²¹Ibid., 154.

²²Cecil Jane remarked that Wells’ speculations were notable more for their ‘dazzling ingenuity, than for evidence of appreciation of the lessons of the history of the past or of the present’: L. Cecil Jane, ‘The political aspect of aviation’, in: Fred T. Jane, editor, *All the World’s Air-ships (Flying Annual)* (London: Sampson Low, Marston & Co., 1909), 327. For a more favourable appreciation, see C. F. G. Masterman, *The Condition of England* (London: Methuen, 1909), 289-94.

affair of 'areas'; neither side, victor or loser, remains immune from the gravest injuries, and while there is a vast increase in the destructiveness of war, there is also an increased indecisiveness. Consequently, 'War in the Air' means social destruction instead of victory as the end of war.²³

The War in the Air exemplified many of the concerns of other writers about the effects of aerial warfare upon cities before the First World War.

Wells foresaw the creation of very large air fleets, numbering hundreds or even thousands of aircraft, and employing tens of thousands of workers in their manufacture.²⁴ Some agreed that this might be a possibility for the future: Sir George Aston, a colonel in the Royal Marines, thought that only when tens of thousands of aircraft were involved would it be the case that 'the issue between nations may be brought to a conclusion in the air'.²⁵ But before 1914, airpower advocates generally assumed that only a small number of aircraft would be needed to seriously damage a city.²⁶ So, writing in 1909, the munitions expert T. G. Tulloch thought that 'even a single airship or aërial machine' would suffice; in a lecture delivered in March 1914, Colonel Louis Jackson, a former Royal Engineer, spoke in terms of a single Zeppelin or a flight of aeroplanes.²⁷ Experience was to show otherwise: the most successful Zeppelin raid on London, on the night of 13 October 1915, was carried out by five airships but caused only 199 casualties over a wide area.²⁸ Accordingly, the numbers of aircraft thought necessary to alter the course of the war rose dramatically. Just a few months after the October raid, the

²³Wells, *The War in the Air*, 5.

²⁴Ibid., 178.

²⁵George Aston, *Sea, Land, and Air Strategy: A Comparison* (London: John Murray, 1914), 238.

²⁶Of course, the number of military aircraft in existence during this period was relatively small: the leading power was France, which early in 1912 had 234 aeroplanes of all types according to a contemporary estimate: Claude Grahame-White and Harry Harper, *The Aeroplane in War* (London: T. Werner Laurie, 1912), 37.

²⁷T. G. Tulloch, 'The aërial peril', *Nineteenth Century and After* 65 (May 1909), 806; Louis Jackson, 'The defence of localities against aerial attack', *Journal of the Royal United Service Institution* 58 (June 1914), 712.

²⁸See Joseph Morris, *The German Air Raids on Britain, 1914-1918* (Darlington: Naval & Military Press, 1993 [1925]), 68-75.

airminded Conservative MP William Joynson-Hicks spoke in terms of 3000 bombers, while the right-wing aviator (and soon-to-be independent MP) Noel Pemberton Billing wanted the government to build a fleet of 5000 aeroplanes, including 3000 bombers, in only six months.²⁹

By the 1930s, belief in a surprise or a sneak aerial attack (that is to say, coinciding with or even preceding an official declaration of war) became almost axiomatic. While there is evidence for similar sentiments in the pre-1914 period, they were by no means universal – in both *The War in the Air* and *The World Set Free* (1914) Wells had the opening of hostilities signalled well in advance, although in the latter novel the first raid on Paris does come as a surprise and the French are not prepared for it.³⁰ In their 1912 book *The Aeroplane in War*, Claude Grahame-White and Harry Harper quoted a Russian military expert to the effect that the next war would begin in the air; however, they themselves thought more in terms of scouting and perhaps air combat than city bombing.³¹ A writer for *Pearson's Magazine* in 1913 predicted that one morning England or another European power 'will open its eyes to find its capital and its armies menaced by hostile air fleets', and that its only choice would be between surrender or destruction.³² But journalist R. P. Hearne in *Aerial Warfare*, published in January 1909 and one of the very first non-fictional books devoted to the military uses of aircraft, was among the few who considered it probable that a country with a superior aerial fleet would actually try to deliver a 'smashing blow almost simultaneous with the declaration of war' against an overseas country with no air defences (the countries are generically called X and Y, but are obviously meant to suggest Germany and Britain).³³ This came close to describing a

²⁹William Joynson-Hicks, *The Command of the Air: or Prophecies Fulfilled, Being Speeches Delivered in the House of Commons* (London: Nisbet & Co., 1916), 12-3; Noel Pemberton-Billing, *Air War: How to Wage It* (London: Gale & Polden, 1916), 54.

³⁰H. G. Wells, *The World Set Free: A Story of Mankind* (London: Macmillan and Co., 1914), 87-92.

³¹Grahame-White and Harper, *The Aeroplane in War*, 217.

³²'The next war – in the air', *Pearson's Magazine* 36 (July 1913), 44.

³³R. P. Hearne, *Aerial Warfare* (London and New York: John Lane, The Bodley Head, 1909), 152. Hearne was associated with Lord Northcliffe: see Alfred Gollin, *No Longer an Island: Britain and the Wright Brothers, 1902-1909* (London: Heinemann, 1984), 328.

knock-out blow, as it was later to be termed.³⁴

As imagined by these first theorists of strategic bombing, the damage that would be inflicted by aerial attack could fall into one of three categories. First, there were the psychological or morale effects. It was sometimes assumed – particularly at a time when flying machines were extremely rare – that civilians would panic at the mere sight of enemy bombers, even if little physical damage was done. Hearne claimed that the appearance of an unopposed enemy ‘aerial fleet’ over a nation’s capital would be ‘so disastrous and heartbreaking’ that defeat would soon follow, albeit only after news of the raid reached the front.³⁵ This was because of the presumed impossibility of self-defence: ‘There would hardly be a special gun or a well-trained gun crew to attack them, and certainly at such a moment no effective defence could be made against such an unexpected raid’.³⁶ The engineer Charles de Grave Sells thought that ‘in the course of the next war we shall assuredly see the most tremendous scares in large defenceless towns at the bare appearance of a single airship’.³⁷ Similarly, the first deaths in the German attack on New York in *The War in the Air* occur not from bombs, but in the crush of a panicked flight of a crowd from Brooklyn Bridge as it is menaced by an airship.³⁸ These ideas about the behaviour of crowds under air attack were based upon well-established psychological theories, proposed by Gustave Le Bon in France at the end of the 19th century and later elaborated by Wilfred Trotter and William McDougall in Britain, among others.³⁹

The second and more common emphasis was upon the possible effects ensuing from the destruction of the ‘nerve centres’ of a modern society. This drew on a popular idea, seductive to social Darwinists among others, that

³⁴Jackson may have originated the phrase itself in the aerial context, when as an aside he said that an aerial attack on London’s nerve centres would ‘soon be possible; and this is the age of the “knock-out blow” in everything’: Jackson, ‘The defence of localities’, 712. However, the term was not widely used in this sense until the 1930s. For another early use, see p. 271.

³⁵Hearne, *Aerial Warfare*, 138-9.

³⁶*Ibid.*, 139.

³⁷Charles de Grave Sells, ‘Aerial engineering’, in: Fred T. Jane, editor, *All the World’s Air-ships (Flying Annual)* (London: Sampson Low, Marston & Co., 1909), 361.

³⁸Wells, *The War in the Air*, 140.

³⁹See Joanna Bourke, *Fear: A Cultural History* (London: Virago, 2005), 65-71.

societies were analogous to bodies.⁴⁰ In 1876, for example, the philosopher Herbert Spencer wrote in *The Principles of Sociology* of a ‘striking parallelism. Organs in animals and organs in societies have internal arrangements framed on the same principle’.⁴¹ Like a body which has organs for control, energy and waste disposal, an industrial society:

has a set of agencies which bring the raw material, and a set of agencies which collect and send away the manufactured articles; it has an apparatus of major and minor channels through which the necessaries of life are drafted out of the general stocks circulating through the kingdom, and brought home to the local workers and those who direct them; it has appliances, postal and other, for bringing those impulses by which the industry of the place is excited or checked; it has local controlling powers, political and ecclesiastical, by which order is maintained and healthful action furthered.⁴²

A further analogy between ‘individual organisms and social organisms’, according to Spencer, was that the more complex and differentiated a society is, the more vulnerable it is to disruption, since its components are highly specialised and thus irreplaceable:

when they are little evolved, division or mutilation causes small inconvenience, but when they are much evolved it causes great perturbation or death, and that in low types of either kind the parts can assume one another’s functions, but cannot in high types [...]⁴³

⁴⁰See Rodney Barker, *Political Ideas in Modern Britain in and after the Twentieth Century*, 2nd edition (London and New York: Routledge, 1997), 31.

⁴¹Herbert Spencer, *The Principles of Sociology*, volume 1 (London and Edinburgh: Williams and Norgate, 1876), 495. See also Mike Hawkins, *Social Darwinism in European and American Thought, 1860-1945: Nature as Model and Nature as Threat* (Cambridge, New York and Melbourne: Cambridge University Press, 1997), 89-90. Similar analogies date back at least to Thomas Hobbes’ *Leviathan* (1652).

⁴²Spencer, *The Principles of Sociology*, 496.

⁴³Ibid., 508.

It is not possible to draw a direct line between these ideas and those of the early airpower theorists a generation later, but similar ideas suffused Edwardian Britain.

Wells had already depicted what might happen when a city's government, post office and 'other central ganglia' had been destroyed from the air: 'The Germans had struck at the head, and the head was conquered and stunned, no longer capable of collective submission'.⁴⁴ Although he did not use a biological metaphor, Hearne likewise emphasised the vulnerability to air attack of the instruments of government, communication, industry and trade, predicting that a raid by airships would wreak havoc on vital food imports.⁴⁵ The most influential idea was proposed in a speech by the Conservative peer and automotive pioneer Montagu of Beaulieu, delivered in April 1909 at a London meeting of the National Defence Association.⁴⁶ The aeronautics correspondent for *The Times* reported that Montagu described 'the Government buildings, the Houses of Parliament, the railway stations, the telephone and telegraph exchanges, the Stock Exchange, &c' as the nerve centres of 'a highly civilized nation like ours', and stressed 'the paralysis which would result from a single well-directed blow at such centres'. This could fatally undermine Britain's ability to wage war.⁴⁷ Many writers followed Montagu's lead. Tulloch argued that the docks, factories and warehouses of London represented the 'concentrated essence of Empire' which was at the mercy of any aircraft capable of planting 'a dozen incendiary missiles in certain pre-selected spots'.⁴⁸ Grahame-White and Harper quoted both Montagu and Tulloch favourably on this point.⁴⁹ Colonel Jackson asked rhetorically, 'What would be the effect of cutting off the water supply of the East End, or sinking food-ships in the Thames?'⁵⁰ For all of these writers,

⁴⁴Wells, *The War in the Air*, 149, 150.

⁴⁵Hearne, *Aerial Warfare*, 159.

⁴⁶The National Defence Association lobbied on behalf of the Territorial Army: see Morris, *The Scaremongers*, 118. On Montagu, see Paris, *Winged Warfare*, 80-3.

⁴⁷'Aeronautics', *The Times*, 26 April 1909, 19. See also Montagu of Beaulieu, 'Aerial machines and war' (London: Hugh Rees, 1910), 2; Gollin, *The Impact of Air Power*, 126-8.

⁴⁸Tulloch, 'The aerial peril', 805.

⁴⁹Grahame-White and Harper, *The Aeroplane in War*, 208-9.

⁵⁰Jackson, 'The defence of localities', 712.

the increasingly complex interdependence of the components of a modern economy would be a liability in warfare. The modern city simply seemed too fragile to withstand attack.

The third way to defeat a nation by air attack depended not upon weakening morale as such, nor upon highly selective targeting, but upon destruction on a truly massive scale. During this period, such ideas were largely confined to writers of speculative fiction. In Wells' *The War in the Air*, 'a universal social collapse followed, as it were a logical consequence, upon world-wide war', with mass unemployment followed by plague and famine in cities all around the world.⁵¹ He revisited the subject in *The World Set Free*, in which aeroplanes carrying atomic bombs (a term invented by Wells) destroy city after city in an escalating world war:

the flimsy fabric of the world's credit had vanished, industry was completely disorganised and every city, every thickly populated area was starving or trembled on the verge of starvation. Most of the capital cities of the world were burning; millions of people had already perished, and over great areas government was at an end.⁵²

In 1909, the *Pall Mall Magazine* published a short story by T. Donovan Bayley, wherein an invaded Britain strikes back at its attackers using remotely piloted aeroplanes to drop a chemical weapon on Berlin, Paris and other cities, a powder which dissolves the flesh of every person it touches. Europe falls into chaos, and Britain is victorious.⁵³ Such fantasies went beyond simply pointing out the weaknesses of existing societies, as it is difficult to imagine any nation, however robust, coming through such catastrophes intact.

If the home front sustained heavy casualties owing to air raids, then civilians unused to warfare might exert pressure on their government to surrender,

⁵¹Wells, *The War in the Air*, 257.

⁵²Ibid., 80. On Wells' contribution to early ideas about nuclear warfare, see Kirk Willis, 'The origins of British nuclear culture, 1895-1939', *Journal of British Studies* 34 (1995), 71-4.

⁵³T. Donovan Bayley, 'When the sea failed her', *Pall Mall Magazine* 9 (May 1909), 540-7.

as in Bayley's story. Anticipating objections that no nation would carry out such immoral acts as the bombing of civilians, Jackson suggested that 'If it seemed probable that such panic and riot would be caused as to force the Home Government to accept an unfavourable peace, then perhaps it might be done'.⁵⁴ Hearne argued that the morale of British civilians might be particularly susceptible, because as inhabitants of an island nation they were accustomed to feeling secure from attack.⁵⁵ Aston, though, did not think that bombing would 'produce concerted action amongst the population to force their Government to stop the war given 'the right spirit', which could be obtained by allowing civilians to shoot back at the enemy aircraft.⁵⁶ This in itself suggests that he was concerned by the potentially weak morale of civilians, since the employment of *francs-tireurs* was a serious contravention of international law.⁵⁷

The predicted reactions to aerial bombardment sometimes revealed a disdain for, or a fear of, the working classes, particularly in its degenerate form of the irrational mob. Such views spread widely in Edwardian Britain following the discovery by social investigators of a large underclass of financially, physically and perhaps mentally impoverished people in urban areas, and led in different directions to eugenics and the national efficiency movement.⁵⁸ But in writing about airpower, however, these attitudes were mostly latent, rather than explicit. In *The War in the Air*, for example, angry New Yorkers attack the crew of a grounded German airship making repairs. On the one hand, Wells depicted American citizens as inherently unruly, but on the other he also suggested that the destruction by bombing of the instruments of central control exacerbated the situation, since order could no longer be enforced.⁵⁹ But there was also the possibility that airpower could be used for crowd con-

⁵⁴Jackson, 'The defence of localities', 713.

⁵⁵Hearne, *Aerial Warfare*, 158.

⁵⁶Aston, *Sea, Land, and Air Strategy*, 238.

⁵⁷See John Horne and Alan Kramer, *German Atrocities, 1914: A History of Denial* (New Haven and London: Yale University Press, 2001), 145-6.

⁵⁸See Biddle, *Rhetoric and Reality*, 15-6; Daniel J. Kevles, *In the Name of Eugenics: Genetics and the Uses of Human Heredity* (Cambridge and London: Harvard University Press, 1995), 70-6; G. R. Searle, *The Quest for National Efficiency: A Study in British Politics and Political Thought, 1899-1914* (Oxford: Basil Blackwell, 1971).

⁵⁹Wells, *The War in the Air*, 149-50.

trol – indeed, for counter-revolutionary purposes. Cecil Jane believed, and hoped, that aircraft would make revolution impossible, because airmen high above a city would not have the opportunity to fraternise with and therefore identify with crowds below, and so would obey when ordered to open fire. Ultimately, according to some, airpower promised to end the tyranny of the majority: democracy. Jane speculated that ‘Visions of a despotism may appear to be no longer mere wild imaginings, of a depotism [sic] of aviators, who will have the one final argument on their side’: unanswerable force.⁶⁰ Rudyard Kipling demonstrated this in his story ‘As easy as A.B.C.’ (1912), where the reluctant aviator-rulers of the world use their monopoly on airpower to suppress a revolutionary situation in Chicago.⁶¹

Clearly, these writers were not just speculating about the course of the war-to-come; they were also criticising democracy. Wells thought democracy wholly unsuited to the modern world, as it was merely a breeding ground for irrational hatreds and national jealousies – fatal traits when combined with the destructive possibilities of science. In three novels, written in the course of twenty-five years, he employed airpower as the blow which delivers the *coup de grace* to an already sick liberal democratic order, as the prelude to a rebuilding of his ideal world state along technocratic and socialist lines.⁶² Both Kipling and Griffith anticipated Wells in such ideas by some years. Griffith’s *The Outlaws of the Air* ended with the ‘Aerial Navigation Syndicate’ – a group of scientists backed by formidable airpower – imposing peace upon the world and setting up a utopian society in the mid-Pacific.⁶³ And in Kipling’s 1905 short story ‘With the night mail’ (to which ‘As easy as A.B.C.’ is the sequel), he envisioned a world government evolving out of the Aerial Board of Control, which originally had the role of merely regulating

⁶⁰Jane, ‘The political aspect of aviation’, 330.

⁶¹Rudyard Kipling, “‘As easy as A.B.C.’ A tale of 2150 A.D.’, *London Magazine* (March 1912), 3-11; Rudyard Kipling, “‘As easy as A.B.C.’ A tale of 2150 A.D.’, *London Magazine* (April 1912), 163-72.

⁶²Wells, *The War in the Air*; Wells, *The World Set Free*; H. G. Wells, *The Shape of Things to Come: The Ultimate Revolution* (London: Hutchinson & Co., 1933). See p. 195.

⁶³Griffith, *The Outlaws of the Air*.

aerial navigation. This was because ‘Transportation is Civilization’ itself.⁶⁴ Maybe so; but a decade later, the question would become whether civilisation could survive transportation.

Will civilisation crash? 1916-1931

The experience of the First World War gave rise to the theory of the knock-out blow. Before 1914, with little evidence to go on, ideas about aerial warfare were largely guesswork. After 1914, this all changed. The war saw the first large-scale use of aircraft in reconnaissance, in air-to-air combat, and in bombing, including the first strategic bombing missions. Britain was both attacked and attacker. The German Zeppelin raids of 1915-8 on London and other regions were surpassed in intensity by the 1917-8 Gotha and Giant aeroplane raids on London and the south-east. In response, the RAF was formed in April 1918 to provide an effective defence; and in reprisal, British aeroplanes bombed cities in western Germany. The raids were carried out by Britain’s first dedicated strategic bombing unit, the Independent Force, commanded by Major-General Hugh Trenchard.⁶⁵ Had the war continued into 1919, Berlin might have endured its first air raids, carried out by giant Handley Page V/1500 bombers.⁶⁶ Many of the techniques of strategic air warfare were first tried out in 1914-8: for the defence, fighter interception, anti-aircraft guns, balloon barrages, searchlights, and sound location; for the offence, fighter escorts, bomber formations, night raids, and incendiary bombs. Civilians in large cities under threat of attack became used to restrictive ARP: enduring blackouts, sleeping in shelters, listening for alarms. Governments experimented with new methods and organisations: operational research, air defences, the Air Ministry, the RAF. Airmen grappled with the problems of finding their targets, of accurately dropping their bombs and of weaving their way through increasingly well-organised air de-

⁶⁴Rudyard Kipling, ‘With the night mail’, *Windsor Magazine* 23 (December 1905), 63.

⁶⁵Dedicated in theory – in practice it spent much of its time bombing enemy airfields and railways, to the annoyance of the planners in London. See Jones, *The Origins of Strategic Bombing*, 188-90.

⁶⁶See Biddle, *Rhetoric and Reality*, 47.

fences. The prophets of airpower at last had some evidence to draw upon.

They also drew upon broader developments arising from the war. Most important was a new sensitivity to the fragile nature of morale. War between industrialised states turned out to be much more intense and bloody than had been anticipated. Yet it was also more static and protracted, and not the glorious war *à l'outrance* beloved of pre-war novelists and generals alike.⁶⁷ Armies and societies were placed under tremendous psychological and social strain. At the battlefield, soldiers under bombardment could temporarily or permanently lose their 'nerve', an apparently new condition labelled 'shell shock'; or entire units could refuse to fight or to accept discipline – a particular problem for the French army in 1917. On the home front, revolutions knocked Russia out of the war and played a part in forcing Germany to accept an armistice. In the latter case, the hunger and other privations caused by the Allied (primarily British) naval blockade was a crucial factor: civilians were not targeted by aircraft alone.⁶⁸ Indeed, deliberately caused civilian casualties (executions in Belgium, drownings in the Atlantic) were seen to be a morally dubious innovation of this war, and 'frightfulness' or *Schrecklichkeit* a troubling legacy for the future.⁶⁹ This legacy included new weapons, not only Zeppelins and Gothas, but poison gases: chlorine, phosgene, mustard, and lewisite.⁷⁰ Machine guns, artillery barrages, barbed wire, tanks, and U-boats: it was a new warfare.⁷¹ And, presumably, future technological improvements and innovations would make the experience of war even more horrific.

It was at the height of the war that the first coherent theories of the air-

⁶⁷See Tim Travers, *The Killing Ground: The British Army, The Western Front and the Emergence of Modern War 1900-1918* (Barnsley: Pen & Sword Military Classics, 2003 [1987]), chapter 2. These expectations were more characteristic of civilians than the military, however: see Hew Strachan, *The First World War*, volume 1: *To Arms* (Oxford: Oxford University Press, 2001), 1005-14.

⁶⁸See Avner Offer, *The First World War: An Agrarian Interpretation* (Oxford: Clarendon Press, 1989), 69-78.

⁶⁹See Alan Kramer, *Dynamic of Destruction: Culture and Mass Killing in the First World War* (Oxford: Oxford University Press, 2007).

⁷⁰See Tim Cook, "Against God-inspired conscience": the perception of gas warfare as a weapon of mass destruction, 1915-1939', *War & Society* 18 (2000), 47-69.

⁷¹See Travers, *The Killing Ground*, chapter 3.

craft as a war-winning weapon appeared. The earliest was by F. W. Lanchester, an experienced engineer and a member of the government's Advisory Committee for Aeronautics.⁷² In *Aircraft in Warfare*, which was published in book form in January 1916, Lanchester was unsure whether fighters could defend a city such as London against air attack, especially at night or in overcast conditions.⁷³ He argued that the Zeppelin raids had so far been a failure, but also that 'It is more than probable that before the termination of the present war we may witness and experience aerial raids on a scale immeasurably greater than anything so far attempted'.⁷⁴ In fact, airpower 'in future warfare may decide the fate of Nations':

it is the Arm which will have to be ever ready, ever mobilised, both in time of peace and war: it is the Arm which in the warfare of the future may act with decisive effect within a few hours of the outbreak of hostilities.⁷⁵

But while Lanchester did consider the possibility of 'the destruction of a city of 5,000,000 peaceable inhabitants by fire with the scenes of horror that would inevitably ensue', ultimately he believed that the most effective use of aircraft would be operational, to destroy the communications and supply apparatus in the rear area of an enemy army.⁷⁶

It fell to Claude Grahame-White and Harry Harper to present the first fully-fledged knock-out blow theory. Before the war, Grahame-White had been Britain's most famous aviator: in 1910 he narrowly lost the *Daily Mail*

⁷²See Driver, *The Birth of Military Aviation*, 218-24.

⁷³It was based upon a series of articles published in *Engineering* between September and December 1914, which, according to an edition annotated by Lanchester in 1940 and held by the Royal Aeronautical Society Library, were originally drafted in 1913 and 1914. However, the *Engineering* articles said very little about the strategic employment of aircraft; indeed, Lanchester assumed that they would operate in support of the Army and Navy, and that the air force was 'not to be considered [...] as a self-contained service to which large-scale independent duties can be assigned'. Frederick William Lanchester, 'Aircraft in warfare: the dawn of the fourth arm - No. XV', *Engineering* 98 (11 December 1914), 710.

⁷⁴F. W. Lanchester, *Aircraft in Warfare: The Dawn of the Fourth Arm* (London: Constable & Co., 1916), 201.

⁷⁵*Ibid.*, 202.

⁷⁶*Ibid.*, 188, 192.

prize for the first London-Manchester flight, and afterwards he established Hendon as a premier site for aerial spectacles. During the war his company made aircraft for the RFC.⁷⁷ Harper was a journalist who had been chosen in 1906 by Lord Northcliffe as the aviation correspondent for the *Daily Mail*, the nation's first.⁷⁸ In an article published in the *Fortnightly Review* in August 1916, after Germany's Zeppelins had been raiding Britain with impunity, they argued that in the future a nation which was weak in the air could be defeated 'in a few hours':

it will be possible for an enemy, immediately on a declaration of war or without waiting for one, to strike in the course of an hour or so and with precision – using fleets of thousands of machines – against the very nerve centres and vital arteries of any opponent who is ill-prepared; destroying Government buildings, arsenals, factories and railways, paralysing all communications, and blotting out whole cities.⁷⁹

They expanded their argument in their book *Air Power*, published early in 1917. In the next war, they argued, 'Everything must be staked on a rapid blow – a blow so staggering that the enemy cannot recover from it', and predicted that 'death from the air, sweeping a country from end to end, may come, perhaps, without a formal declaration of war'.⁸⁰ It followed, then, that Britain must maintain a large air force after the war:

Money spent on aircraft should be regarded as a form of national insurance – an insurance against our peril should some enemy, striking by air, seek to deliver a blow so sudden and paralysing

⁷⁷See Graham Wallace, *Claude Grahame-White: A Biography* (London: Putnam, 1960).

⁷⁸See Harry Harper, *Twenty-five Years of Flying: Impressions, Recollections, and Descriptions* (London: Hutchinson & Co., 1929), 22-4, 35-7.

⁷⁹Claude Grahame-White and Harry Harper, 'Two years of aerial war', *Fortnightly Review* 100 (August 1916), 210. Compare with their position in early 1915, when they noted that bombing civilians appeared to be counter-productive and not 'worth the candle': Claude Grahame-White and Harry Harper, *Aircraft in the Great War: A Record and Study* (London: T. Fisher Unwin, 1915), 181.

⁸⁰Claude Grahame-White and Harry Harper, *Air Power: Naval, Military, Commercial* (London: Chapman & Hall, 1917), 2, 44.

that the whole nation, crippled and disorganised, would be compelled to sue for an immediate peace.⁸¹

Although they received little credit for it from other writers, the theory of airpower advanced by Grahame-White and Harper in 1916 and 1917 was, in all its essentials, the same as the knock-out blow theory which was to dominate postwar thought about aerial bombardment.

Surprise

The idea of a surprise attack, already common before 1914, now became more widespread – after all, German forces had crossed the Belgian frontier the day before the formal declaration of war. In a postwar study of bomb damage in London, E. C. P. Monson and Ellis Marsland, two members of the British Fire Prevention Committee, thought it ‘more than probable’ that ‘the first a country will know of the commencement of hostilities will be a shower of bombs on the capital or some large city, or even more than one at the same time’.⁸² Lord Thomson, Air Minister in the 1924 Labour government, re-imagined the opening of hostilities in 1914 to give his readers an idea of just how fast an air war would be. Supposing that Germany had then possessed an air force equal to France’s in 1926, then:

German airplanes would have been able to attack London by 5 p.m. on August 4, 1914, and to drop a greater weight of bombs, during that single raid, than was dropped on the whole of Britain during the four years of the World War. Further, it would have been possible to maintain that scale of bombing, day after day, for weeks if not for months.⁸³

There would only be a few hours’ warning at most, or perhaps no warning at all. The conclusion was that there would be no time for mobilisation: Britain had to be prepared at all times for an attack from the air. The

⁸¹Grahame-White and Harper, *Air Power*, 259.

⁸²E. C. P. Monson and Ellis Marsland, *Air Raid Damage in London* (London: British Fire Prevention Committee, 1923), 13.

⁸³Thomson, *Air Facts and Problems* (London: John Murray, 1927), 22.

dramatic possibilities of this was not lost on novelists, who used the idea of a sudden air assault on London to good effect. In his novel *1944*, the Earl of Halsbury – who, as Lord Tiverton, had served in the RNAS during the war and was one of the pioneers of strategic bombing doctrine⁸⁴ – imagined such an attack being delivered immediately after the successful conclusion of a disarmament conference, just to make sure his readers understood his argument.⁸⁵ Whether treacherously delivered or not, the general assumption now was that the next war would start in the air.

Scale

The experience of the First World War generally invalidated the assumption that small numbers of aircraft could wreak havoc on a large scale. Not only were aircraft plainly not powerful enough for that, but the enormous outpouring from the factories of weapons and munitions showed what was now possible: the RFC went into the war with little more than a hundred aeroplanes, but the RAF came out of it with over 22,000.⁸⁶ While there were some exceptions, such as William Le Queux's 1920 novel *The Terror of the Air* (with its lone aerial raider, a throwback to the days of Fawcett and Griffith), the trend was definitely towards massive aerial fleets.⁸⁷ These might be massive only in relation to Britain's wartime experience of air raids: in Hugh Addison's novel *The Battle of London* (1923), a couple of hundred German triplanes are sufficient to destroy Westminster, and Labour MP J. M. Kenworthy warned that the air raids of the future 'will not be a question of scores of aeroplanes, but of hundreds, armed with far more deadly weapons'.⁸⁸ Or they might be massive by any measure: Thomson spoke in terms of thousands of bombers; the biggest German air raid in E. F. Spanner's novel

⁸⁴See Jones, *The Origins of Strategic Bombing*, 142-7.

⁸⁵Earl of Halsbury, *1944* (London: Thornton Butterworth, 1926).

⁸⁶See John James, *The Paladins: A Social History of the RAF up to the Outbreak of World War II* (London and Sydney: Macdonald, 1990), 73. Most of these were reserves to replace combat losses, and not actually operational aircraft, however. Furthermore, only a small proportion would have been suitable for the strategic bombing role.

⁸⁷William Le Queux, *The Terror of the Air* (London: Herbert Jenkins, n.d. [1920]).

⁸⁸Hugh Addison, *The Battle of London* (London: Herbert Jenkins, n.d. [1923]); J. M. Kenworthy, *New Wars: New Weapons* (London: Elkin Mathews & Marrot, 1930), 115.

The Broken Trident (1929; first edition 1926) was carried out by 5000 aircraft; while Halsbury's combined Russo-German air fleet numbered some 20,000.⁸⁹ These numbers presented a problem for airpower theorists: in the postwar pursuit of economy, the RAF's main combat force at home had been pared back to just four squadrons by 1922, two fighter and two bomber; abroad, Germany's air force had been disbanded, and while the French possessed around a thousand aircraft, they were not particularly plausible enemies.⁹⁰

Sceptical readers might have been forgiven, then, for thinking the idea of aerial warfare on such large scales unlikely. There were several responses to this. Some writers admitted that the danger would only arise at some future date, sometimes pointing to the massive rate of aircraft production in the First World War as evidence that a large force of bombers could be quickly assembled.⁹¹ Others predicted the use of incendiaries or gas as a force multiplier. J. B. S. Haldane, a famous geneticist, thought that 'We are, perhaps, inclined to under-estimate the potentialities of town-bombing with high explosive and incendiary bombs', even a relatively small number of which could be used to overwhelm the ability of fire brigades to prevent a general conflagration.⁹² The military theorist Major-General J. F. C. Fuller, an intellectual Army officer, thought 500 aeroplanes carrying mustard gas could turn London into 'one vast raving Bedlam'.⁹³

The most influential idea about bombing to emerge from the postwar period was convertibility, popularised by P. R. C. Groves in a series of newspaper articles (in *The Times* and elsewhere) in 1922.⁹⁴ Groves had served in the RAF in the war, most notably as Director of Flying Operations in 1918,

⁸⁹Thomson, *Air Facts and Problems*, 21; E. F. Spanner, *The Broken Trident* (London: E. F. Spanner, 1929); Halsbury, 1944.

⁹⁰This did not prevent them from being treated as such when convenient: see p. 231. On the RAF's strength in 1922, see James, *The Paladins*, 95.

⁹¹J. M. Kenworthy, *Will Civilisation Crash?* (London: Ernest Benn, 1927), 288.

⁹²J. B. S. Haldane, *Callinicus: A Defence of Chemical Warfare* (London: Kegan Paul, Trench, Trubner & Co., 1925), 57.

⁹³J. F. C. Fuller, *The Reformation of War* (London: Hutchinson & Co., 1923), 150.

⁹⁴Many of these were reprinted, along with various press reactions, in pamphlet form: P. R. C. Groves, *Our Future in the Air: A Survey of the Vital Question of British Air Power* (London: Hutchinson & Co., 1922). On convertibility, see p. 154.

retiring with the rank of Brigadier-General.⁹⁵ In 1919 he was the British Air Representative to the Paris peace conference, and afterwards was involved in monitoring Germany's compliance with the Versailles restrictions on its aviation activities, including a complete ban on military aircraft. It was during this period that Groves became concerned about the strength of the German civil aircraft industry. He argued that civilian airliners and cargo aircraft could be quickly and easily converted into effective bombers, essentially by the installation of bombracks and -sights:

An aeroplane which can carry a certain number of passengers a certain distance at a certain speed is capable of carrying an equivalent weight in bombs for the same distance at the same speed; and any passenger-carrier which is efficient as such can be transformed into an efficient bomber.⁹⁶

In addition, civilian air- and groundcrew could be pressed into military service in an emergency. Convertibility meant that the strength of a nation's air force was not a true reflection of its total airpower.

Seen in this light, Groves found the remarkable strength of German civil aviation in the 1920s extremely disturbing. He acknowledged that Britain could not afford to maintain as large a frontline air force as did France, especially since peacetime conscription was unpalatable to British voters. Therefore, in order to have an affordable yet credible air force, the government needed to support the British civil aviation industry with subsidies.⁹⁷ Many writers took up Groves' line of argument, agreeing with Liddell Hart that the transformation of aircraft from 'a civil to a military use is far simpler than with any of the old-established arms'.⁹⁸ Major-General E. B. Ashmore, the recently retired commander of the Territorial Army's AA brigades, was worried by the report of the Air Minister that the number of air-miles flown by British airliners in 1928 was less than half the French total, and under a

⁹⁵Strictly speaking, Groves' RAF rank was Air Commodore, but he was usually referred to by his equivalent Army rank or as General, as he was originally an Army officer.

⁹⁶P. R. C. Groves, 'Our future in the air', *The Times*, 22 March 1922, 14.

⁹⁷Ibid.

⁹⁸Liddell Hart, *Paris*, 57.

third of the German. This made disarmament extremely risky:

The number of air liners will bear some relation to the mileage; we should, therefore, be badly handicapped after disarmament, if any nation were so unmoral as to go back on Geneva and use its commercial aeroplanes for war purposes.⁹⁹

But just the opposite conclusion was reached in 1927 by Marion Acworth, who published a widely-read polemic called *The Great Delusion* under the pseudonym Neon.¹⁰⁰ She thought that the possibility of conversion meant that there was no need for a permanent air force at all, as civil aircraft could quickly be pressed into service if the need arose.¹⁰¹ This was Groves' argument for a convertible striking force taken to extremes.

Interdependence

As before the war, the complexity of modern civilisation was, according to airpower theorists, its major vulnerability, and much the same language was employed, likening the nation to a human body. For example, Grahame-White and Harper wrote of the ability of aircraft to leap over the battlefield and 'strike directly at the nation itself; to strike a blow, so to say, at its very vitals; paralysing its nerve centres, and robbing it of its power of internal action', seeking to 'make life intolerable' and to 'cripple and disorganise the civilian activities of the nation which is attacked'.¹⁰² If anything, the experience of total war led to an increased awareness of the intricate connections between the components of an industrial economy: between the government and the governed, and between the factories and the frontline.

Captain Basil Liddell Hart was, like Fuller, already a well-known strategist who urged the use of high technology to avoid a repetition of the stale-

⁹⁹E. B. Ashmore, *Air Defence* (London, New York and Toronto: Longmans, Green and Co., 1929), 154. 'Geneva' here refers to the upcoming World Disarmament Conference.

¹⁰⁰Marion Acworth is usually identified as Neon. But she was married to the third cousin of Bernard Acworth, a submariner and later a critic of modern science and commentator on naval affairs, who may have been the actual author of *The Great Delusion*. See Brett Holman, 'Who was Neon?', *Dirigible* (forthcoming).

¹⁰¹Neon, *The Great Delusion*, 232.

¹⁰²Grahame-White and Harper, *Air Power*, 43, 44.

mate of the last war. In 1925 he wrote that ‘A modern state is such a complex and interdependent fabric that it offers a target highly sensitive to a sudden and overwhelming blow from the air’.¹⁰³ He noted the dislocating effects of a peacetime railway strike, and asked his readers to:

Imagine for a moment London, Manchester, Birmingham, and half a dozen other great centres simultaneously attacked, the business localities and Fleet Street wrecked, Whitehall a heap of ruins, the slum districts maddened into the impulse to break loose and maraud, the railways cut, factories destroyed. Would not the general will to resist vanish, and what use would be the still determined fraction of the nation, without organization and central direction?¹⁰⁴

Everyone had their own similar, but slightly different list of vital nerve centres. Air Vice-Marshal Sir Frederick Sykes, for example, who had been CAS at the end of the war, offered the enemy’s ‘centres of population, his mobilization zones, his arsenals, harbours, strategic railways, shipping and rolling stock’.¹⁰⁵

Some writers focused on a single, particularly important target system, which they claimed could be disabled by air attack and so undermine the nation’s ability to fight that it would not be able to continue in the war. One of Spanner’s obsessions was the vulnerability of Britain’s system of commercial docks, through which the majority of food was imported. He argued in two books that these could very easily be put out of action for months. Combined with attack on food warehouses this could bring Britain to the point of starvation, and thus defeat, within weeks.¹⁰⁶ Le Queux also noted Britain’s reliance on food imports. In his 1920 novel, Liverpool is saturated with a persistent, lethal gas which closes its port for several days until a change in

¹⁰³Liddell Hart, *Paris*, 47.

¹⁰⁴*Ibid.*, 47-8.

¹⁰⁵F. H. Sykes, *Aviation in Peace and War* (London: Edward Arnold & Co., 1922), 101.

¹⁰⁶E. F. Spanner, *Armaments and the Non-Combatant: To The ‘Front-line Troops’ of the Future* (London: Williams and Norgate, 1927), 224-32; Spanner, *The Broken Trident*, 152-64.

the weather brings relief.¹⁰⁷

Others emphasised the dependence of a nation's armed forces upon its factories. In *Air Power and the Cities* (1930), J. M. Spaight, an Air Ministry civil servant and lawyer, argued that the primary function of air forces was not to attack civilian morale (a strategy he termed 'direct action') but to undermine the ability of the enemy's armed forces by disrupting the home front's ability to supply them ('military overthrow'). He also used such international laws and precedents as existed (particularly those relating to the bombardment of towns by naval forces) to decide whether various targets were legal or not. He concluded that it was both more effective and more legitimate to bomb armament workers at their factories, for example, but not in their homes.¹⁰⁸

Finally, there was a perception that London itself not only contained the highest concentration of critical targets in Britain, but that it was more vulnerable than comparable cities in other European powers. As Ashmore wrote:

In London to-day is centred at least one-third of the total activities of England; this vast agglomeration of wealth and energy is so disposed as to form a most convenient target for bombs; it is too near the coasts that give on to the Continent to be easy of defence; it possesses an ideal leading mark in the Thames estuary. Paris, Rome, Berlin, Moscow are all less easy to attack, less vulnerable as air targets, and less vital to the existence of their respective countries.¹⁰⁹

In a lecture given in 1926 as part of a series *On The Study of War for Statesmen and Citizens*, Air Vice-Marshal H. R. M. Brooke-Popham made the same argument: 'From the air point of view it [London] is very close to the coast, so that the amount of warning that will be given of the approach of

¹⁰⁷Le Queux, *The Terror of the Air*, 213-5.

¹⁰⁸J. M. Spaight, *Air Power and the Cities* (London, New York and Toronto: Longmans, Green and Co., 1930), 150-3.

¹⁰⁹Ashmore, *Air Defence*, 146-7.

enemy aircraft will be small', only some twenty to thirty minutes.¹¹⁰ Where the sea had once been a shield against attack, Groves noted, it now enabled it, because it allowed the enemy to make surprise attacks and then quickly retreat.¹¹¹

Morale

While many writers assumed that bombing would adversely affect civilian morale, relatively few asserted that this would be the primary cause of a nation's defeat. Fuller was one who did. His central argument in *The Reformation of War* was that war had now passed from the 'physical epoch', with its materialistic emphasis on killing and destruction, into the 'moral epoch', where victory would go to the nation with the strongest morale.¹¹² He reasoned that just as in a besieged city, where it was the civilians who were most likely to treacherously open the gates to the enemy, so too would the civilian population prove the weak point in a modern war. Fuller believed he had recent history on his side: 'A nation septic with revolution can no more wage an organized war than can a man, contorted with colic, shoot snipe. This was the lesson which Russia taught Europe in 1917'.¹¹³ The best way to attack morale, he argued, was gas, '*par excellence*, the weapon of demoralization' because it incapacitated without killing, allowing its victims to spread word of their horrifying experiences.¹¹⁴ And aircraft were the most effective means of delivering gas to civilian populations. His prediction of the effects of a mustard gas attack on London was grim:

Picture, if you will, what the result will be: London for several days will be one vast raving Bedlam, the hospitals will be stormed, traffic will cease, the homeless will shriek for help, the city will be in pandemonium. What of the government at Westminster?

¹¹⁰H. R. M. Brooke-Popham, 'Air warfare', in: George Aston, editor, *The Study of War for Statesmen and Citizens: Lectures Delivered in the University of London during the Years 1925-6* (London: Longmans, Green and Co., 1927), 162.

¹¹¹P. R. C. Groves, 'Our future in the air', *The Times*, 21 March 1922, 14.

¹¹²Fuller, *The Reformation of War*, chapters 4 and 5.

¹¹³Ibid., 105.

¹¹⁴Ibid., 111.

It will be swept away by an avalanche of terror. Then will the enemy dictate his terms, which will be grasped at like a straw by a drowning man. Thus may a war be won in forty-eight hours and the losses of the winning side may be actually nil!¹¹⁵

Fuller's 'moral epoch' was clearly derived from his fear of socialism, his disdain for civilians and his desire to avoid repeating the bloodbath of the last war.¹¹⁶ These were fairly common elements in psychological theories of the knock-out blow from the early 1920s. Spaight took it for granted that the morale of unionised workers would be more fragile than that of the 'steel-hardened mass' of soldiers; although Haldane took the opposite view, arguing that civilians would at least have the psychological comfort of being able to flee an area under gas attack, while soldiers had to remain in place.¹¹⁷

The anticipation of an attempted revolution became particularly acute after the war. In 1916, after a number of large anti-war protests in London, the government for the first time assumed the power (used sparingly, but retained after the war) to ban public gatherings under the Defence of the Realm Act (DORA).¹¹⁸ The race riots which afflicted many cities in 1919 seemed to confirm that the war had brutalised the working classes, making them more prone to violence.¹¹⁹ Red Clydeside, the *Jolly George* incident, the rise of the Labour Party and the founding of the Communist Party all served to increase the perception that militant labour was gaining strength.¹²⁰ These worries found their way into theories of the knock-out blow. Addison ended his story of an attempted communist putsch in London with Britain and Germany trading massive aerial blows; people are driven insane in both London and Berlin, with the latter falling into a state of near-revolution which

¹¹⁵Fuller, *The Reformation of War*, 150.

¹¹⁶See Gat, *Fascist and Liberal Visions of War*, chapter 2.

¹¹⁷Spaight, *Air Power and the Cities*, 160; Haldane, *Callinicus*, 58.

¹¹⁸See Jon Lawrence, 'Public space, political space', in: Jay Winter and Jean-Louis Robert, editors, *Capital Cities at War*, volume 2: A Cultural History (Cambridge University Press, 2007), 294-7.

¹¹⁹See Jon Lawrence, 'Forging a peaceable kingdom: war, violence and fear of brutalization in post-First World War Britain', *Journal of Modern History* 75 (2003), 571.

¹²⁰See Anne Perkins, *A Very British Strike: 3 May-12 May 1926* (London, Basingstoke and Oxford: Pan Books, 2007), 3-18; Brock Millman, 'British home defence planning and civil dissent, 1917-1918', *War in History* 5 (1998), 204-32.

brings the war to an end.¹²¹ In the rather mystical *Konyetz* (1924; written pseudonymously by Oliver Baldwin, the socialist son of Conservative leader Stanley Baldwin), the democracies of western Europe fall one by one to Soviet intimidation and invasion; Britain refuses to comply with the Third International's ultimatum and is bombed and gassed. 'Bands wandered the streets shouting madly, shrieking pathetically, trampling unmercifully': again, people are driven insane by their terror. London collapses into chaos, at which point the last trumpets sound: it is the End of Days.¹²² Somewhat less apocalyptically, in his popular account of the German air campaign over Britain in 1914-8 Captain Joseph Morris made it clear that the few instances of post-raid unrest were confined to the working classes: for example, after the Hull raids of April and June 1915, while the city's 'prominent citizens' stoutly called for effective air defences, the poor reacted by 'trekking' each night into the relative safety of the surrounding countryside.¹²³ The scientist – and Marxist – Haldane was also concerned about the working classes. In his opinion, the fear of gas was due solely to ignorance of its true effects. He therefore recommended increased science education for all classes, but while this would merely avert 'gross mismanagement in high places', lower down the social scale it would help prevent 'panic and stupidity among the masses'.¹²⁴

Not only was there a common perception that workers were prone both to revolution and to panic, but the immigrants and Jews who inhabited the slums of the great cities were believed to be similarly unstable. In Le Queux's novel, even a drop of propaganda leaflets is enough to cause an exodus from London:

Miles away people heard the noise of the shouting and screaming. The scene was bad enough in the purely English districts, but in the East End, in Soho, and similar quarters where Jews and foreigners of all types were still herded together, swamping the

¹²¹Addison, *The Battle of London*.

¹²²Martin Hussingtree, *Konyetz* (London: Hodder and Stoughton, n.d. [1924]), 313.

¹²³Morris, *The German Air Raids on Britain*, 39-40.

¹²⁴Haldane, *Callinicus*, 72.

native population, the panic was indescribable.¹²⁵

Halsbury was another who employed negative Jewish stereotypes: in his novel he wrote of a fat, rich man named Griesheim, ‘with large pudgy hands and an oleaginous smile’. When the bombs start falling, Griesheim thinks only of his own safety and tramples his female companion, forcing an Englishman to punch his face.¹²⁶ But racist undertones were not confined to works of fiction: Monson and Marsland asserted that while there had been few instances of panic during air raids in the late war, those which did take place were ‘largely due to the bad influence of the alien or semi-alien population, who, with but few exceptions, behaved in a manner that was both despicable and dangerous’.¹²⁷

By the late 1920s, overt references to the unsoundness of workers under aerial bombardment had become much rarer. This was largely due to the peaceful defeat of the General Strike in 1926 and the subsequent decline in labour unrest.¹²⁸ As Philip Gibbs wrote in 1929, ‘[i]n no other country in Europe [...] could such a thing have happened without bloodshed, anarchy, and violence’.¹²⁹ It now seemed that the working classes were not inherently revolutionary and thus, perhaps, were less likely to cause a collapse following a knock-out blow.

Speed

Above all other characteristics, the knock-out blow was fast. This was a logical consequence of the presumed capacity of aircraft for surprise and for destruction. If a nation could be devastated from the air with little or no warning, then war was bound to be short. As Grahame-White and Harper

¹²⁵Le Queux, *The Terror of the Air*, 71.

¹²⁶Halsbury, *1944*, 89.

¹²⁷Monson and Marsland, *Air Raid Damage in London*, 8. This is a reference to wartime rumours that wealthy Jews, in particular, had fled London for the safety of resort towns, raising the rents there. Spaight denied that there was any truth to this: J. M. Spaight, *Air Power and War Rights* (London: Longmans, Green and Co., 1924), 9.

¹²⁸See Perkins, *A Very British Strike*, 264-7.

¹²⁹Philip Gibbs, *Realities of War* (London: 1929), 9; quoted in Lawrence, ‘Forging a peaceable kingdom’, 565.

wrote in 1917, a nation inferior in airpower ‘may find itself ravaged, defeated, and rendered helpless, in a conflict which lasts not a year, or a month, or even a week, but as the result of a blow which is struck and completed within a few hours’.¹³⁰ Liddell Hart predicted a war lasting ‘a few hours, or at most days’; Addison, ‘a one-day war’; Fuller, a two-day one.¹³¹ Spanner was more conservative in imagining that Britain might hold out for nearly a month after the crippling of its docks and the blunting of its offensive arms, but that was only because ‘To surrender after only four days of hostilities was unthinkable’ to the Cabinet when it had the full (but in the event useless) support of the Empire.¹³² The sheer speed with which an air war might develop posed a problem for a status quo power like Britain, which relied upon diplomacy to delay or prevent hostilities, and if that failed, upon industry to build arms for defence and offence.¹³³

But such short wars were dependent upon one side or the other possessing or gaining air superiority. If both sides were roughly equal in strength, then an air war might involve each side raiding each other’s cities until one country cracked under the pressure. This in itself assumed that there was no possibility of forcing decisive (in the Mahanian sense) battles *between* opposing air forces.¹³⁴ Although fighters, anti-aircraft guns and balloon barrages were all credited with varying degrees of effectiveness, it was widely accepted that no defence could afford cities complete or even substantial protection.¹³⁵ It was true that fighter performance was increasing; but so too was bomber performance, and their defensive armament was thought formidable. Hence

¹³⁰Grahame-White and Harper, *Air Power*, 45.

¹³¹Liddell Hart, *Paris*, 46; Addison, *The Battle of London*, 286; Fuller, *The Reformation of War*, 150.

¹³²Spanner, *The Broken Trident*, 266.

¹³³See Stephen Kern, *The Culture of Time and Space 1880-1918* (Cambridge: Harvard University Press, 1983), 279.

¹³⁴See p. 161.

¹³⁵It is important to remember that there were dissenters from this view, who argued that sufficiently heavy losses could be inflicted to deter further raids: e.g., Neon, *The Great Delusion*, 225-9; Squadron-Leader, *Basic Principles of Air Warfare*, 59-61; and Ashmore, *Air Defence*, 151-3; see also Ferris, ‘Fighter defence’, 845-84. Conversely, there were those who accepted that the monthly casualty rate in aerial warfare would be on the order of 80%, but believed that the possibility of achieving a knock-out blow would drive airmen to continue to attack regardless of losses: e.g., Thomson, *Air Facts and Problems*, 25.

the widely-held assumption that the only way to defend Britain from aerial bombardment was to attack the enemy first. This just might mean attacking enemy aerodromes to undermine their ability to deliver a knock-out blow. But as aerodromes might be secret or protected (for example, underground), and because a surprise attack could be launched at short notice, many drew the conclusion that Britain itself had to be ready to deliver a reprisal attack. In turn, this led to a deterrence theory: if Britain had the capability to deliver a knock-out blow, then a potential enemy would be deterred from attacking, or even threatening to attack, for fear of the consequences.¹³⁶

Destruction

In some conceptions of the knock-out blow, the devastation caused by aerial bombardment was so immense that it blurred any neat distinctions between morale and infrastructure – the casualties were so high or the destruction so great that any semblance of civilised life in the ruined city was impossible. Even at the lower end of this scale, Haldane suggested that a thousand bombers using high explosive ‘would hardly have left a house in central London untouched, and the dead would have been numbered not in hundreds, but in tens of thousands’.¹³⁷ Thomson believed that aerial warfare would be won by the most ruthless nation, but that:

Both victors and vanquished would be left with ruined cities, widespread distress among the masses of the people, hospitals filled with the maimed and mutilated of all ages and both sexes, asylums crowded with unfortunate human beings whom terror had made insane.¹³⁸

There would only be the illusion of victory, in other words: resentments would fester, and ‘after a few years of peace and preparation, the suicidal conflict would be renewed’.¹³⁹

¹³⁶See p. 150.

¹³⁷Haldane, *Callinicus*, 56.

¹³⁸Thomson, *Air Facts and Problems*, 26-7.

¹³⁹*Ibid.*, 27.

In the light of airpower, mankind's future seemed increasingly bleak. In *Will Civilisation Crash?* Kenworthy listed the weapons by which London could be destroyed, and against which there were no effective defences: high explosives, incendiaries, giant bombs, biological weapons, or even unmanned, remotely-piloted bombs.¹⁴⁰ He then answered in the affirmative the question posed in the title of his book, if nothing were done: 'Man's conquest of the air must be followed by man's conquest of war, or by the end of civilisation'.¹⁴¹ 'Let there be no mistake about it', wrote Spaight in 1924, 'unless air power is regulated and controlled, it will destroy civilisation itself'.¹⁴² Even the sceptical (and pseudonymous) Squadron-Leader, who thought that both public opinion and strategic necessity militated against any attempt at a knock-out blow, admitted that 'If killing is not confined to the armed forces, then I hold civilization is doomed'.¹⁴³ Possibly the gloomiest vision was that of Halsbury. Most of his novel describes journeys through the aftermath of a massive series of lethal gas attacks, first on London, then the large provincial cities, and so on down to the smaller towns. Many millions are killed; law and order breaks down; violence and debauchery become common; and in the wilds of Dartmoor, even cannibalism makes an appearance. While the book ends on a positive note, with some survivors returning to an empty London to begin the task of re-establishing government authority, much the same has happened all around the world and it is apparent that it will be the work of generations to repair the destruction wrought in a few weeks of aerial warfare.¹⁴⁴

Conclusion

In the late 1900s, concern about Britain's ability to endure air raids arose from deeper fears about society's increasing complexity and the unsoundness of the working classes. R. P. Hearne predicted that the appearance of airships

¹⁴⁰Kenworthy, *Will Civilisation Crash?*, 257-63.

¹⁴¹Ibid., 264.

¹⁴²Spaight, *Air Power and War Rights*, 18.

¹⁴³Squadron-Leader, *Basic Principles of Air Warfare*, 69.

¹⁴⁴Halsbury, *1944*.

over a large city would cause dismay. According to Montagu of Beaulieu, the destruction of key nerve centres would cause paralysis. H. G. Wells described the destruction of whole cities and nations by bombing. But none of these writers assembled all of these elements together to predict that airpower would speed up war so dramatically that it would be over in days.

The First World War was the crucial inspiration for the knock-out blow. Its length motivated a search for a quicker way to victory. The immensity and savagery of the war enlarged the imaginations of airpower prophets. Shell shock demonstrated the fragility of the mind under bombardment. British cities were bombed for the first time. Out of this crucible, Claude Grahame-White and Harry Harper created the theory of the knock-out blow. The seductive idea of a short, relatively bloodless war was the ‘bomber dream’ of Martin Middlebrook’s phrase.¹⁴⁵ But since Britain, and especially London, appeared to be uniquely vulnerable to bombing, it was also a bomber nightmare. So after the war P. R. C. Groves and others set to work warning the nation about its aerial danger, adding some new elements such as convertibility and gas, but otherwise conforming to the outlines of the theory advanced by Grahame-White and Harper. In particular, many writers thought that urban, industrialised cities were highly vulnerable to bombing, as the destruction of any one part would disrupt all the rest. Its complexity was the source of modern civilisation’s enormous productive capacity, but in the air age it also appeared to be its weakness.

It has generally been assumed that theories of independent airpower arose in the military. Frederick Sykes and Lord Tiverton are the names most often mentioned in this context.¹⁴⁶ But it is clear that very similar ideas were being discussed in the public sphere first. Tiverton began planning targets for bombing in August 1917; and there is no evidence that Sykes advocated aerial bombardment as a potentially war-winning strategy before the beginning of 1918. Similarly, Trenchard cannot be considered an advocate of the bomber before June 1918 at the very earliest, when he took up command of the

¹⁴⁵Martin Middlebrook, *The Battle of Hamburg: Allied Bomber Forces against a German City in 1943* (Harmondsworth: Penguin Books, 1984), 18.

¹⁴⁶See Ash, *Sir Frederick Sykes*, 100; Jones, *The Origins of Strategic Bombing*, 142-7, 208.

Independent Force, and Groves first advanced (in private) an idea something like the knock-out blow in November 1917.¹⁴⁷ Grahame-White and Harper's article and book preceded all of them by over a year, and F. W. Lanchester, Montagu, Wells and others who published precursors to the knock-out blow were even earlier. It is tempting to suggest that the civilians influenced the military, and not the other way around – Montagu's nerve centre theory shows some resemblance to Tiverton's preference for targeting choke points in the German economy, which was to be so influential upon American airmen, and preceded by some months the Admiralty's first discussions about the defence of its magazines and dockyards from aerial attack¹⁴⁸ – but this cannot be proven either. The most that can be said is that the first civilian theorists had no need of inspiration from the military. This changed to a degree after the war, as former RAF personnel exchanged their swords for pens: the most important example being Groves himself, who worked closely with Sykes and Tiverton in planning British air strategy in 1918.

The widespread revulsion during the war at the use of gas and bombing led some to believe that 'Public opinion is the deciding factor and as such will restrict the use to which these new weapons will be employed', as Squadron-Leader wrote in 1927.¹⁴⁹ But it was more common to concur with Thomson that modern war was 'a fierce, unlimitable struggle for existence, in which laws, chivalry and even decency are sacrificed to military needs'.¹⁵⁰ As the 1930s progressed, the truth of this came to seem more and more self-evident.

¹⁴⁷Draft of letter from P. R. C. Groves to John Salmond, 17 November 1917, 69/34/1, Groves papers, Imperial War Museum. See also Paris, *Winged Warfare*, 240.

¹⁴⁸See Biddle, *Rhetoric and Reality*, 38-9, 65-6; Gollin, *The Impact of Air Power*, 109-23. However, Montagu's list of targets were chosen mainly for their morale effect, and Tiverton's for their industrial effect.

¹⁴⁹Squadron-Leader, *Basic Principles of Air Warfare*, 68.

¹⁵⁰Thomson, *Air Facts and Problems*, 34.

Chapter 2

Evolution of the knock-out blow theory, 1932-1941

The 1920s were a period of relative calm in international relations. In these years, the essential features of the knock-out blow paradigm were refined almost in a vacuum, curiously detached from reality. Without contemporary examples of air wars to draw conclusions from, airpower writers were forced to rely upon increasingly outdated evidence from the First World War and often dubious extrapolations of the future progress of technology. And despite a few scares, such as the Ruhr and Chanak crises early in the decade, there appeared to be no likelihood of another great war in the foreseeable future, and certainly no appetite for one: pacifism reached a peak in the early 1930s, particularly in its humanitarian and non-violent forms.¹ Writers therefore had to invent implausible present-day adversaries or else confine their predictions to some future time when the unthinkable seemed thinkable again. But sooner than anyone had thought likely, such unrealistic assumptions ceased to be necessary. As the 1930s progressed, it seemed increasingly likely that the enemy was going to be Germany, and that war could come soon – perhaps in a few years, perhaps tomorrow. The relentless progress of events transformed the knock-out blow from an abstract possibility into an urgent threat.

¹See Ceadel, *Pacifism in Britain*, 108.

The essential elements of the knock-out blow theory remained unchanged in the 1930s. A knock-out blow was still predicted to be swift, massive and brutal; it would defeat Britain by shattering civilian morale, destroying essential infrastructure, or simply by annihilating cities and their inhabitants. But there were different emphases and new concerns. The fear of gas was now more prominent, as was the fear of mass panic. Estimates of the casualties caused by aerial bombardment increased greatly. Perhaps most importantly of all, early in the decade great emphasis was placed upon the apparent inability of any defences to prevent bombing. A speech by Stanley Baldwin while Lord President of the Council was emblematic of this fear, and was widely quoted in following years as official ‘proof’ of the extreme danger of bombing. Baldwin, the leader of the Conservative Party, had a long-standing concern about the possibility of aerial bombardment; it was during his first premiership, in 1924, that an ARP sub-committee of the CID was secretly established to examine ways of mitigating the potential damage from such an attack.² On 10 November 1932 – the eve of Armistice Day – he declared to the House of Commons that:

I think it is well also for the man in the street to realize that there is no power on earth that can protect him from being bombed, whatever people may tell him. The bomber will always get through [...] The only defence is in offence, which means that you have got to kill more women and children more quickly than the enemy if you want to save yourselves.³

The phrase ‘the bomber will always get through’, especially, entered the public consciousness and came to stand as shorthand for a belief in the invincibility of the bomber, and hence the inevitability of the knock-out blow and the imminence of catastrophe, should the next war ever come. It was constantly quoted by later writers, such as Sir Norman Angell, who added that Bald-

²See O’Brien, *Civil Defence*, 14-5; Keith Middlemas and John Barnes, *Baldwin: A Biography* (London: Weidenfeld and Nicolson, 1969), 718-23.

³HC Deb, 10 November 1932, vol. 270, col. 632; *The Times*, 11 November 1932, 8. See also Middlemas and Barnes, *Baldwin*, 735-6.

win's words expressed 'the all but universal belief and expert conclusion'.⁴ As a generalisation, this was undoubtedly true for much of the 1930s. But it did not remain so as the Second World War approached, for, surprisingly, if only temporarily, the Spanish Civil War showed that the knock-out blow was a chimera. The Second World War complicated matters, as the nation first waited to see if the knock-out blow would indeed be struck; and when it was clear that it would not, began to look forward to its use against Germany.

This chapter comprises four parts. The first covers the evolution of the knock-out blow theory between 1932 and 1935, under the unsettled conditions brought about by the Japanese invasion of Manchuria and the failure of the Disarmament Conference. The second examines how airpower theorists reacted to the first significant examples of the use of airpower since the First World War, in Ethiopia, China and Spain between 1935 and 1937. The third part shows how the knock-out blow theory lost credibility under the impact of more evidence from the Spanish Civil War after 1937. And the fourth part explains how it was revived in a modified form for use against Germany early in the Second World War, up to the end of the Blitz in May 1941.

Menace, 1932-1935

The Japanese invasion of Manchuria in September 1931, and the failure of the League of Nations to stop it, was the first sign that war had returned to the world. Japanese aircraft bombed the Chinese city of Chinchow (modern Jinzhou) in October, and Shanghai between January and March 1932.⁵ In his novel *To-morrow's Yesterday*, design critic John Gloag criticised the idea promoted by certain newspapers that 'These remote wars are outside the affairs of the Empire'.⁶ A vignette of a devastating bombing raid against an unnamed town is followed a few pages later by a reference to 'the reports that followed the Air Force manœuvres every year; reports that underlined

⁴Norman Angell, *The Menace to Our National Defence* (London: Hamish Hamilton, 1934), 67.

⁵See Zara Steiner, *The Lights that Failed: European International History 1919-1933* (Oxford: Oxford University Press, 2005), 720, 731-3.

⁶John Gloag, *To-morrow's Yesterday* (London: Allen & Unwin, 1932), 162.

the fact that London could not be saved from a well-organized air raid'.⁷

Almost simultaneously with the strife in China, and of more immediate concern to British military experts, was the long-planned Disarmament Conference which opened in Geneva in February 1932. This drew together the League, the Soviet Union and the United States in an effort to achieve comprehensive, multilateral disarmament.⁸ Writing towards the end of the year, Major C. C. Turner, the long-serving aviation correspondent for the *Daily Telegraph*, claimed that Britain's voluntary policy of restraint in armaments, intended as a show of good faith, was foolish because 'While the conference is sitting, and it may sit for many years to come, Great Britain is becoming relatively weaker in the air'.⁹ This was 'Britain's Air Peril': unlike other European air forces, the RAF had not increased in size since 1928, which limited its ability to deter a knock-out blow by threatening retaliation.¹⁰ Turner, a regular observer of the RAF's air defence exercises over London, concluded that the capital was both impossible to defend and 'peculiarly open to attack from the air', since 'In order to produce decisive results it would not be necessary to destroy London, it would suffice to cripple its industries and communications, and disorganize its immense and delicate food-distributing system'.¹¹ He did not believe that civilian casualties would be high, however, and implicitly criticised Baldwin's speech as alarmist.¹²

The most influential airpower writer in the 1930s, as in the 1920s, was P. R. C. Groves. His *Behind the Smoke Screen*, published in January 1934, was cited as evidence for the new nature of warfare by at least ten other authors, even those who disagreed with his conclusions; the *Saturday Review* thought that the book was 'largely responsible for rousing public agitation' against the government for its neglect of the RAF.¹³ Groves worried about 'potential war-generating developments': the deepening economic

⁷Gloag, *To-morrow's Yesterday*, 174.

⁸See Steiner, *The Lights that Failed*, chapter 14.

⁹C. C. Turner, *Britain's Air Peril: The Danger of Neglect, Together with Considerations on the Role of an Air Force* (London: Sir Isaac Pitman & Sons, 1933), 127.

¹⁰*Ibid.*, 6.

¹¹*Ibid.*, 1.

¹²*Ibid.*, 104.

¹³*Saturday Review*, 8 June 1935, 725.

gloom since 1931; the growth in European armaments despite the Disarmament Conference; and the arrival of Hitler, under whom ‘Germany’s inherent militarism [...] has again become the dominant influence in the Reich’.¹⁴ But if war threatened, Britain could not play its part in any collective security measures, for the HDAF begun in 1922 (and for which Groves took credit) was still far short of its authorised strength, rendering Britain ‘liable to a knock-out blow from the skies’.¹⁵ Using similar language to Wells’ 1921 preface to *The War in the Air*, Groves laid down a classic definition of how such a knock-out blow could be effected:

In Europe, warfare hitherto primarily an affair of fronts will be henceforth primarily an affair of areas. In this ‘War of Areas’ the aim of each belligerent will be to bring such pressure to bear upon the enemy people as to force them to oblige their government to sue for peace. The method of applying this pressure will be by aerial bombardment of national nerve-centres, chief among which are the great cities.¹⁶

This definition was quoted by several later writers, including Montgomery Hyde and Falkiner Nuttall, and Philip Mumford.¹⁷

The Disarmament Conference continued its deliberations throughout 1933 and into 1934. Progress was plainly slow, and in order to arouse enthusiasm for its work the well-known pacifist playwright Beverley Nichols undertook an investigation of its work and of the danger of war. The resultant book, *Cry Havoc!*, was highly emotive but also extremely popular, going through six impressions in as many months. Nichols was not a military expert himself but accepted the testimony of those who were, which led him to accept a straightforward version of the knock-out blow:

There is hardly a single living authority who attempts to deny that the next war will largely be decided in the air, and that

¹⁴Groves, *Behind the Smoke Screen*, 15, 17.

¹⁵*Ibid.*, 23.

¹⁶*Ibid.*, 32. For Wells, see p. 40.

¹⁷Hyde and Nuttall, *Air Defence and the Civil Population*, 7; Philip S. Mumford, *Humanity, Air Power and War: An Essay upon International Relations* (London: Jarrolds, 1936), 66.

the first and main object of any air force will be to paralyse the enemy's nerve centres – i.e. to destroy the chief enemy towns. This will involve, needless to say, the mass murder of civilians.¹⁸

He was also worried by the rise of Adolf Hitler, but decided to drop a chapter on the German question because he felt that the dictator might soon fall, or perhaps come to his senses.¹⁹ Hitler could not be ignored for long, however. In October 1933 Germany walked out of both the Disarmament Conference and the League of Nations. As late as September 1934 hopes could still be entertained that some way to prevent the horrors of bombing would be found by the remaining diplomats, but in practice Germany's departure meant the end of the Disarmament Conference.²⁰ This meant that the fact that 'the aeroplane is the greatest menace to our homes and country' could no longer be denied, as Lord Davies told an audience of public schoolboys in March 1935.²¹ It also meant the end of the Versailles disarmament regime, which since 1919 had suppressed German military power. German aerial rearmament was now a virtual certainty. A more concrete sign of the changing strategic environment was the announcement in March 1934 by Ramsay MacDonald's government of the first of a series of seemingly interminable plans for RAF rearmament, Scheme A: the first expansion of the air force since 1923.²²

The rise of Hitler and the beginning of rearmament led to an increase in the number of publications in 1934 and 1935 warning of the danger of a knock-out blow from Germany. A typical example is Frank McIlraith and Roy Connolly's *Invasion from the Air*, published in the middle of 1934:

Germany, forbidden by the Versailles Treaty to arm, had continued more or less openly to arm. The Nazis, under cover of their pseudo-military organisation, had built up a huge force of disciplined soldiers. Their supremacy in civil aviation gave them a powerful air fleet, capable of conversion within a few hours into an

¹⁸Beverley Nichols, *Cry Havoc!* (London: Jonathan Cape, 1933), 24.

¹⁹*Ibid.*, 17.

²⁰See, e.g., Philip Noel Baker, 'The International Air Police Force', in: *Challenge to Death* (London: Constable & Co., 1934), 206-9.

²¹Davies, *A Substitute for War* (London: The New Commonwealth, 1935), 13.

²²See Smith, *British Air Strategy between the Wars*, 134-7.

efficient war-machine. Their pilots, trained in the art of dropping mail-bags, would display similar accuracy in dropping bombs.²³

Although their book was fictional, McIlraith and Connolly claimed that it had a factual basis; and Davies, for one, was sufficiently impressed to recommend it to his readers as an accurate prediction of the next war in the air, along with Halsbury's *1944*.²⁴ Books like this laid the basis for the fully-fledged air panic which began in November 1934.²⁵ In light of new intelligence reports of the increasingly rapid growth in German aerial strength, the government announced an acceleration of Scheme A, explicitly intended to deter German aggression. In the House of Commons, Winston Churchill challenged the basis of the government figures, claiming that Germany had already achieved air parity with Britain. This was apparently confirmed by Hitler himself in May 1935 when revealing the existence of the Luftwaffe, which in turn led to Scheme C.²⁶ A proposed air pact – the so-called 'air Locarno', a mutual air defence treaty between France, Germany and Belgium, guaranteed by Britain and Italy – came to nothing.²⁷

Those who agreed that there was a danger of a knock-out blow continued to disagree over the precise way in which it would work. Retreating somewhat from the position he held in 1922, Groves rejected the targeting of infrastructure as too slow to take effect.²⁸ But the man who came to rival him in influence, L. E. O. Charlton, disagreed.²⁹ A prewar RFC veteran, by 1917 Charlton was in command of V Brigade in France. In 1919 he became the Air Attaché in Washington and was promoted to Air Commodore, a title he continued to use in public life. He served as the RAF's Chief of Staff in Iraq in 1923, helping to implement air control, which is when he developed a

²³McIlraith and Connolly, *Invasion From the Air*, 22.

²⁴Ibid., 7; Davies, *A Substitute for War*, 13. On *1944*, see p. 66.

²⁵See p. 231.

²⁶See Smith, *British Air Strategy between the Wars*, 145-6, 152-9.

²⁷See p. 178.

²⁸Groves, *Behind the Smoke Screen*, 172.

²⁹In fact, he overshadows Groves today: the *Oxford Dictionary of National Biography* has an entry for Charlton because of his contributions to the airpower debate, but not one for Groves, despite his greater overall importance.

revulsion against the practice of bombing civilians.³⁰ Relieved of his duties as requested, Charlton eventually resigned from the RAF when he found his further advancement barred. Having tried his hand with some success at autobiography and adventure fiction for boys, from 1935 he turned to the question of air warfare, beginning with *War from the Air*. This was an expansion of a series of lectures he had given at Trinity College, Cambridge, in autumn 1934, which was published the following spring. In it Charlton reviewed the past, present and future of airpower. His moral distaste for bombing was clear from the start: 'Flying is evil through and through, and the reason is not far to seek. It directly subserves the end of war'.³¹ Despite this, he accepted that it was a necessary evil in an imperfect world and rejected the idea of unilateral disarmament.

Charlton argued that a knock-out blow directed at London would target docks and markets to prevent the distribution of food. Power stations would be destroyed in order to disrupt transportation and cut off ventilation and light to the Tube, so that 'the hordes sheltering within, closely crowded and wearing masks, will be suffocated after an interlude of blind panic in the darkness which will beggar description'.³² Charlton reminded the reader of the effects of a failure of Battersea Power Station in July 1934, which he claimed did not go unnoticed in air ministries around Europe.³³ Charlton's emphasis on the importance of infrastructure was often shared by other writers on the left, such as Sir Norman Angell, the 1933 Nobel Peace laureate and a former Labour MP, and Tom Wintringham, the Communist theorist and journalist.³⁴

But even more than the fragility of London's physical infrastructure, Charlton stressed the fragility of its citizens' minds. Certainly there would be panic and demoralisation: mass flight from London, hunger, lawlessness,

³⁰See L. E. O. Charlton, *Charlton* (Harmondsworth: Penguin Books, 1938 [1931]), 276-9.

³¹Charlton, *War from the Air*, 5.

³²*Ibid.*, 171.

³³Many parts of southern England were without electricity for up to an hour. Some transport services in London were also affected. See 'Big electricity breakdown', *The Times*, 30 July 1934, 12.

³⁴Angell, *The Menace to Our National Defence*, 160; T. H. Wintringham, *The Coming World War* (London: Wishart Books, 1935), 33.

near-insanity. Given Charlton's increasingly socialist views (at this time he was a senior member of a group called the Union of Friendship with the USSR), it is interesting to note his belief that the working classes were the most likely to panic, due to their poor living conditions:

it will be the labouring masses, herded in the discomfort of overcrowded, antiquated dwellings in congested districts, themselves the most difficult people to control (factory employées [sic] in particular), who will be more susceptible than most to dismay and stampede when the air-raid warning goes.³⁵

Fears about the weakness of morale bridged the ideological divide. J. F. C. Fuller, very much to the right of Charlton, also had little confidence in the behaviour of civilians under fire. In *War and Western Civilization*, he argued that they always been characterised by 'cringing fear', as opposed to the valour of soldiers: 'It has always been so, because the masses lack discipline; but compared with former times the difference to-day is, that then the common folk were spectators whilst now they are dictators'.³⁶ The fearfulness of civilians, Fuller believed, therefore meant that air raids upon cities – particularly if gas was used – were 'a method endowed with the power of bringing a war to a rapid termination and thereby vastly reducing the destructive nature of war'.³⁷ Fuller's argument here is an extension of that in *The Reformation of War*, but his denunciation of democratic weakness also foreshadows his conversion to Mosleyite fascism two years later.³⁸

The problem of morale was compounded by the near-universal assumption that gas would be used in air attacks against civilian districts. The seeds for this fear had been planted during the First World War, but only now came to full flower. Some novelists even predicted the extinction of almost all human life in Britain after a gas war, such as Moray Dalton in *The Black Death*

³⁵Charlton, *War from the Air*, 173. On Charlton's socialism, L. E. O. Charlton, *More Charlton* (London, New York and Toronto: Longmans, Green and Co., 1940), 156-7, 163.

³⁶J. F. C. Fuller, *War and Western Civilization, 1832-1932: A Study of War as a Political Instrument and the Expression of Mass Democracy* (London: Duckworth, 1932), 234.

³⁷*Ibid.*, 236.

³⁸See p. 61.

(1934).³⁹ Most writers were somewhat more restrained, however. The well-known internationalist Philip Noel Baker's contribution to a November 1934 volume of anti-war essays, *Challenge to Death*, paraphrased Sir Frederick Sykes' beliefs in 1922 on the likely course of an air war: 'in such air attacks against civilian populations, every means of war, including poison gas, would be employed'.⁴⁰ He further asserted that, without exception, the world's air forces were preparing to carry out Sykes' strategy. While admitting that the most lurid visions of air warfare were likely exaggerated, Noel Baker argued that even if Groves had got his figures wrong by a factor of a hundred, then 'it still means the death of *tens of thousands* of people each night'.⁴¹ Another contributor, BBC science journalist Gerald Heard, sketched an outline of the events which would follow a knock-out blow: hunger, panic and the loss of an intangible respect for authority would complete the work of the bombers, and he foresaw a complete collapse of civilisation unless a dictatorship were imposed first. Heard therefore concluded that 'another war must be avoided at any price'.⁴²

This period of early German and British rearmament is notable for some extremely high casualty estimates, from millions in the case of Wintringham, to the entire population of Britain in that of Dalton. But it also saw some attempts to downplay the threat of bombing, as with Conservative MP Harold Balfour's essay in the 1935 collection *The Air is Our Concern*; his fellow contributor J. A. Chamier, Secretary General of the Air League, also doubted that an air war would be very destructive, because it would necessarily be short.⁴³ Conversely, some novelists, who were in other respects

³⁹Moray Dalton, *The Black Death* (London: Sampson Low, Marston & Co., 1934). Moray Dalton was a pseudonym of Arthur Caxton Hames.

⁴⁰Philip Noel Baker, 'A national air force no defence', in: *Challenge to Death* (London: Constable & Co., 1934), 189. Noel Baker (later Noel-Baker) was a Quaker, sometime Labour MP and academic who had spent most of the years since 1918 supporting the cause of the League of Nations, including a year at the Disarmament Conference as secretary to its chairman, Arthur Henderson, the former Labour leader. On Sykes, see p. 58.

⁴¹Ibid., 194; emphasis in original.

⁴²Gerald Heard, 'And suppose we fail? After the next war', in: *Challenge to Death* (London: Constable & Co., 1934), 170. See p. 257.

⁴³Harold Balfour, 'The problem of air defence', in: Nigel Tangye, editor, *The Air is Our Concern: A Critical Study of England's Future in Aviation* (London: Methuen and Company, 1935); J. A. Chamier, "'Policing the Empire'", in: Nigel Tangye, editor, *The*

just as obsessed with the prospect of the coming aerial war as any others, presented scenarios which did not conform to the standard knock-out blow theory, mainly because the wars they described were so protracted. Leslie Reid's Ruritanian fantasy *Cauldron Bubble* described a war more than two years long, in which bombing is initially restricted to military targets but escalates to full-scale city bombing when the ground war stalemates. Eventually millions of civilians are killed by a combination of gas, incendiaries, and high explosive.⁴⁴

Far more widely read than most of these authors was H. G. Wells, whose enduringly famous *The Shape of Things to Come* was published in September 1933. Although this remains his best-known work dealing with aerial warfare, in fact it cannot be classed as a knock-out blow novel. Wells imagined that the current 'World Pax' would be interrupted by a gradually escalating war between Japan and China, involving a mutual exchange of gas attacks on densely populated cities. This is followed by a European war beginning in 1940 with a German invasion of Poland, which immediately engulfs most of central Europe and eventually France.⁴⁵ Like most other writers at this time, Wells also foresaw the liberal use of poison gas against civilians – the Polish air force gasses Berlin almost immediately – but he persisted in his belief that despite its devastating power, airpower would not make wars short and decisive. As in his earlier novels, the war drags on for nearly a decade and ends only with mutual exhaustion and a negotiated peace, not a knock-out blow. And while the now-familiar Wellsian 'ultimate revolution' brings a world state with airpower as its foundation, it is not the gas bomb which provides the necessary destruction of the old order but the germ, in the form of a new disease which crosses the interspecies divide from captive baboons.⁴⁶

Thanks to the Depression, class conflict made a reappearance in knock-

Air is Our Concern: A Critical Study of England's Future in Aviation (London: Methuen and Company, 1935).

⁴⁴Leslie Reid, *Cauldron Bubble* (London: Victor Gollancz, 1934).

⁴⁵Wells, *The Shape of Things to Come*, 202-19.

⁴⁶*Ibid.*, 219-20. Airpower is actually far more potent in the 1936 film version, *Things to Come*, which was scripted by Wells, particularly in the scenes showing the destruction of Everytown (a thinly-disguised London) in an air raid. See Christopher Frayling, *Things to Come* (London: BFI Publishing, 1995).

out blow literature, a trend reflected in the musings of one of the unemployed working-class (and criminal) characters in *The Black Death*:

‘Yes,’ Bert exulted, ‘if this hadn’t happened. Whoever wiped out the blasted bobbies with the rest of the population has done us a good turn, whether it’s the Soviet, or Germans, or Japs, or what not. It’s an ill wind that blows nobody good, Syd. We were the bottom dogs. Now we’re on top.’⁴⁷

A related feature of the literature from these years is the way in which democracy is depicted as either under threat, or as a weakness in defence. In McIlraith and Connolly’s *Invasion from the Air*, the bombing of London and consequent breakdown in law and order lead to street battles between communist and fascist militias; the ‘Nazisti’ are invited to support the Government as an alternative to a Bolshevik revolution.⁴⁸ In Leslie Pollard’s 1935 novel *Menace*, the Soviet Union uses its bombers to create the right conditions for revolution but is foiled by the formation of a virtual military dictatorship.⁴⁹ Heard gloomily predicted that something similar, with a secret police apparatus and a technocratic elite, would be necessary to prevent starvation.⁵⁰ And the war in *The Shape of Things to Come* was a necessary prelude to the destruction of the old, ineffectual order and the re-ordering of the world upon rational technocratic lines.⁵¹ The prevalence of such ideas owed much to the apparent vitality of Hitler’s Germany and Stalin’s Russia, in apparent and unflattering contrast to the drift and lethargy in the Western democracies in the face of the Depression, now in full force.⁵² The tumultuous political events surrounding the formation of the National Government in 1931 only intensified such tendencies. Perhaps a democratic future could no longer simply be assumed.⁵³

⁴⁷Dalton, *The Black Death*, 239.

⁴⁸McIlraith and Connolly, *Invasion From the Air*.

⁴⁹Leslie Pollard, *Menace: A Novel of the Near Future* (London: T. Werner Laurie, 1935).

⁵⁰Heard, ‘And suppose we fail?’, 161-6.

⁵¹Wells, *The Shape of Things to Come*.

⁵²See Barker, *Political Ideas in Modern Britain*, 165-73.

⁵³See p. 115.

These class-conscious writers differed from their predecessors of the 1920s in their interest in fascism, either as threat or as salvation. This was partly due to the rise of the Nazis in Germany, but more important was the temporary prominence of Oswald Mosley's British Union of Fascists (BUF), formed in 1932.⁵⁴ For example, in *Invasion from the Air*, a home-grown fascist movement (obviously based on the BUF) attempts to use the panic caused by a knock-out blow as cover for its seizure of power.⁵⁵ But for every anti-fascist novel, there was an anti-communist one, such as Pollard's *Menace* in which Parliament is destroyed in the knock-out blow, and nearly all MPs are killed. This might have been deemed a tragedy, except that Pollard clearly believed that Britain's politicians had cravenly left their country defenceless in the air. The elimination of the Cabinet allows the formation of a ruling Council of National Defence, with the King as President. Britain is therefore not knocked out of the war but is able to regroup and re-equip, defeat an (inexplicably) delayed second attack on London, and begin raiding Moscow. Eventually, this leads to a fascist revolution which topples the Bolsheviks, and allows Britain to return to democracy.⁵⁶

Towards Armageddon, 1935-1937

Although the international political situation was changing rapidly before 1935, there were still very few air wars and therefore little recent evidence for or against the theory of the knock-out blow: the First World War was still the conflict which most informed British views on the effects of bombing. That now began to change. The conflicts in Abyssinia (1935-6), Spain (1936-9) and China (1937-45) all drew in the air forces of one or more major powers, albeit in relatively small numbers. All involved air raids upon cities and towns,

⁵⁴On the relationship between aviation and British fascism, see Richard Griffiths, *Fellow Travellers of the Right: British Enthusiasts for Nazi Germany 1933-9* (London: Oxford Paperbacks, 1983), 137-41; Colin Cook, 'A fascist memory: Oswald Mosley and the myth of the airman', *European Review of History* 4 (1997), 147-61. On the BUF and British fascism in general, see Martin Pugh, 'Hurrah for the Blackshirts!' *Fascists and Fascism in Britain Between the Wars* (London: Jonathan Cape, 2005).

⁵⁵McIlraith and Connolly, *Invasion From the Air*.

⁵⁶Pollard, *Menace*.

and in Spain the ability of the bomber to get through air defences was tested for the first time since the First World War. Eventually, the accumulated weight of evidence from Spain, in particular, showed that effective air defence was possible, as was effective ARP. But as this section will demonstrate, the knock-out blow theory remained dominant at first, and influenced the interpretation of the early lessons from Abyssinia and Spain, rather than the other way around: the paradigm held.

Moreover, the new appetite of Italy, Germany and Japan for foreign military adventures made a general war seem more likely. Britain might come into conflict with one or more of them through helping to enforce League sanctions, or in defence of its own colonial interests in Africa or the Far East. In November 1935, the League voted sanctions against Italy for its invasion of Abyssinia, a fellow League member. The possibility then existed that Italy would retaliate against British interests in the Mediterranean. To forestall an air attack, the Navy was forced to withdraw its ships from Malta, and deficiencies were found in the RAF's readiness to fight a major war, leading to a further measure of expansion, Scheme F.⁵⁷

The Italian conquest of Abyssinia between October 1935 and May 1936 was greatly aided by Italy's complete air superiority within the theatre of operations. As well as providing close air support to their advancing troops, Italian aircraft deliberately used mustard gas (in both bomb and spray forms) against Ethiopian civilians and Red Cross facilities, the first time gas had been used against non-combatants.⁵⁸ J. F. C. Fuller's analysis of the Abyssinian war appeared nearly a year after it ended, in *Towards Armageddon*. He concluded that this was 'The first test of the most powerful of these new weapons, namely the aeroplane', and he credited its ruthless use by the Italians for the swiftness of their victory, a ruthlessness which dithering democracies could hardly emulate.⁵⁹ He argued for the 'supreme

⁵⁷See Arthur Marder, 'The Royal Navy and the Ethiopian Crisis of 1935-36', *American Historical Review* 75 (1970), 1331; Smith, *British Air Strategy between the Wars*, 163-5.

⁵⁸It is sometimes claimed that the RAF used gas against rebellious villages in Iraq in the 1920s, but no firm evidence for this exists. See Omissi, *Air Power and Colonial Control*, 160.

⁵⁹J. F. C. Fuller, *Towards Armageddon: The Defence Problem and its Solution* (London: Lovat Dickson, 1937), 50.

importance of airpower’:

I have shown that the object is panic, and that as the nerves and will of a civil population can now be directly attacked, unless the people are disciplined to withstand attack, whatever the fighting forces may be worth, the people themselves are nothing other than a highly sensitive revolutionary force, in fact human dynamite.⁶⁰

Although Fuller conceded that the Abyssinian campaign hardly approximated the conditions expected in a European war, he nonetheless extrapolated from the tonnage of bombs dropped by Italy in its course to arrive at an estimate of between four and five hundred civilian casualties per day in Britain in the next war. This, he asserted, was ‘likely to prove cataclysmic’ to an undisciplined nation’s morale, as examples of excessive caution during First World War air raids showed.⁶¹

Fuller’s opinion of the significance of the Abyssinian war was shared by other writers. For L. E. O. Charlton, it was a harbinger of things to come, ‘for no one can pretend that the conquest of Abyssinia was brought about by any other means’ than by Italy’s profligate use of airpower.⁶² J. R. Kennedy, the editor of *Army, Navy and Air Force Gazette*, quite approved of the Italian use of gas, for it was merely ‘the means by which the scientific State may conquer its uneducated opponents’.⁶³ While Kennedy did not credit gas with breaking civilian – as opposed to military – morale in Abyssinia, he nonetheless argued that in an attack on a state such as Britain, gas would be directed against ports and food imports. In breaking the civil will in this way the enemy would break the resistance of the entire nation.⁶⁴

The most influential of the new wars was undoubtedly the Spanish Civil War, fought between July 1936 and April 1939. This was due to a number

⁶⁰Fuller, *Towards Armageddon*, 161-2.

⁶¹*Ibid.*, 166.

⁶²L. E. O. Charlton, *The Menace of the Clouds* (London, Edinburgh and Glasgow: William Hodge & Company, 1937), 14.

⁶³J. R. Kennedy, *Modern War and Defence Reconstruction* (London: Hutchinson & Co., 1936), 206.

⁶⁴*Ibid.*, 206-7.

of factors. The proximity of Spain to Britain meant that it was much easier for journalists and other observers to travel there and send their reports back home. Furthermore, it was European civilians who were under air attack in Spain, which made their experiences apparently more relevant to the ordinary Briton than those of Africans or Asians. And the opposing air forces in Spain were much more equal than in China or Abyssinia, so that conditions more closely approximated those of an aerial war between advanced economies. Above all, the involvement of Germany and Italy on the Nationalist side, and the Soviet Union on the Republican, made the conflict seem like a preview of the next major war, particularly since all sides were trying out new aircraft and tactics. Of especial interest were air raids on Spanish cities and towns: German and Italian aircraft bombed Madrid heavily during the failed Nationalist attempt to capture the city in November 1936, and destroyed about half of Guernica the following April.⁶⁵ Fuller referred to ‘the scenes which have recently disgraced many Spanish cities’ after air raids, and predicted the same fate for British cities.⁶⁶ Charlton thought that Spain showed that Baldwin’s dictum was still valid, because of the increase in the speed and armament of bombers relative to fighters:

There it has been found over and over again that the modern bomber, granted its manning by an efficient and courageous crew, is by no means invariably inferior when in conflict with modern fighters. [...] It becomes obvious, therefore, that interception is far from being a sure shield of defence against bombing squadrons which are fully bent upon attaining their objective.⁶⁷

He also argued that the Spanish conflict proved that no moral qualms would prevent an enemy from assaulting London from the air with all available force, since ‘after the Guernica atrocity in the Basque Province during the Spanish Civil War, to assert that the law of humanity will prevail is to flout precedent in a proceeding which knows no law’.⁶⁸ Thus far, Spain conformed

⁶⁵See p. 249.

⁶⁶Fuller, *Towards Armageddon*, 171.

⁶⁷Charlton, *The Menace of the Clouds*, 48.

⁶⁸*Ibid.*, 37.

to the expectations created by the knock-out blow paradigm.

Cities were bombed in several incidents in the Sino-Japanese War, which began in July 1937; the raids against Shanghai in August attracted particular international attention. However, British airpower writers generally paid little attention to this faraway conflict.⁶⁹ What Japan's aggression did do was to make it a more likely opponent of the British Empire in some future conflict. So too did Italy's invasion of Abyssinia and its military support of Franco in Spain. Germany was, of course, already widely assumed to be Britain's enemy, by virtue of its geographical proximity, its rapidly expanding air force and its presumed antipathy. Now alliances between Germany and Italy or Japan, or both, began to figure more prominently in narratives of the next war.⁷⁰ In part this was because, as 'have-not' nations, they were seen to have reason to make common cause against the 'haves', like Britain and France. Sir Malcolm Campbell, the famous land and sea speed record holder, believed that war was increasingly likely. In *The Peril of the Air*, published in 1937, he suggested that although the Spanish conflict was a potential flash-point, the root problem was that poorer nations like Germany and Italy – quite understandably, in his view – wanted a bigger share of the world's resources. He thought that Italy was for the moment sated with its Abyssinian conquest, and so the primary danger was German expansionism.⁷¹ Campbell had stood as a Conservative candidate in the 1935 general election (and, possibly, was a supporter of the BUF), but used language as much tinged with Marxist ideas as that of the left-wing journalist, John Langdon-Davies.⁷² In *A Short History of the Future*, Langdon-Davies argued that war was virtually certain because, lacking access to raw materials, Germany, Italy and Japan would one day reach a point where their economies were on the verge of col-

⁶⁹The press paid much closer attention in 1938: see p. 251ff.

⁷⁰See, e.g., Collin Brooks, *Can Chamberlain Save Britain? The Lesson of Munich* (Eyre & Spottiswoode, 1938), with its endpapers showing the danger posed to the British Empire by the Rome-Berlin-Tokyo – and Lisbon – axis.

⁷¹Malcolm Campbell, *The Peril from the Air* (London: Hutchinson & Co., n.d. [1937]), 116-7.

⁷²For the claim that Campbell was connected to the BUF, see Stephen Dorril, *Blackshirt: Sir Oswald Mosley and British Fascism* (London: Viking, 2006), 356. But in *The Peril from the Air*, Campbell was strongly critical of fascism in general and Mosley in particular: Campbell, *The Peril from the Air*, 102, 104.

lapse and in desperation would resort to violence. This could only end in the destruction of all governments involved.⁷³ Such scenarios, with their discussions of the strategic situation of the Soviet Union or in the Mediterranean, did at least help erode the previous focus on Britain as the inevitable target of a knock-out blow. But, as Charlton noted, Britain as ‘the most bloated of all the “Haves”’ was naturally despised by the revisionist nations, and could not expect to stand aside in the coming conflict.⁷⁴ The threats to Britain now came from multiple directions, but still most dangerously from the air.

There were other sources of new evidence for the nature of air warfare. Mumford’s interest in the question of humanity in aerial warfare was clearly informed by his experiences with air control in northern Iraq. There, a village bombed in winter would soon be in desperate straits, until the following year when communications could be reopened. Bombing was an easy option for colonial officials faced by recalcitrant tribes, and thus led by degrees to terrorist tactics. For Mumford, air control was the knock-out blow writ small: ‘Here again is illustrated the power of the aeroplane over people in general. Europe can learn much from the lessons of the Indian and Iraq frontiers’.⁷⁵ But the experience of the First World War was, as yet, still the most commonly-cited evidence for the power of the bomber, along with the self-evident advances in aviation technology since 1918. So, when Langdon-Davies tried to foresee the course of the next war, it was the scenes of terror he witnessed during the First World War raids on London, not accounts of bombs falling on refugee columns in Abyssinia, which drove him to conclude that the great danger in air raids was fear:

There were weeks during the Great War when people in the poorer parts of London huddled together every night in whatever shelter they could find and children began to suffer from ‘nerves’ and to grow sickly with twitching faces. And yet what puny harmless affairs those air raids were; to human life an infinitely smaller risk

⁷³John Langdon-Davies, *A Short History of the Future* (London: George Routledge & Sons, 1936), 113-4.

⁷⁴Charlton, *The Menace of the Clouds*, 66.

⁷⁵Mumford, *Humanity, Air Power and War*, 79.

than crossing a motor road in a built-up area.⁷⁶

Probably as a result of the official promotion of ARP after 1935, there was also a new interest in fatal examples of panic in air-raid shelters and tubes, such as had occurred at Bishopsgate tube in January 1918.⁷⁷

It was still widely accepted that the bomber would always get through, even though fast interceptors like the Hawker Hurricane were about to come into service. Experts like Charlton continued to argue persuasively that ‘The day is, strategically, to the bomber. The menace is overwhelming. Against air bombardment there is as yet no adequate defence’.⁷⁸ Others, like Kennedy, predicted that the future belonged to the swift light bomber, in large numbers, rather than the slow heavy bomber.⁷⁹ The increasing speed of bombers coupled with the lack of any distant warning system made the defence problem even worse: Charlton put the time between an enemy air fleet crossing the coast and its reaching London at only six minutes, making an interception by fighters almost impossible.⁸⁰

Panic was still the most feared outcome of an attempted knock-out blow. Fuller believed that German strategy in the next war would be to use its army defensively to sustain national morale in the event of air attack. Its main weapon would be its air force, which would attack suddenly and ‘throw the enemy’s civil population into panic’. The democracies instead remained committed to mass warfare in the old style, and consequently (and foolishly, in his opinion) sought to ban or restrict new weapons.⁸¹ Charlton fleshed out a similar scenario in *War over England*. After a German air strike disables a key London power station, claustrophobic commuters trapped in powerless Underground trains begin to panic, and 80,000 are killed in stampedes. London is stunned by the sudden disasters; martial law is declared. The next day, a bigger force of 150 bombers devastate London’s docks, and the other

⁷⁶Langdon-Davies, *A Short History of the Future*, 88.

⁷⁷See W. O’D. Pierce, *Air War: Its Technical and Social Aspects* (London: Watts & Co., 1937), 62; Frank Morison, *War on Great Cities: A Study of the Facts* (London: Faber and Faber, 1937), 156-7.

⁷⁸Charlton, *The Menace of the Clouds*, 54.

⁷⁹Kennedy, *Modern War and Defence Reconstruction*, 204-5.

⁸⁰Charlton, *The Menace of the Clouds*, 52.

⁸¹Fuller, *Towards Armageddon*, 49.

major ports of Britain suffer in their turn. Those who can afford to do so leave the capital, while the foreign elements remaining in the slums start to riot. That night, incendiaries start thousands of fires and knock out vital components of the water distribution system. The next few days see the beginning of revolution in the provincial cities.⁸²

British infrastructure, too, appeared uniquely at risk to air attack in the mid-1930s. Like Charlton, Kennedy was another who believed very strongly that Britain's economy was vulnerable to a knock-out blow – far more vulnerable than any other country, as he wrote in *Modern War and Defence Reconstruction*, published in October 1936:

The destruction of no other capital in the world would be a compensation for that of London. The crippling of no other capital would have anything like the same damaging effect on the power of resistance of a whole people. More than one-third of our population depends directly on London for its food. The system of communications depends entirely upon it. It is the centre of Government control, of legal control, of distribution of information or propaganda, as well as the home of the most concentrated and influential part of the population of these islands. Latterly, too, in an increasing degree, it has become a manufacturing centre.⁸³

By bombing London's docks, 15 million people could be reduced to starvation conditions, a 'horror unsurpassed in history through the agency of nature or of man', as Charlton argued.⁸⁴ Frank Morison believed that even a 'few well-directed bombs in Whitehall [...] would be more truly demoralizing during the critical days of mobilisation than many a great battle under the old regime'.⁸⁵

⁸²L. E. O. Charlton, *War Over England* (London, New York and Toronto: Longmans, Green and Co., 1936), 153-234. This scenario was republished separately as L. E. O. Charlton, *The Next War* (London, New York and Toronto: Longmans, Green and Co., 1937).

⁸³Kennedy, *Modern War and Defence Reconstruction*, 210-1.

⁸⁴Charlton, *The Menace of the Clouds*, 196.

⁸⁵Morison, *War on Great Cities*, 8. Frank Morison was the pseudonym of Albert Henry Ross, a Christian apologist.

The likelihood that gas would be used in air raids upon British cities greatly increased the predicted danger of bombing. This was partly because of the insidious nature of poison gas: its ability to contaminate an area and deny its use until it could be decontaminated. Langdon-Davies referred to the ‘certainty of gas’, much more dangerous than high explosive or incendiaries.⁸⁶ In Langdon-Davies’ scenario, the attack would begin in the opening hours of the war, by a force of between five hundred and five thousand bombers. Gas attacks on merchant vessels would contaminate vital food imports, and the destruction of key road junctions would cause enormous chaos when Londoners fled the city en masse.⁸⁷ But the alleged potency of gas was due more to the belief that it terrified civilians more than any other weapon, with the possible exception of biological weapons, than to its actual lethality.⁸⁸ For example, Morison concluded that civilians can endure conventional bombing with relative equanimity, ‘but the unrestricted use of lethal gas or bacteria upon the scale predicted by the experts implies *a stampede of the threatened populations* beyond all precedent’.⁸⁹ Combined with incendiary attacks to undermine morale and the destruction of Whitehall, this would inevitably lead to a descent into ‘social, political and international chaos, from which ultimately there would be no escape, save in the rebuilding of civilisation upon saner and more enduring foundations’.⁹⁰

The air defence of Britain, 1937-1939

1937 was the high water mark in the literature of the knock-out blow. Thereafter, the surprising resilience of Spanish civilians under aerial bombardment, even in such unfortunate cities as Guernica and Barcelona, began to lead to the questioning of long-held assumptions about the inevitability of panic. It was also becoming clearer that bombers were highly vulnerable to defending

⁸⁶Langdon-Davies, *A Short History of the Future*, 88.

⁸⁷Ibid., 95-101.

⁸⁸The government’s public ARP programme, which began on a modest scale in 1935, did little at this stage to allay fears. See O’Brien, *Civil Defence*, chapter 3.

⁸⁹Morison, *War on Great Cities*, 184; emphasis in original.

⁹⁰Ibid., 184.

fighters, contrary to the widespread belief that the bomber would always get through. And in an odd and perhaps irrational way, the intense fear of an imminent air attack during the Sudeten crisis in September 1938, followed by the equally intense relief as the immediate threat was removed by the Munich agreement, seemed to relax the knock-out blow's grip on the public imagination. In the official sphere, the Inskip report of December 1937 recommended a shift in defence priority from bombers to fighters, which even the bomber-obsessed Air Staff was forced to take into account in the last RAF expansion programme before the war, Scheme M, authorised in November 1938.⁹¹ By this time, airpower writers had collectively turned against the knock-out blow.

One of the first to recant was Basil Liddell Hart, by now one of interwar Britain's foremost military intellectuals. In *Europe in Arms*, published in March 1937, Liddell Hart was much more sceptical about the possibility of a knock-out blow than he had been in 1925, when he had predicted that an air war might last only hours.⁹² Liddell Hart now mocked the stereotypical view that the next war would begin with massive aerial fleets drowning enemy cities in gas, noting how many writers were simply copying each other 'with certain variations of embroidery'.⁹³ He also pointed out that scientists were generally sceptical of the extreme claims being made for the lethality of gas.⁹⁴ He argued that unrestricted bombing of cities would only happen if the war descended into stalemate; until then the laws of war and the threat of reprisals would restrain both sides.⁹⁵ Although Liddell Hart's thinking was still greatly influenced by the power of the bomber, he did anticipate the more widespread reconsideration of the knock-out blow that was to follow in 1938.

The first, and the most important, reason why the knock-out blow began to lose its hold on the imagination of airpower theorists was that effective air defence now seemed to be possible. For J. M. Spaight, the destruction

⁹¹See Smith, *British Air Strategy between the Wars*, 188-91, 217-20.

⁹²See p. 64.

⁹³Liddell Hart, *Europe in Arms* (London: Faber and Faber, 1937), 320.

⁹⁴*Ibid.*, 321-23.

⁹⁵*Ibid.*, 338-41.

of Guernica merely proved the vulnerability of towns without air defences. In *Air Power in the Next War*, written in July 1938 and published in October, Spaight made it clear that unescorted bombers were highly vulnerable to fighters, contrary to previous dogma. Even though the newest Soviet bombers, fighting on the Republican side, were as fast as Franco's fighters, they still required escorts; and on a raid against Hankow (modern Hankou) in April 1938, 18 out of 50 Japanese bombers were reportedly shot down. Spaight drily concluded 'that it is by no means a foregone conclusion as has been thought that "the bomber will always get through"'.⁹⁶ Jonathan Griffin, the editor of *Essential News*, was another former believer in the invincibility of the bomber.⁹⁷ In *Glass Houses and Modern War*, not only did he argue that air defence was possible in time of war, but that it was the best chance to prevent war in the first place: 'The problem for peaceful nations is, in a nutshell, to make the defence superior to the attack; for peace and freedom are possible only if a successful short war is impossible'.⁹⁸ He still believed that an unopposed air assault would be devastating, due to both the panic and the possibility of critical damage to essential war industries, and to that extent had not deviated from his previous line of argument.⁹⁹ But against fighters, anti-aircraft and ARP, a knock-out blow was far less likely to be successful.¹⁰⁰

Also coming under scrutiny was the idea that civilians would almost automatically panic during air raids and cause the collapse of their government. Spaight pointed out that many towns and cities in Spain and China had suffered from bombing recently, 'yet the moral of their inhabitants was not broken and the war went on'.¹⁰¹ Slightly more ambiguously, Langdon-Davies – now the *News Chronicle*'s correspondent from the Spanish war – argued that even though panic was likely after air raids, the effect would not be as

⁹⁶J. M. Spaight, *Air Power in the Next War* (London: Geoffrey Bles, 1938), 148.

⁹⁷Cf. Jonathan Griffin, *Britain's Air Policy: Present and Future* (London: Victor Gollancz, 1935), 24.

⁹⁸Jonathan Griffin, *Glass Houses and Modern War* (London: Chatto and Windus, 1938), 183-4.

⁹⁹*Ibid.*, 53.

¹⁰⁰*Ibid.*, 186-7.

¹⁰¹Spaight, *Air Power in the Next War*, 81.

bad as previously predicted. He himself experienced several air raids, including the series of heavy Italian raids on Barcelona between 16 and 18 March 1938, and could therefore write with great authority on the responses of civilians to aerial bombardment. In *Air Raid*, he asserted that at Barcelona Italy had been experimenting with new stealth tactics in order to increase surprise and therefore panic.¹⁰² And it was panic above all which was the aim of air raids, for 'It is not Woolwich Arsenal or Croydon Aerodrome that will be attacked in a future war but the nerve centres of the man in the street'.¹⁰³ This was easy to do, as Langdon-Davies' experiences in Barcelona in March showed him. There, in 'twenty-six minutes of visits from half a dozen bombers themselves scarcely in danger destroyed the whole mental life of a million and a half people for forty hours'.¹⁰⁴ But even so, he did not believe that the danger was that terrified civilians would force their government to capitulate:

Panic does not help people to band together to carry out an intelligent constructive revolution; it leaves them bewildered, and content to carry out the mechanical duties of facing scarcity and the miseries of war. In such circumstances, any Government, however vile, has little to fear from the anger of its people, but any Government, however good, has everything to fear from being stunned into inaction or futile unco-ordinated action.¹⁰⁵

Here, there is a new readiness to question the assumptions underpinning the knock-out blow, even as the danger of bombing is acknowledged.

However, the Sudeten crisis of September 1938 revealed that the possibility of a knock-out blow still elicited real fear, and even a degree of panic, among the populace and inside the government: the scepticism of airpower

¹⁰²See p. 250. Langdon-Davies claimed that the bombers switched their engines off while some distance from the city and glided the rest of the way in. Since early raid warnings depended heavily on detecting the engine sounds of approaching aircraft, this meant that civilians were only alerted shortly before or even after the raid arrived overhead. John Langdon-Davies, *Air Raid: The Technique of Silent Approach, High Explosive, Panic* (London: George Routledge & Sons, 1938), 38-40.

¹⁰³Ibid., 22-3.

¹⁰⁴Ibid., 34.

¹⁰⁵Ibid., 139-40.

writers as yet had no influence on belief in the knock-out blow at large.¹⁰⁶ The Munich agreement resolved the crisis peacefully and the immediate danger of aerial bombardment passed. After Munich, the qualitative change in airpower literature – the reaction against the bomber – was now accompanied by a quantitative change. For the first time since the early 1930s the number of books dealing wholly or substantially with the strategy of aerial bombardment began a sharp and sustained decline. And even the hitherto sensationalistic novels of the next war became more subdued. One of the last prewar novels to feature a major air attack against Britain was Nevil Shute's *What Happened to the Corbetts*, published in April 1939.¹⁰⁷ This depicted the struggle for survival of a middle-class Southampton family after a series of night raids by 40 or 50 bombers. The attack comes with no warning; indeed, it is not even clear which country carried it out. Shute's tone is matter-of-fact where earlier novelists tended to be melodramatic; rather than a city in flames, its inhabitants choking on gas, he describes the gradual breakdown of essential services, such as electricity, transportation, and above all, water. This is as much the result of the desire of workers to stay at home and look after their own families as it is of bomb damage itself. Similarly, the exodus to the countryside is motivated by the need to be close to sources of food and water and to move away from outbreaks of cholera, rather than blind panic at the thought of the return of the bombers. Overall, while the air raids lead to much dislocation and some desperation, they do not amount to a knock-out blow, due in part to the success of aggressive air defences: the novel ends with the protagonist volunteering for the Navy to help fight the real war, having seen his family off to safety in Canada. The real danger to Britain, then, is that bombing will distract men from doing their duty and flocking to the colours.¹⁰⁸

Even more firmly on the side of the interceptor was an air force veteran

¹⁰⁶See p. 261.

¹⁰⁷Nevil Shute was the pen name of an aeronautical engineer, Nevil Shute Norway, who had worked on the R100 airship design and co-founded Airspeed, a small but successful aircraft manufacturer.

¹⁰⁸Nevil Shute, *What Happened to the Corbetts* (London and Toronto: William Heinemann, n.d. [1939]). Perhaps as a publicity stunt, the publishers distributed a thousand free copies to ARP workers.

writing under the pseudonym Ajax, a bitter opponent of the reprisal bombing school of aerial strategy. His *Air Strategy for Britons* even included a chapter entitled ‘The bomber will *not* always get through’.¹⁰⁹ Ajax accused technologically conservative RAF officers of sentimentally clinging to their favourite steed – the bomber – and of forgetting the successful air defence of Britain conducted during the First World War. This amnesia had consequences:

Because the British lay mind has been educated to believe that ‘the bomber will always get through,’ there was afforded some excuse for the disgraceful exhibition of September 1938, when over two hundred thousand people from the south-east of the Midlands fled to the west in panic.¹¹⁰

The ‘complete surprise attack, literally “out of the blue,” with which alarmists threaten us, is a stupid myth only sponsored by incredibly stupid fanatics’.¹¹¹ Germany was unlikely to give Britain the excuse to attack its own civilians, according to Ajax, but if it did, Britons would not be the first to break.¹¹²

Liddell Hart continued his attack on the knock-out blow concept. In *The Defence of Britain*, published in the summer of 1939, he wrote that ‘air attack is not so over-whelming as popular fears anticipated’, primarily because of information from Spain which showed that defence was overtaking offence.¹¹³ He did accept that aerial bombardment might result in hundreds of thousands of civilian casualties, and that it was this danger along with RAF deficiencies which ‘formed the chief justification for the British Government’s part in inducing the Czechs to accept Germany’s uncompromising demands’.¹¹⁴ But although a knock-out blow from the air was still possible, the chief danger was that the concentration of so many bombers in Europe might lead to some power deciding that they should be used: ‘As a danger to civilization

¹⁰⁹Ajax, *Air Strategy for Britons* (London: George Allen & Unwin, 1939), 36; emphasis in original.

¹¹⁰Ibid., 46.

¹¹¹Ibid., 136.

¹¹²Ibid., 60-1.

¹¹³Liddell Hart, *The Defence of Britain* (London: Faber and Faber, 1939), 157-8.

¹¹⁴Ibid., 156.

it much exceeds the probable value of the bombing forces as a contribution to the national object in war'.¹¹⁵

That the conventional wisdom was difficult to resist can be seen from T. A. Lowe's foreword to the English edition of Stephen Possony's *To-morrow's War*. Possony had explained that because the number of potential targets (cities) was limited 'the possibility of surprise by the attacker is exaggerated'. But Lowe, a former Army officer, thought he was agreeing with Possony when he wrote that 'The strategy of staking everything in one initial stunning blow might succeed'.¹¹⁶ Lowe was by no means alone in still subscribing to the theory of the knock-out blow. But now even the believers usually had to concede something to the sceptics.¹¹⁷ In the Penguin Special *The Air Defence of Britain*, fortuitously published just after the Sudeten crisis had passed, Charlton stuck to his prior belief that fighters and anti-aircraft guns were no defence against bombers. But he was now forced to address the question of why, then, had bombers not ended the wars in China and Spain with a knock-out blow? His answer was that firstly, aircraft were only being used in those conflicts in small numbers, and that secondly, it was not possible to infer the reactions of British civilians under aerial bombardment from those of civilians in less industrialised countries:

It is not a question of individual courage, but of mass psychology. We have not been put to the test, nor has any country in the world as yet, and it is sheerly impossible to predict what behaviour will result when the trial is on. Highly centralized communities which are hand fed by the services of public utility are in a different category to those of lesser development which are either brutalized

¹¹⁵Liddell Hart, *The Defence of Britain*, 162.

¹¹⁶Stephen Th. Possony, *To-morrow's War: Its Planning, Management and Cost* (London, Edinburgh and Glasgow: William Hodge & Company, 1938), 10, 82. Possony was an official in the Czechoslovakian Air Ministry.

¹¹⁷There were exceptions like Captain Norman Macmillan, who agreed with Charlton that Britain's infrastructure was vulnerable to a knock-out blow, and with Groves that reprisals were the best method of defence. Non-specialist writers were also slower to take the shifting paradigm into account, such as Sir Edward Grigg, who assumed a thoroughly traditional knock-out blow scenario as the basis for his discussion of the next war. Norman Macmillan, *The Chosen Instrument* (London: John Lane The Bodley Head, 1938); Edward Grigg, *Britain Looks at Germany* (London: Nicholson and Watson, 1938).

by their condition, as in China, or systematically exploited, as in Spain.¹¹⁸

Even so, he was willing to use evidence from these wars where it demonstrated ‘the certitude that by persistent effort the bomber can get through’, such as the gliding attacks on Barcelona.¹¹⁹ His co-author Reginald Fletcher, former Lieutenant-Commander, RN, and now a Labour MP, agreed with Charlton that there was a danger of a collapse due to air raids, but only if Britain was undefended in the air.¹²⁰ Major-General Henry Rowan-Robinson’s *Imperial Defence* also appeared shortly after the Czech crisis. In many ways, he presented a standard view of the knock-out blow. A retired soldier, Rowan-Robinson predicted that the next war would likely open with an attack on London without a declaration of war, and would quite possibly involve the use of gas and incendiaries. The complex nature of Britain’s economy made it an ideal target for air attack while the speed of modern aircraft, and London’s proximity to the coast, meant that little warning time could be given. But even Rowan-Robinson displayed doubt. Although he still believed that bombers ultimately could not be repelled, he was forced to admit that ‘Recent information, however, though nebulous in the extreme, indicates that [fighters] are now in the ascendant’.¹²¹ He also noted that ‘The great cities of Spain and China have for the most part survived repeated assaults from the air’, except ‘where the incendiaryism of the defender has completed the work of the bomber’ (a reference to the Nationalist lie that Guernica was destroyed by the Basques themselves, not the Luftwaffe).¹²² More significantly, like Griffin Rowan-Robinson proposed that a strong ARP policy would provide a strong and effective defence against a knock-out blow.¹²³ In practice, even believers were becoming sceptics.

¹¹⁸L. E. O. Charlton, G. T. Garratt and R. Fletcher, *The Air Defence of Britain* (Harmondsworth: Penguin Books, 1938), 28.

¹¹⁹Ibid., 45, 60. See also p. 92.

¹²⁰Ibid., 165-6.

¹²¹H. Rowan-Robinson, *Imperial Defence: A Problem in Four Dimensions* (London: Frederick Muller, 1938), 149.

¹²²Ibid., 139.

¹²³Ibid., 249-50.

Victory from the air, 1939-1941

London's war opened with the long-expected sound of an air raid siren. But the massive air attack predicted by so many airpower theorists did not follow, only the all-clear.¹²⁴ Nor did any raids occur in the following weeks and months. This puzzling fact required explanation, and a number of theories were put forward.

Writing early in 1940, the expatriate RFC veteran A. G. J Whitehouse asked:

Where were the vaunted giant raiders of the night that were to raid Britain? Where were the massed squadrons of grim black bombers that were to bring France to its knees? Where were the aerial gas attacks that would snuff out thousands of the population, the thermite bombs that would burn everything to the ground?¹²⁵

His answer was that the supposed German air menace was a myth: where most commentators had assigned to the Luftwaffe a first-line strength of anywhere between 6000 and 18000 aircraft, he believed that it had far fewer – perhaps only 1000 at the time of the Munich crisis, though he accepted a current estimate of 2700 published in the Italian press in January 1940.¹²⁶ C. C. Turner, whose *How the Air Force Defends Us* was written at around the same time, also believed that Germany's air strength had been dramatically overestimated before the war, noting that there was an important distinction between first-line strength and total aircraft including reserves.¹²⁷

There was some evidence from the current war to support the post-Spain reassessment of air defence. Whitehouse noted that the RAF raids

¹²⁴An account of the false alarm of 3 September 1939, and reactions to it, is given in Harrison, *Living Through The Blitz*, chapter 3. See also Tom Harrison and Charles Madge, editors, *War Begins at Home* (London: Chatto & Windus, 1940), 43-9.

¹²⁵A. G. J. Whitehouse, *Hell in Helmets: The Riddle of Modern Air Power* (London: Jarrolds, n.d. [1940]), 18.

¹²⁶*Ibid.*, 66-8.

¹²⁷C. C. Turner, *How the Air Force Defends Us* (London: George Allen & Unwin, 1940).

against Wilhelmshaven and Cuxhaven on 4 September 1939 took heavy casualties, which showed that anti-aircraft fire was more effective than previously thought.¹²⁸ John Ware, who adapted the first British propaganda film of the war, *The Lion has Wings* (released 3 November 1939), into book form, rhapsodised about Britain's fighter defences: 'Woe to the mighty German bomber, limping along at a mere 200 miles an hour, when it encounters the arrow-like flights of the Spitfires!'¹²⁹ More substantively, but almost as boastfully, he pointed out that 'So far Interceptor v. Raider battles have always been one-sided in our favour'.¹³⁰ If the bomber could not always get through, perhaps it would never try?

For Turner, ARP was a more important explanation for Germany's failure thus far to launch a knock-out blow: the vulnerability, and hence the attractiveness, of the target had been reduced.

Britain provided against that contingency by setting up a highly organised defence system, by evacuating from London many of the Government offices, banking, and business staffs, and industrial organisations, and by removing so many civilians that the sting of an offensive designed to panic the nation was drawn.¹³¹

Turner did not, however, rule out the possibility that mass air attacks against civilians 'may yet have to be reckoned with, if not in this, in some future struggle'.¹³²

E. Colston Shepherd's explanation for the lack of air raids, in a slender pamphlet published in April 1940, was that mutual deterrence had worked – for now:

In the German 'Lightning-war' on Poland the aeroplane was used to the full as an offensive weapon, and the German bombers went

¹²⁸Whitehouse, *Hell in Helmets*, 21-2.

¹²⁹John Ware, *The Lion has Wings* (London: Collins, 1940), 132. On the film itself, see S. P. Mackenzie, *British War Films 1939-1945: The Cinema and the Services* (London and New York: Hambledon and London, 2001), 27-32.

¹³⁰Ware, *The Lion has Wings*, 105.

¹³¹Turner, *How the Air Force Defends Us*, 67.

¹³²*Ibid.*, 8.

into action from the outset, to attack vital centres of communications and military objectives far behind the frontier, and, later, to break down resistance by bombing the civilian population. But outside Poland both sides refrained from actions, over land, which would involve civilian populations and would invite reprisals against other civilian populations.

However, he also warned that ‘The war may not continue to be so scrupulous an affair’.¹³³ Deterrence was also an explanation put forward by Ware, who sardonically observed that ‘We did not know then [before the war] that the mass bombing and the blitzkrieg were reserved for use against the weak, who could not strike back’.¹³⁴

After a few months, the reluctance of the Luftwaffe to attempt a knock-out blow at the start of the war ceased to be remarked upon. Attention soon turned to the first real tests of the RAF: over Norway, over France and the Low Countries, and, at long last, over Britain itself. The Battle of Britain was fought in daylight over southern England between July and September 1940, between formations of German bombers and their fighter escorts and the defending British interceptors. At times there were hundreds of aircraft in the air. Initially, the Luftwaffe attacked shipping and aircraft factories, and when that failed to lure the RAF to its destruction, turned its attention towards the British airfields and radar stations.¹³⁵ Was the Battle of Britain, then, Germany’s attempt to secure the long-heralded knock-out blow? Langdon-Davies, drawing on his experiences in Spain and in Finland during the Winter War, wrote as though it was: he claimed that ‘there are three things that the Nazis are trying to produce in the people of Britain – fear, panic, and nervous exhaustion’.¹³⁶ But, from the perspective of mid-August, Spaight evidently did not agree, since he believed that ‘The great test is yet to come’.¹³⁷

¹³³E. Colston Shepherd, *Britain’s Air Power* (Oxford: Clarendon Press, 1940), 5.

¹³⁴Ware, *The Lion has Wings*, 53.

¹³⁵On the Battle of Britain, see p. 273.

¹³⁶John Langdon-Davies, *Nerves versus Nazis* (London: George Routledge & Sons, 1940), 7.

¹³⁷J. M. Spaight, *The Sky’s the Limit: A Study of British Air Power* (London: Hodder

Spaight was correct. From 7 September 1940, London and its inhabitants became the target of major air raids for the first time since 1918. The Blitz which followed, mostly consisting of nightly raids on London, but also on important provincial cities (including the infamous attack on Coventry on 14 November 1940), was soon seen by airpower writers as a sterner test of British mettle than the Battle had been.¹³⁸ It was certainly the closest Britain had yet come to experiencing the knock-out blow as imagined before the war. H. G. Wells, in fact, saw it as a threat to humanity as a whole:

We are face to face with the Air Terror and probably not a soul among those who set it going had a realisation, even a couple of years ago, of the destructive forces they were unchaining. The war did not begin with this Air blitzkrieg, but now this blitzkrieg is the inexorable problem before mankind.¹³⁹

But in the midst of battle, few writers were prepared to predict British collapse under air attack. This was no doubt partly to avoid appearing defeatist, but also because there was no compelling evidence that this was a possibility. Noel Pemberton-Billing, the former MP and aviation pioneer, displayed more anxiety than most writers professed to feel. In *Defence Against the Night Bomber*, written early in 1941, he argued that:

Enemy air attacks on this country by night are becoming more and more serious a problem [...] there is the effect on the nerves, morale, and energy of the people, which may prove to be more serious in its effect on our war effort than the actual destruction caused by the bombs.¹⁴⁰

Even though he advocated that more resources be invested in air defence, Pemberton-Billing warned that defence alone could never lead to victory.

and Stoughton, 1940), 110.

¹³⁸On the Blitz, see p. 273.

¹³⁹H. G. Wells, *Guide to the New World: A Handbook of Constructive World Revolution* (London: Victor Gollancz, 1941), 36.

¹⁴⁰Noel Pemberton-Billing, *Defence Against the Night Bomber* (London: Robert Hale, n.d. [1941]), 42.

He therefore proposed that Britain, with American assistance, should build 50,000 small, fast bombers. These would bring victory within six weeks by destroying major German cities in turn: ‘The culminating effect of continued attack on an already devastated city is far more appalling in its effect on the entire population of a country than the scattered distribution of the same number of bombs over the whole country’.¹⁴¹ In some respects this strategy matched Bomber Command’s future area bombing policy, and like Air Marshal Arthur Harris, Pemberton-Billing had few moral qualms about what might be involved, asking ‘if the alternative to ruthlessness is defeat, may we start to be ruthless, and if so, when?’¹⁴²

In this way the knock-out blow, so long Britain’s weakness, became for airpower writers Britain’s weapon, not least because there seemed little else on offer. There were signs of this shift even before the war, for example when Shepherd had virtually ignored, in *The Air Force of To-day*, published in mid-1939, the consequences of an aerial bombardment of Britain. Instead he claimed that it was quite possible to devise ‘a feasible plan for bringing a nation as completely under the dominance of Great Britain by the use of air power alone as any victorious army in occupation of conquered territory could have done in the past’.¹⁴³ The following year, Shepherd evidently believed that the RAF was preparing just such a plan, for he intimated that it was gathering information about ‘aerodromes, dockyards, and such other places as might be defined as military or naval targets’ preparatory to a possible offensive, pointedly excluding cities from the potential target list.¹⁴⁴ Like Ware, Whitehouse and Turner, Shepherd claimed that Britain’s air defences were effective, particularly its fighters. Conversely, however, he felt that the RAF’s formations of self-defending bombers were doing a better job at penetrating into hostile airspace than were the Luftwaffe’s, as they were shooting down more intercepting fighters. This belief was shared by Ware, as shown by his exaggerated and lengthy account of the success

¹⁴¹Pemberton-Billing, *Defence Against the Night Bomber*, xxix.

¹⁴²Ibid., xxx. On Harris, see Biddle, *Rhetoric and Reality*, 209-22, 245-53, 257-61.

¹⁴³E. Colston Shepherd, *The Air Force of To-day* (London and Glasgow: Blackie & Son, 1939), 203.

¹⁴⁴Shepherd, *Britain’s Air Power*, 16.

of Bomber Command's raid on German warships at Wilhelmshaven on 4 September 1939.¹⁴⁵ Similarly, Turner wondered why Britain and France had not bombed Germany while it was preoccupied with Poland:

Possibly the best way to convince the German people last autumn that they had been misled would have been a great air offensive against their munitions works, aerodromes, power stations, railways, and ports. No doubt the German air force would have retaliated; but, surely, even at the cost of air raids on Great Britain, it would have been worth while thus to attempt to bring about an early decision.¹⁴⁶

Turner still believed in some form of the knock-out blow, and that if Germany did not try to achieve one, Britain ought to.

By the last few months of 1941, when Auspex's *Victory in the Air* was published, the war's course had changed yet again. The Blitz had, for the time being, ceased and the invasion of the Soviet Union was well underway. Auspex summed up the toll of aerial bombardment thus far: 'Civilians have been slaughtered by the thousand. Thousands more have suffered mutilation. Tens of thousands have been rendered homeless'.¹⁴⁷ But the knock-out blow did not succeed, for 'The spirit of the nation has not been broken. It will never be broken now'.¹⁴⁸ This failure did not, however, mean that an air offensive against Germany would be pointless. In fact, the German assault was a necessary prelude to Britain's own, merciless and far more effective knock-out blow:

Now, we could not do that whole-heartedly unless we were first hammered ourselves; we should be far too soft-hearted, too much inclined to be 'kind to the poor Germans' if we did not go through this bad time ourselves. It is all part of a colossal slogging-match

¹⁴⁵Ware, *The Lion has Wings*, 69-102. On the raid itself, in reality a costly failure, see John Terraine, *The Right of the Line: The Royal Air Force in the European War, 1939-1945* (Ware: Wordsworth Editions, 1997 [1985]), 98-102.

¹⁴⁶Turner, *How the Air Force Defends Us*, 121.

¹⁴⁷Auspex, *Victory from the Air* (London: Geoffrey Bles, 1941), 9.

¹⁴⁸*Ibid.*, 10.

which we are certain to win, if we keep our heads and, which is as important, stay angry to the last.¹⁴⁹

Auspex had drawn a line under the past. The long-expected great aerial assault had come and gone; and it turned out that Britain could, after all, take it. Henceforth, it would be the RAF's turn to do what the Luftwaffe had attempted, but to do it right. The bomber was no longer a threat to Britain; it was its best chance for victory.

Conclusion

Just as the First World War made it possible to imagine a knock-out blow in theory, the startling rise of Hitler and Germany's unilateral shredding of Versailles made it possible to imagine one in practice. No longer was it necessary to dream up unlikely conspiracies between the enemy within and the enemy without: Germany's rapid rearmament, stern authoritarianism and troublesome foreign policy made it increasingly obvious where the attack would come from. The government began to respond to the new strategic situation by expanding the RAF and instituting ARP, which lent further plausibility to the threat of bombing, especially by gas. The wars in Abyssinia, Spain and China made it impossible to pretend that civilians would not be targets in the next war. By 1937, the knock-out blow was firmly established in many minds as the greatest threat to Britain.

Support for the knock-out blow was non-ideological in nature. Socialists such as L. E. O. Charlton and J. B. S. Haldane promoted belief in it just as assiduously as their more right-wing counterparts like P. R. C. Groves and Sir Malcolm Campbell. Pacifists invoked the horrors of the next war as graphically as militarists, if not more. Writers of fiction drew on the works of experts for their terrifying images, while military experts added fictional sections to their books imagining what would happen to Britain's cities if their advice was ignored. The knock-out blow was now a consensus, a paradigm, a template for thinking about the next war.

¹⁴⁹Auspex, *Victory from the Air*, 13-4.

The form of the knock-out blow was now settled: it would be fast, short, and devastating. It would most probably bring Britain to its knees through causing civilian panic, a possibility which received greater emphasis than during the First World War period. But it might also do so by disrupting key infrastructure systems, or through the wholesale destruction of cities. These characteristics ultimately depended on the assumption that the bomber would always get through. However, evidence from the air war over Spain suggested to an increasing number of observers that bombers were by no means as unstoppable as Stanley Baldwin and others had been warning. After a peak in 1937 there was a sudden and sharp decline in 1938 in the number of writers willing to propose straightforward knock-out blow scenarios. The evident failure of bombing to shatter morale in Spain, particularly, aided this process, as did the glimpse of Armageddon during the Sudeten crisis: the British people saw their possible future and found this helped them prepare for it.

The Second World War led to another, more ambiguous shift. When Britain was not attacked at the outset, this seemed in keeping with the new scepticism. And when the scale of air attacks began to increase from the summer of 1940, airpower writers were generally keen to assert that Britain would stand fast and the RAF's air defences would hold back the Luftwaffe, contrary to their virtually unanimous opinion before 1938. Withstanding the Blitz was held to be a triumph of ARP and civilian morale, and a defeat for the bomber. But there was also an undercurrent of concern, suggesting that the prewar attitudes had not been completely erased; and they were soon enough resurrected when Britain went on the offensive itself. Auspex's confidence in Bomber Command in late 1941 was mirrored and preceded by the Air Staff's completely misplaced confidence in late 1940 and early 1941 that it was hitting Germany harder than it was hitting back.¹⁵⁰

Just as during the First World War, in the late 1930s civilian observers anticipated a key shift in aerial strategy before their military counterparts. RAF personnel sent to Spain to report on the air war there went out of their way to dismiss any evidence which did not conform to their long-held

¹⁵⁰See Biddle, *Rhetoric and Reality*, 176-7, 192-4.

precepts. For example, Wing Commander R. V. Goddard explained the high morale of Spanish workers under bombardment by the ‘halcyon sunshine which seems to prevail nine days out of ten in Spain’, in contrast to gloomy Britain. And although he noted that bombers over Spain needed to be escorted by more than double their number in fighters, he still assured his fellow airmen that ‘bomber crews were confident in their ability to bring down fighters’.¹⁵¹ While the RAF did revisit the escort question in 1939, it needed to learn for itself the lessons it could have learned from Spain, by sending unescorted bombers to attack targets on the German coast at the outbreak of war at heavy cost in aircraft and aircrew. But why were civilian observers less dogmatic than the experts? It was not due to any inherent scepticism of the power of bombing. Haldane, for example, did not accept that a knock-out blow was inevitable: he argued strongly for the necessity of civil defence, believing that a system of deep tunnels could provide very strong protection for most of the population. But he pointed to the Barcelona raids in March 1938 as evidence for mass panic, since about a quarter of the population fled the city.¹⁵² And Haldane also believed that ‘the air raids in future wars will be on an altogether different scale from those of the 1914-1918 war, and will become wholesale massacres unless really adequate Air Raid Protection [sic] is given’.¹⁵³

Haldane’s conclusions, and those of others outside the RAF, help to explain their increasing readiness to discount the knock-out blow as war approached: it was because as a group they were not so beholden to one particular response to an attempted knock-out blow. As an institution, the RAF favoured a counter-attack, and to a lesser extent air defence, whereas unofficial writers were free to explore ARP, anti-aircraft defences, collective security or an international air force. Hence the RAF’s reversion to the counteroffensive once the Battle of Britain had passed, in this case before civilian

¹⁵¹R. V. Goddard, ‘Republican Spain: General Report’, 11 March 1938, 20-1, 22; quoted in Biddle, *Rhetoric and Reality*, 117, 118. See also James S. Corum, ‘The Spanish Civil War: lessons learned and not learned by the Great Powers’, *Journal of Military History* 62 (1998), 315-8, 331-2.

¹⁵²J. B. S. Haldane, *A.R.P.* (London: Victor Gollancz, 1938), 55.

¹⁵³*Ibid.*, 42.

thinking: it had never really believed otherwise. Part II will explore these varied responses to the knock-out blow.

Part II

Responses

Chapter 3

Adaptation

As Part I has shown, an attempted knock-out blow against Britain was widely believed to be potentially devastating, possibly even to the point of causing the collapse of civilisation. Naturally, this threat stimulated a search for some way to prevent a knock-out blow from succeeding. The proposed responses took a wide variety of forms, ranging from the evacuation of exposed areas to the formation of an international air force. They were not mutually exclusive: while some writers argued that there was only one answer to the problem of the knock-out blow, others believed that it was wiser to adopt a mix of policies. Many of these proposals were actually tried, in one form or another, in both peace and war. But the literature on the knock-out blow has previously focused mostly on military and diplomatic responses, particularly the expansion of the RAF and the cult of the counter-offensive: an understandable consequence of the dominance of air policy and air strategy historians in the study of ideas about bombing.¹ Of the other responses, evacuation, for example, has received far more attention than air raid shelters.² Air raid precautions (ARP) in general and the international air force

¹E.g., Richard Overy writes that ‘There were two possible responses to the bombing threat [...] the search for a satisfactory framework for mutual restraint [and] the search for a mutual deterrent’. This is true, but only in a limited context. R. J. Overy, ‘Air power and the origins of deterrence theory before 1939’, *Journal of Strategic Studies* 15 (1992), 80.

²E.g., see Ruth Inglis, *The Children’s War: Evacuation 1939-1945* (London: Collins, 1980). There is no equivalent work on shelters, or indeed on ARP as a whole. But see Helen Jones, *British Civilians in the Front Line: Air Raids, Productivity and Wartime*

are two important types of response which have suffered relative neglect as a consequence. This is unfortunate, because the responses to the knock-out blow were the real ideological battleground, whereas the knock-out blow itself was, in general, not a matter for contention. When the Union of Democratic Control (UDC) referred to ‘The great defence hoax’, it did not mean that there was no danger of bombing, but rather that ‘the only defence against air attack is the absolute prevention of war’ instead of more British bombers or even ARP.³ Such responses need to be examined in order to understand how British society as a whole engaged with the threat of the knock-out blow.

David Omissi has explored the responses of indigenous societies in Africa and the Middle East to the threat of British airpower in the form of RAF air control policies. He finds three major types of responses: terror, adaptation and resistance.⁴ While these colonised societies differed greatly from Britain, an industrialised, imperial power, Omissi’s schema provides a useful basis for understanding British responses to the threat of the knock-out blow. There are two caveats. The first is that Omissi’s concern is with the *actual* responses of indigenous societies to bombing, whereas here it is the *proposed* responses which are of interest. And since terror was an involuntary and harmful response – indeed, one of the most terrible consequences of a knock-out blow – it is not a useful category in the present context.⁵ The second is that Britain, as one of the great powers, had potential options which were not available to indigenous societies, including the use of airpower or diplomacy. Consequently, it is necessary to extend Omissi’s schema to include an additional type of response: internationalism. These changes result in the following categories, in order from most passive to most active:

1. Adaptation: psychology, politics, dispersal and evacuation, protection
2. Resistance: air defence, anti-aircraft weapons, counter-offensive

Culture, 1939-45 (Manchester and New York: Manchester University Press, 2006) for a recent, partial exception.

³*Poison Gas* (London: Union of Democratic Control, 1935), 61.

⁴Omissi, *Air Power and Colonial Control*, 112-33.

⁵See p. 43.

3. Internationalism: limitation, disarmament, collective security, internationalisation

In general, proponents of one type of response did not question the knock-out blow itself, but only one or more of its tenets: for example that the bomber will always get through (so air defence is possible) or that damage to morale will be much more than damage to buildings and bodies (so deep shelters are needed).⁶ Responses could be combined, as when Aldous Huxley proposed building granaries around the country (dispersal), the expansion of fire-fighting services (protection), the reconstruction of cities into tall, bomb-proof towers (protection), the elimination of the bomber fleet (disarmament) and the return of free trade (internationalism of some form).⁷

This chapter will examine adaptation; subsequent chapters will discuss resistance and internationalism. Advocates of adaptive responses to the danger of a knock-out blow largely accepted that it could not be prevented or deterred. Instead, they sought to mitigate its effects by adapting society to the realities of air warfare.⁸ It was imagined that this could be done in one of several ways: most commonly, by reinforcing morale through psychological or political means, by dispersing the target population and infrastructure over a wide area, or by protecting the population with air-raid shelters. Less frequent suggestions included concealing potential targets from the air, deceiving enemy bombers as to the location of targets, and the development of improved early warning systems.⁹ In general, adaptive responses relied upon compulsion by the state or choices freely made by individuals: authoritarianism or liberalism.

⁶For an example of the latter type of thinking, see Haldane, *A.R.P.*, 42.

⁷Aldous Huxley, editor, *An Encyclopædia of Pacifism* (London: Chatto & Windus, 1937), 36-7.

⁸For a general discussion of adaptive responses in Britain during the Second World War, see Mackay, *Half the Battle*, 31-9.

⁹See, e.g., A. M. Low, *Modern Armaments* (London: John Gifford, 1939), 175-87; Ajax, *Air Strategy for Britons*, 81-5.

Psychology

One of the most crucial features of a knock-out blow was its perceived effect on civilian morale, either directly through the terrifying experience of air raids, or indirectly through the destruction of the infrastructure needed to sustain daily life. The presumed inability of civilians to withstand these psychological pressures was contrasted by some writers with the solidity of soldiers under fire, as when L. E. O. Charlton recalled the Zeppelin raids of the First World War: ‘They laid bare our moral bones. Lacking the strength afforded by discipline and training, such as belongs to the fighting man proper, we were liable to confusion and panic’.¹⁰ Such reflections could lead to the conclusion that civilians must become more like soldiers if the nation were to survive the coming air war. The most persistent exponent of this idea was J. F. C. Fuller. In an unpublished manuscript of 1910-1, he had already noted that discipline, instilled by drill, was how a mob was turned into an army, enabling its members to master fear and flight reactions.¹¹ After the war, he developed this belief into a ‘self-apparent’ axiom that ‘soldiers are controlled by discipline, civilians by fear’.¹² By 1937, in *Towards Armageddon*, he was arguing that civilian morale would be the primary target in the next war, and that since war could begin at any time, ‘the entire nation must be disciplined in order to provide a stable moral base for offensive action’. By this he meant constant drilling in what to do in an air raid.¹³ In part, this was a return to the ideals of the Edwardian national efficiency movement, which demanded the imposition of compulsory military service, or at least training, in order to improve the nation’s competitiveness in war and industry.¹⁴ Conscription had long been a staple issue of right-wing politics. However, by 1938, it was no longer linked by politicians to Army recruitment, as it had been before the First World War, but to providing men

¹⁰Charlton, *War Over England*, 33.

¹¹See Gat, *Fascist and Liberal Visions of War*, 22.

¹²Fuller, *The Reformation of War*, 105.

¹³Fuller, *Towards Armageddon*, 48, 177-8.

¹⁴See Searle, *The Quest for National Efficiency*, 65-7; Frans Coetzee, *For Party or Country: Nationalism and the Dilemmas of Popular Conservatism in Edwardian England* (New York and Oxford: Oxford University Press, 1990), 38-42.

for civil defence and anti-aircraft (AA) duties: that is, for providing defence against the knock-out blow.¹⁵ The Territorial Army had had responsibility for AA since 1922, but even after Munich the government resisted pressure to impose a formal rank structure and system of discipline for ARP volunteers.¹⁶ Civilian resistance to militarisation died hard.

But Fuller was far from alone in drawing upon military analogies. Official Home Office advice on the actions to be taken during air raids likened each dwelling to a military unit: 'The head of the house takes command, and because everyone in the household knows what to do and where to go, there is no indecision and no panic'.¹⁷ Edward Glover, a prominent psychotherapist, preferred to lay responsibility on each individual: each civilian 'must become his own sergeant-major. He must cultivate *self-discipline*'.¹⁸ While each of these examples urged that civilians follow military models, they differed in important respects. Glover's point was that civilians were not in fact part of an organised group which provided mutual aid and morale support, but the advice from the Home Office suggested that this function could be fulfilled by the household. Fuller's discipline would be inculcated by the state, whereas Glover's would arise from the determination of individuals not to show fear. In other words, these approaches ranged between authoritarian and individualist, fascist and liberal.

The liberal approach was more popular, focusing on individual education and endeavour, not compulsion. Perhaps there was some truth in the suggestion of Francis Pickett, the author of *Don't Be Afraid of Poison Gas*, that the British were 'much too self-conscious to take any measure of precaution as a body, and [so] the individual must look out for himself'. Unlike most purveyors of knock-out blow theories, whose intentions were essentially

¹⁵See, e.g., Grigg, *Britain Looks at Germany*, 120-4; also N. J. Crowson, *Facing Fascism: The Conservative Party and the European Dictators, 1935-1940* (London and New York: Routledge, 1997), 149-50.

¹⁶See O'Brien, *Civil Defence*, 206; also Roger Broad, *Conscription in Britain 1939-1964: The Militarisation of a Generation* (London and New York: Routledge, 2002), 35, 88.

¹⁷Home Office, *The Protection of Your Home Against Air Raids* (London: His Majesty's Stationery Office, 1938), 21.

¹⁸Edward Glover, *The Psychology of Fear and Courage* (Harmondsworth: Penguin, 1940), 21; emphasis in original.

to frighten their readers, Pickett presented information about the effects of raids in order to reduce anxiety about the prospect of bombing by informing civilians what to expect.¹⁹ Similarly, James Kendall, a chemist, argued that fear of gas was wildly exaggerated, and asked why cannot ‘the average man [...] cultivate the same sensible state of mind with regard to the minor menace of poison gas that he already holds with regard to that major menace, the motor-car?’²⁰ Such arguments could be applied to the risks of air raids in general. John Langdon-Davies, who had already witnessed the effects of air raids in Barcelona in March 1939 and in Finland during the Winter War of 1939-40, published a book entitled *Nerves versus Nazis* just before the beginning of the Blitz.²¹ He maintained that the major objective in war was ‘not to kill, but to exhaust until the mind no longer works properly’, and that the mental strain caused by air raids was one of the most effective means of achieving this.²² Therefore what was needed was ‘a manual of first aid for the mind’, and to this end he attempted to help his readers put the risks of harm in an air raid into proper perspective.²³ For example, ‘The second rule is to realize how very large the world is, how very large your own district is compared with the amount of space covered by one bombhole’.²⁴

Compulsory registration for military training was introduced in March 1939, albeit on a limited basis; more comprehensive conscription followed in October after the outbreak of war. ARP regulations weighed heavily upon the civilian population, particularly the blackout, which was policed by air-raid wardens, and evacuation, which separated children from their families.²⁵ Food and other essential commodities were strictly rationed. The prewar predictions of the regimentation of civilian life under the conditions of aerial

¹⁹F. N. Pickett, *Don't Be Afraid of Poison Gas: Hints for Civilians in the Event of a Poison Gas Attack* (London: Simpkin Marshall, n.d. [1934]), 32.

²⁰James Kendall, *Breathe Freely! The Truth about Poison Gas* (London: G. Bell and Sons, 1938), 174. In 1925, J. B. S. Haldane was perhaps the first to make this argument: ‘our greatest weapon in chemical warfare is not gas, but education, and education of all classes’. Haldane, *Callinicus*, 62.

²¹On Barcelona, see p. 92.

²²Langdon-Davies, *Nerves versus Nazis*, 10.

²³Ibid., 7.

²⁴Ibid., 17.

²⁵See O'Brien, *Civil Defence*, 293.

warfare were therefore realised, at least in part. After the Blitz, however, the privileging of military discipline over civilian individuality began to be reversed. Psychologist P. E. Vernon noted the surprisingly low incidence of mental health problems after air raids when compared with soldiers in the front line.²⁶ He suggested that the reason lay in the greater ‘healthy-mindedness’ of civilians, since unlike soldiers, they were close to family and home, were more able to move freely about, and were more able to express fear without shame.²⁷ If London could take it, it was apparently precisely because of its civilian nature and not because it had yielded to the dictates of militarisation.

Politics

In the Whig tradition of parliamentary history, Britain’s long march towards universal adult suffrage was finally achieved in two stages, in 1918 and 1928, when adult women gained the right to vote. Yet only a few years later the value of liberal democracy was itself being questioned. This was because of the crippling impact of the worldwide Depression, which began to hit Britain hard from 1931, and the apparently superior ability of authoritarian regimes in the Soviet Union, Italy and, from 1933, Germany to weather the economic storm.²⁸ And the increasing possibility of another world war only intensified democracy’s difficulties. The socialist H. N. Brailsford, one of the first members of the UDC, suggested in 1934 that ‘In the face of external dangers and difficulties, if they approach a state of war, democracy must give way’.²⁹ One reason for this was the threat of a knock-out blow, in which the influence of the people on their government might mean the end of Britain’s national existence.

Preparing the nation for aerial bombardment appeared to be a much more difficult task for democracies than for dictatorships, as Jonathan Griffin noted

²⁶See Bourke, *Fear*, 228-31.

²⁷P. E. Vernon, ‘Psychological effects of air-raids’, *Journal of Abnormal and Social Psychology* 36 (1941), 474-5. Haldane had made a similar argument in 1925: see p. 61.

²⁸But see also Barker, *Political Ideas in Modern Britain*, 167-78.

²⁹Henry Noel Brailsford, *Property or Peace* (London: Victor Gollancz, 1934), 59.

in 1938 after several years of limited progress in official but non-compulsory ARP programmes.³⁰ This suggested to some that, just as civilians needed to become more like soldiers to withstand air attack, democracy needed to become more like an army, with decreased freedom and increased regimentation. J. F. C. Fuller was one of the few who eagerly embraced this creeping fascism: unsurprisingly, as after 1934 he was a committed Mosleyite. He now used his earlier arguments about the high probability of civilian panic in air raids in support of his political views, claiming that the dictatorships, being better able to constrain the behaviour of their citizens, were better suited to fighting modern wars than the democracies: ‘C.3 governments cannot produce A.1 nations’.³¹ In Europe, too, the danger of the knock-out blow was being used to justify fascism: J. M. Spaight summarised the ideas of F. A. Fischer von Poturzyn, spokesman for the German Junkers aeroplane company, who believed that ‘the formation of authoritarian types of States [...] was the historical outcome of the development of aviation’. Spaight professed himself unconvinced by von Poturzyn’s argument, but his own endorsement of democracy was itself somewhat unconvincing.³² But mostly, the regimentation of everyday life through ARP was feared, or at least regretted. The Communist Party predicted that the ever-more comprehensive ARP programmes in which air raid wardens would monitor compliance with government regulations, controlled by ‘officers of a different social class and outlook from the people’ who would be ‘politically contemptuous of democracy’. Instead they proposed that ‘a high degree of popular initiative and cooperation will be needed’, contrasting ‘the solidarity of trade unionism’ with the ‘mechanical discipline of the parade ground’.³³ In 1939, Ajax wrote

³⁰Griffin, *Glass Houses and Modern War*, 28.

³¹Fuller, *Towards Armageddon*, 239. The reference is to categories used by the Army in the First World War to assess the medical fitness of potential recruits, as well as to a famous 1918 speech by Lloyd George where he proclaimed that ‘you cannot maintain an A-1 Empire with a C-3 population’; quoted in J. M. Winter, ‘Military fitness and civilian health in Britain during the First World War’, *Journal of Contemporary History* 15 (1980), 212.

³²Spaight, *Air Power in the Next War*, 133.

³³‘A.R.P. for Londoners’, London District Committee, Communist Party of Great Britain (n.d. [1938?]), 11. Communist support for democratic ARP institutions was largely rhetorical, if the OSO-Aviakhim in the Soviet Union is any guide: see Palmer,

with respect to ARP that ‘Britain is going to pay heavily in cash and in freedom for one more set of government chains stamped with the royal arms on one side and the Union Jack on the other’.³⁴ The UDC accused the government of using ARP to rouse ‘enough fear among people to persuade them to acquiesce in an armaments race’ and, ultimately, in the same ‘suppression of liberty that was effected in the [last] war’ by DORA, only this time in peacetime and permanently.³⁵ Not surprisingly, resistance was forecast. J. B. S. Haldane thought it possible that ARP ‘will be used as an organization for bullying the people in various ways’, possibly leading to murderous retribution after air raids as he alleged had happened in Spain.³⁶ And John Langdon-Davies wondered whether ‘democracy will have to save itself from its own Government’ once the war was over and the need for ARP had passed. But he still accepted that the risk was worth taking, in light of what he had seen of air raids on Barcelona.³⁷

Since Britain was a democracy, it was widely assumed that it would not initiate a war in Europe and would probably instead find itself the target of a sudden aerial attack on a large scale.³⁸ This could have serious consequences under the knock-out blow paradigm, which emphasised the importance of the potentially crippling initial offensive. It was for this reason that Sir Malcolm Campbell proposed a comprehensive government ARP programme in order to help absorb the initial attack. But he refused to advocate any form of dictatorship, despite its undoubted advantages in aerial warfare, and this was undoubtedly the consensus view.³⁹ G. T. Garratt, a journalist and unsuccessful Labour candidate for Parliament, took a socialist approach. He foresaw the need for what was, in effect, a redistribution of wealth, from the landed to the landless, from the unbombed to the bombed. The crucial need would be to restore unity to a class-ridden society:

Dictatorship of the Air, 115-22.

³⁴Ajax, *Air Strategy for Britons*, 129.

³⁵*Poison Gas*, 60.

³⁶Haldane, *A.R.P.*, 129.

³⁷Langdon-Davies, *Air Raid*, 140.

³⁸See p. 151.

³⁹Campbell, *The Peril from the Air*, 50.

This will be difficult immediately after a bombardment, and for this reason it is essential to get refugees, who might otherwise create political disturbances, comfortably bedded down where they can be kept informed of developments, and know that their future will be looked after properly.

Garratt implied that the rights of property owners would therefore need to be set aside in the interests of class unity.⁴⁰ Further to the right, Sir Arthur Salter, an independent (and later Conservative) MP, merely advocated reforming the machinery of government in order to enable the country to mobilise more quickly for war, a proposal in the tradition of the agitation for a defence ministry in the early 1920s and again in the mid- to late 1930s.⁴¹ But little was done. Even ARP preparations themselves were relegated to the status of a mere department within the Home Office; only on the outbreak of war was a Ministry of Home Security brought into being, as had been proposed a year earlier by both Garratt and Griffin.⁴²

At a minimum, even a successful defence against the bomber meant enduring pain and losing freedoms, as Spaight conceded: ‘democracy must be ready for sacrifices which, endured voluntarily, will be as surely necessary for victory as those which are exacted under a dictatorship by the iron hand’.⁴³ It was not until the Blitz itself that democracy was judged to have some advantages over dictatorships in withstanding bombing: according to Bernard Davy, it promoted initiative and safeguarded continuity in government.⁴⁴ Davy did not question the extent to which wartime Britain was actually

⁴⁰Charlton et al., *The Air Defence of Britain*, 142; see also Haldane, *A.R.P.*, 64. Conversely, Langdon-Davies believed that ingrained class divisions would be ‘eliminated by the force of high explosive’, at least to some degree: Langdon-Davies, *Air Raid*, 77.

⁴¹Arthur Salter, *Security: Can We Retrieve It?* (London: Macmillan and Co., 1939), 380-3. On the failed interwar campaigns for a Ministry of Defence, see G. A. H. Gordon, *British Seapower and Procurement between the Wars: A Reappraisal of Rearmament* (Basingstoke and London: Macmillan Press, 1988), 38-45, 149-50; John Robert Ferris, *Men, Money and Diplomacy: The Evolution of British Strategic Foreign Policy, 1919-26* (Ithaca: Cornell University Press, 1989), 8-10.

⁴²Charlton et al., *The Air Defence of Britain*, 142-3; Griffin, *Glass Houses and Modern War*, 44. See O’Brien, *Civil Defence*, 300.

⁴³Spaight, *Air Power in the Next War*, 134.

⁴⁴M. J. Bernard Davy, *Air Power and Civilization* (London: George Allen & Unwin, 1941), 151.

democratic, with general elections suspended for the duration, the introduction of wide-ranging emergency powers legislation in May 1940 and the internment of enemy aliens and political undesirables.⁴⁵ He may have been unaware of the unelected regional commissioners who had been given wide powers to maintain law and order in their areas in the event of a successful knock-out blow against London.⁴⁶ But once it became clear, by the middle of 1941, that Britain and its polity would survive the bomber, democratic freedoms could return to their former status as undoubted virtues, even in the aerial age.

Dispersal and evacuation

An obvious way to minimise the danger of bombing was to flee: to evacuate the cities, as far as was possible, of vulnerable civilians or of important targets such as government ministries or armaments factories. The First World War had shown, particularly in its opening phases, that the orderly, organised movement of hundreds of thousands of people at a time was perfectly feasible, given the necessary transportation and administrative apparatus.⁴⁷ Therefore it now seemed possible to think about evacuating as many civilians as possible before the outbreak of war, as a way of drawing the sting of an aerial attack against civilian morale. Fundamentally, this was the same strategy as dispersing targets across a city, rather than concentrating them in a small number of locations: in particular, encouraging civilians to remain in their own homes during raids instead of moving to larger, communal shelters. Dispersal was an idea formulated by the ARP Department of the Home Office, but largely ignored by airpower writers.⁴⁸ The idea in either case was to alter the city itself so as to decrease the density of targets, and so decrease

⁴⁵See Malcolm Smith, *Britain and 1940: History, Myth and Popular Memory* (London and New York: Routledge, 2000), 60-2.

⁴⁶See O'Brien, *Civil Defence*, 176-7. On the other hand, it has been argued that the need to maximise production during air raids led to an unprecedented experiment in industrial democracy: see p. 136.

⁴⁷See Kern, *The Culture of Time and Space*, 269-72.

⁴⁸The link between the two concepts was recognised by Salter, for example, who called evacuation 'organised dispersal': Salter, *Security*, 249.

the damage that could be done by any one bomb.⁴⁹

At first, however, the evacuation of people was usually not contemplated, merely that of the government or industry. In 1914, J. M. Spaight suggested that in the future ‘all barracks and garrisons, and all stores and factories, public and private, of war material and supplies, might be removed’ from cities. However, the point of this was not to minimise damage but to remove legitimate military targets from a city and thus, in Spaight’s interpretation of the laws of war, make it illegal to bomb it at all.⁵⁰ Even earlier, in 1909, T. G. Tulloch considered the possibility of running the country from a remote town after the aerial destruction of London, but concluded that any potential capital would still be in range of enemy aircraft.⁵¹ In *Aircraft in Warfare*, written before the war, but not published until it had begun, F. W. Lanchester advised that due to the danger of surprise attack the administrative functions of London needed to be removed from the city, even in peacetime.⁵² That ideas along these lines were so widespread so early suggests that they were largely a response to the then-prevailing nerve centre theory of Montagu and others: since the capital was the single most important nerve centre, it must be moved out of range of the enemy, even at huge cost.⁵³ Later writers continued this theme: J. M. Kenworthy suggested Glasgow or Belfast as the alternative seat of government; Eric Linklater, first Blackpool, then Edinburgh.⁵⁴ The central government did actually contemplate evacuation, though only as a wartime measure to be taken if necessitated by extremely heavy bombing. Early in 1940, however, C. C. Turner believed that enough

⁴⁹J. B. S. Haldane pointed out that, mathematically speaking, expected damage did not depend upon the distribution of targets within a bombing area, and so, from that point of view, dispersal made no sense: J. B. S. Haldane, ‘Mathematics of air raid protection’, *Nature* 142 (29 October 1938), 791-2. Elsewhere he suggested that dispersal ‘merely ensures that bombs will kill people in a fairly even manner’: Haldane, *A.R.P.*, 146. As O’Brien notes, however, ARP planners were also concerned the possibility of having to handle very large numbers of casualties in a single incident, and the strain this would place on rescue and welfare services: O’Brien, *Civil Defence*, 190.

⁵⁰J. M. Spaight, *Aircraft in War* (London: Macmillan and Co., 1914), 23.

⁵¹Tulloch, ‘The aërial peril’, 807.

⁵²Lanchester, *Aircraft in Warfare*, 194.

⁵³See p. 45.

⁵⁴Kenworthy, *Will Civilisation Crash?*, 257; Eric Linklater, *The Impregnable Women* (London: Jonathan Cape, 1938), 56-7, 109.

of the government had been removed from London to both make the city a less attractive target for the Luftwaffe, and to enable the country to be governed from remote areas if necessary. Indeed, he argued that this precaution had helped to prevent the knock-out blow from taking place in September 1939 as expected:

The work of government, in the event of London becoming virtually untenable, would continue, and the worst effects of a blow at the nerve centre of the nation were neutralised in advance. Naturally the enemy would at least consider the advisability of turning his attention to other objectives.⁵⁵

In fact, the government's Yellow Move plan for the evacuation of inessential civil servants removed only 30000 from London by June 1940, about half the total number; Black Move, the complete reconstitution of government in the west of the country, was never carried out, and was soon formally abandoned even as a contingency plan.⁵⁶

It was not until the 1930s that the removal from cities of surplus population, particularly children and the elderly – ‘useless mouths’, in the unfortunate official terminology of the day – became a common element in discussions of the knock-out blow.⁵⁷ A typical example was Major-General Henry Rowan-Robinson's *Imperial Defence*, which noted that air raids on towns just behind the frontlines during the First World War had little effect on morale because most of their inhabitants had already been evacuated while those who remained were too busy to worry about danger. Thus, ‘London and Birmingham, when their non-effectives have been evacuated and their effectives are hard at work, will cease to be vulnerable’.⁵⁸ He recommended that a selection of civil servants be evacuated first, to ensure that government could carry on its work should London be lost. Slightly lower in priority, ‘the slum districts around such likely targets as the Docks would be evacuated of all children under fifteen years of age, of the aged and infirm, and of such

⁵⁵Turner, *How the Air Force Defends Us*, 68.

⁵⁶See O'Brien, *Civil Defence*, 324-8, 362-3.

⁵⁷See *ibid.*, 151.

⁵⁸Rowan-Robinson, *Imperial Defence*, 138.

women as would not be required as factory workers, cooks, &c'.⁵⁹ He noted the critical problem of timing: 'Too early a decision will cause unnecessary alarm and dislocation. Yet the delay of an hour might result in thousands of avertible casualties'.⁶⁰

Such responses to the coming of the aeroplane may have been a consequence of the coming of the motor car. The First World War had apparently demonstrated a tendency of threatened populations to temporarily leave their urban habitats for the relative safety of the countryside, a phenomenon known as trekking, while the wealthy were rumoured to have sought out the safety of seaside resort towns.⁶¹ But so long as such population movements were made on foot or by train, they were necessarily limited in scale, as Tulloch, one of the few writers before 1914 to consider a (spontaneous) evacuation after air attack, noted: 'It is difficult enough even now to get away from London during a holiday time when there are crowds at a station; but try to imagine London ablaze and everyone trying to escape!'⁶² But during the 1920s, the cost of car ownership fell, bringing it within reach of middle-class (but not working-class) families: 1.5 million motor vehicles were registered in Britain in 1931, a figure which doubled by 1939, with two-thirds privately owned.⁶³ Such rapid growth in turn placed great strain on urban road networks designed for an era of slower modes of travel. It also raised the prospect of a mass exodus by road to the countryside upon the outbreak of war, a scene often likened to the chaos of a bank holiday or a Derby Day traffic jam, but now a matter of life or death rather than irritation, and with the possible addition of strafing aircraft and bombed roads.⁶⁴ Of course, 'only those wealthy enough to possess cars will, even under the most favourable conditions, be able to get away', as the UDC pointed out in 1934.⁶⁵ Lending credence to these fears was the spontaneous evacuation during the Sudeten

⁵⁹Rowan-Robinson, *Imperial Defence*, 256.

⁶⁰Ibid., 257.

⁶¹See pp. 62 and 63.

⁶²Tulloch, 'The aerial peril', 807.

⁶³See John Stevenson, *British Society 1914-45* (London: Allen Lane, 1984), 130.

⁶⁴See, e.g., Langdon-Davies, *A Short History of the Future*, 97-8; Charlton et al., *The Air Defence of Britain*, 157.

⁶⁵*Poison Gas*, 58.

crisis in September 1938 of some 150,000 people from London to the relative safety of the west.⁶⁶

Perhaps surprisingly, there is little evidence of concern in the urban planning community about building a road network better able to handle a massive surge of traffic in wartime. For example, the highly influential *Road Traffic and its Control*, published in 1938 by Alker Tripp, an Assistant Commissioner of the Metropolitan Police, paid no attention to the matter; nor did the main professional forum, the *Town Planning Journal*.⁶⁷ J. B. S. Haldane even blamed members of the Royal Automobile Club (RAC) and the Automobile Association for allowing the diversion of taxes on motor vehicles away from road-building, claiming that they:

were too 'patriotic,' i.e. too conservative, to protest effectively against a measure which has made their country a far better target for air attack than would be the case if it had the road system which Mr. Lloyd George intended when he started the Road Fund [in 1909].⁶⁸

An important exception to this lack of interest was the engineer Mervyn O'Gorman, head of the Royal Aircraft Factory at Farnborough until 1916 and more recently vice-president of the RAC. In 1934 he wrote an article about the problem posed by the evacuation of London which, due to its ill-planned streets, would create 'a mental atmosphere as unreasoning as claustrophobia – an anxiety tinged with terror' among people aware that they cannot escape the city because of the congestion as everyone tries to flee. O'Gorman's preferred solution was the creation of 'three concentric arterial ring-roads', which would incidentally improve traffic flow and reduce road fatalities in peacetime.⁶⁹ Less detailed proposals also appeared in the literature devoted to the knock-out blow: to John Langdon-Davies, for example, it was clear that 'the problem is not to teach the city to wait in safety while the raiders

⁶⁶See Titmuss, *Problems of Social Policy*, 31.

⁶⁷H. Alker Tripp, *Road Traffic and its Control* (London: Edward Arnold & Co., 1938).

⁶⁸Haldane, *A.R.P.*, 193.

⁶⁹Mervyn O'Gorman, 'Air defences and road transport', *Fortnightly Review* 136 (December 1934), 731, 734.

roll by but to devise a city that can still function in spite of raiders' by moving traffic underground as well as evacuating non-workers.⁷⁰

Conversely, in 1937 J. F. C. Fuller proposed walling off sections of cities into what he called 'panic-proof areas', to prevent those within from fleeing after air raids and infecting other sectors with their panic.⁷¹ Since he had earlier quoted Charlton at length on the particular susceptibility to panic of the Jewish population of the East End during the First World War, it is clear that Fuller's 'panic-proof areas' were largely intended to segregate London's congested slums from its leafier areas: a ghetto for the air age.⁷² The poor would anyway be forced to remain in their slums, since they lacked cars or other forms of transportation and the railways would largely be turned over to military use or destroyed in the first air raids. This would only add to their desperation and revolutionary mood. 'Those who are not so fortunate as to have the means of escape will be filled with a not unjustified resentment', suggested Haldane. 'They will furnish the raw material for panic and rioting which the Government rightly wish [sic] to avoid'.⁷³ G. T. Garratt agreed:

The danger of political trouble would be increased a hundred-fold if it was found by the people in the East End that the evacuation of their children, either before or after the first raid, was held up by a mass flight of the West End and suburbia along the only available lines of escape.⁷⁴

The 'Blitz spirit' of Cockney London was not anticipated by these writers, one fascist and three socialist.

The slums themselves were a major part of the problem, for two reasons: firstly, because they were densely crowded, highly attractive targets for an enemy air force; and secondly, because their buildings were poorly built, highly unsuitable shelters during air raids. Thus, as Jonathan Griffin noted

⁷⁰Langdon-Davies, *Air Raid*, 78. See also, e.g., Griffin, *Glass Houses and Modern War*, 155.

⁷¹Fuller, *Towards Armageddon*, 175-6.

⁷²Ibid., 168-9; see also Charlton, *War Over England*, 13; p. 62.

⁷³Haldane, *A.R.P.*, 80.

⁷⁴Charlton et al., *The Air Defence of Britain*, 157.

in 1938, ‘the poor will have to pay for the crime of being poor the penalty of death by bombs’.⁷⁵ Garratt considered slum clearances to be a form of evacuation since, in effect, they dispersed their inhabitants over a wider area. But they had been neglected: ‘If we had trebled our slum clearances since the war, and hurried on the building of large steel-frame workmen’s blocks of flats, we should present a much less vulnerable appearance to Herr Hitler’. He believed that certain ‘people of the comfortable classes’ hoped that aerial warfare would ‘rid England of many whose outlook and politics may be irksome to them’, and that it was they who had blocked slum clearance programmes.⁷⁶ Garratt’s concerns – if not his paranoia – derived from a tradition of left-wing concern about the slums, which was only exacerbated by the lingering aftereffects of the Slump.⁷⁷ As early as the 1880s, reformers had argued that better housing for the poor would relieve or resolve many social problems.⁷⁸ But so fixated on the evils of irresponsible landlords and derelict local authorities were those who followed that the prospective improvement in living conditions brought about by the arrival of mass transit and the consequent suburbanisation was missed.⁷⁹ This would have led in time to lower density cities, less vulnerable to bombing. Airpower writers instead predicted that the process would be the other way around. Charlton imagined a back-to-the-land movement developing in the wake of a successful knock-out blow, putting an end to the ‘ant-like slum-life’ so peculiar to the modern city.⁸⁰ Similarly, Bernard Davy, writing in 1941, speculated that

⁷⁵Griffin, *Glass Houses and Modern War*, 130.

⁷⁶Charlton et al., *The Air Defence of Britain*, 147-8.

⁷⁷See, e.g., George Orwell, *The Road to Wigan Pier* (London: Victor Gollancz Ltd, 1937), 51-8.

⁷⁸See Peter Hall, *Cities of Tomorrow: An Intellectual History of Urban Planning and Design in the Twentieth Century*, 2nd edition (Oxford and Cambridge: Blackwell, 1996), 30-1; John Benson, *The Working Class in Britain 1850-1939* (London and New York: I. B. Tauris, 2003), 84-8.

⁷⁹See Hall, *Cities of Tomorrow*, 49.

⁸⁰Charlton, *War Over England*, 245. On the pastoralist, antiurbanist ‘deep England’ impulse, see Martin J. Wiener, *English Culture and the Decline of the Industrial Spirit, 1850-1980*, 2nd edition (Cambridge: Cambridge University Press, 2004), chapter 4; but see also Peter Mandler, ‘Against “Englishness”: English culture and the limits of rural nostalgia, 1850-1940’, *Transactions of the Royal Historical Society* 7 (1997), 162-3; Edgerton, *Warfare State*, 301.

future historians would see the children's evacuation as 'the most important stage in that evolution of society which the conflict will assuredly hasten', since by returning London to its population level of the 19th century it had demonstrated that living so densely packed together was not a necessary condition of urban life:

The opportunity now presents itself to convert this involuntary thinning out into a state-planned dispersal of population and industry, so that all may live life more fully, and at the same time be safeguarded against the risks of attack in the advanced air age which lies before us.⁸¹

As it turned out, heavy bombing during the Blitz itself did much of the work of – quite literally – preparing the ground for postwar reconstruction, as C. G. Grey, among others, recognised at the time.⁸² But it did not reverse the shift towards increasing urbanisation.

Not everyone concerned about the next war thought that evacuation was a good idea. A substantial minority of writers believed that evacuation would be disruptive, chaotic, and ultimately, perhaps, disastrous. In 1937 Sir Malcolm Campbell called evacuation a 'soothing syrup', doled out to a fearful populace by a government which did not really believe that a knock-out blow would ever come.⁸³ Evacuating the whole of Greater London was 'beyond all possibility of accomplishment', he argued, and the vast majority of people would have to fend for themselves. The roads would become blocked and then attacked by the enemy, leading to 'a slaughter of the innocents such as the world has never witnessed'. Those few who made it to the countryside would find no food, shelter or medical aid, since the government apparently had made no plans for the well-being of refugees.⁸⁴ The result would be anarchy, the 'downfall of civilization [...] We should go back at least a thou-

⁸¹Davy, *Air Power and Civilization*, 154.

⁸²C. G. Grey, *Bombers* (London: Faber and Faber, 1941), 180-1. See also Gordon E. Cherry, 'Reconstruction: its place in planning history', in: Jeffrey M. Diefendorf, editor, *Rebuilding Europe's Bombed Cities* (Basingstoke and London: Macmillan, 1990), 209-20.

⁸³Campbell, *The Peril from the Air*, 59.

⁸⁴*Ibid.*, 62.

sand years'.⁸⁵ In other words, an attempted evacuation would simply hasten Britain's collapse. Thankfully, although evacuation was an enormously complicated problem, this did not happen.⁸⁶

Protection

The final way to adapt to the threat of air raids was to defend the civil population directly, by providing some form of protection from bombs, gas and fire. In practice, this generally meant air raid shelters, either on the surface or buried deep underground, or, where poison gas was a concern, the provision of gas masks and refuge rooms. It also included the provision of ancillary services, such as firefighting, medical aid and assistance for people made homeless by bombing. Collectively, all of these forms of protection were known as air raid precautions (ARP), a phrase which began during the war to be subsumed, along with evacuation and dispersal, into the broader category of civil defence.⁸⁷ ARP was presumed to be a matter for large urban centres and not the countryside: as Montgomery Hyde and Falkiner Nuttall wrote in 1937, 'The capital cities constitute the popular nerve-centres where the danger is greatest, and it is there that measures of passive defence require to be most fully developed'.⁸⁸

In *The Peril of the Air*, Sir Malcolm Campbell explained the strategic necessity for ARP, aside from purely humanitarian concerns. Not to protect the civilian population in any way would lead to massacre and panic during air raids, the precise purpose of a knock-out blow. But if some form of reasonably effective protection were provided, then:

instead of wild panic resulting there would arise a feeling of such deep exasperation and resentment that the people would stand solidly behind their Government, prepared to go to the uttermost lengths of sacrifice to avert defeat and inflict condign punishment

⁸⁵Campbell, *The Peril from the Air*, 63-4.

⁸⁶See Titmuss, *Problems of Social Policy*, chapter 10.

⁸⁷See O'Brien, *Civil Defence*, 301.

⁸⁸Hyde and Nuttall, *Air Defence and the Civil Population*, 53.

on the aggressor.⁸⁹

In other words, ARP was essential to sustain morale and to prevent a knock-out blow, an argument employed widely in the late 1930s by advocates of protection.⁹⁰ Furthermore, shelters and gas masks could protect the workers while they built the weapons needed to sustain Britain's war effort and strike back at the enemy.⁹¹ These were by far the most common forms of ARP under discussion in the 1930s. Other aspects of protection which assumed great importance in practice, such as slit trenches in the Sudeten crisis or strengthened fire services from the late 1930s, received much less attention from airpower writers, either because they guarded against a specific threat which seemed remote or because they seemed insufficiently comprehensive.⁹²

Gas was an early concern: there appeared to be no reason why its use on the battlefields of the First World War could not be replicated over London. Gas masks were the obvious solution for the civilian just as they had been for the soldier. In 1923, E. C. P. Monson and Ellis Marsland suggested that all houses would have to be equipped with them, one for each occupant.⁹³ J. B. S. Haldane favoured a similar idea, at least for 'the population of London and other large towns', as did Labour MP J. M. Kenworthy.⁹⁴ But in the 1920s, the government was apparently uninterested in such measures, which Haldane blamed on the professional jealousy of soldiers who would have less importance in a war fought primarily on the home front.⁹⁵ To overcome the government's failure to act, in 1934 the engineer Francis Pickett therefore proposed 'the creation of a great voluntary organisation' to which civilians

⁸⁹Campbell, *The Peril from the Air*, 45.

⁹⁰See, e.g., Charlton et al., *The Air Defence of Britain*, 114; Salter, *Security*, 177-8.

⁹¹See, e.g., Charlton et al., *The Air Defence of Britain*, 113-4.

⁹²But see, e.g., C. W. Glover, *Civil Defence: A Practical Manual Presenting with Working Drawings the Methods Required for Adequate Protection Against Aerial Attack* (London: Chapman & Hall, 1938), 163; Ajax, *Air Strategy for Britons*, 133. The trenches dug during the Sudeten crisis were criticised by some architects for their poor placement: many soon started filling with water. See Tecton, *Planned A.R.P.: Based on the Investigation of Structural Protection Against Air Attack in the Metropolitan Borough of Finsbury* (London: Architectural Press, 1939), 4-5.

⁹³Monson and Marsland, *Air Raid Damage in London*, 14.

⁹⁴Haldane, *Callinicus*, 36; Kenworthy, *Will Civilisation Crash?*, 262.

⁹⁵Haldane, *Callinicus*, 36-7.

could subscribe in return for the supply of gas masks at cost price.⁹⁶ Some writers argued that it would be impossible to live and, just as importantly, work for extended periods of time while wearing gas masks: according to Beverley Nichols, ‘You cannot eat or drink or speak when you are wearing a gas-mask. You can do nothing but sit tight, or lumber clumsily about’.⁹⁷ But throughout most of the 1930s, the general consensus was that gas masks were a necessary evil: ‘an essential feature of modern life in Fascist-dominated Europe’, as G. T. Garratt wrote in 1938.⁹⁸

From 1935, when the existence of the Home Office’s ARP Department was made public, debate tended to focus on official government schemes and advice, so far as these were known.⁹⁹ The most trenchant criticism came from left-wing scientists, especially the Cambridge Scientists’ Anti-War Group. This was formed in 1932 and included among its members J. D. Bernal and Joseph Needham.¹⁰⁰ The group carried out tests on gas refuge rooms of the type recommended by the Home Office as the first line of defence against gas. It was found that these were not air-tight and would prolong the life of their occupants by only two hours. Moreover, the Home Office advice was based on typical middle-class homes; but one million of Britain’s poor did not have a spare room to set aside as a gas refuge, while a further seven million could do so only by overcrowding into their remaining rooms.¹⁰¹ However, Haldane, another left-wing scientist, criticised the Cambridge group, not for its methods but for its assumptions about the density and dispersal of gas in a typical urban environment, which he felt were invalid.¹⁰² C. H. Foulkes, who had commanded the Army’s gas units in the First World War, argued

⁹⁶Pickett’s suggestion might have been connected with the Chemical Warfare Defence League which was advertised in the back of his book, along with a price list for various items related to gas protection: Pickett, *Don’t Be Afraid of Poison Gas*, 39, 41.

⁹⁷Nichols, *Cry Havoc!*, 62.

⁹⁸Charlton et al., *The Air Defence of Britain*, 128.

⁹⁹On the origins of the ARP Department and the first ARP circular, see O’Brien, *Civil Defence*, 55-60.

¹⁰⁰See Gary Werskey, *The Visible College* (London: Allen Lane, 1978), 223-34.

¹⁰¹Cambridge Scientists’ Anti-War Group, *The Protection of the Public from Aerial Attack: Being a Critical Examination of the Recommendations put Forward by the Air Raid Precautions Department of the Home Office* (London: Victor Gollancz Ltd, 1937), 70-1.

¹⁰²Haldane, *A.R.P.*, 94-7.

that gas-proofing dugouts had proved perfectly feasible on the Western Front, and that even imperfect protection was better than none.¹⁰³

Haldane was himself fairly sanguine about the prospect of gas attacks: in 1925 he had infamously argued that chemical warfare was relatively humane, based on the low proportion of fatalities it caused, and that high explosive bombs were a much greater danger to civilians.¹⁰⁴ His opinion had not altered greatly by 1938.¹⁰⁵ By this time, many writers had also come to the conclusion that gas was either not much of a threat or was not likely to be used, and that the government's heavy emphasis on gas protection was therefore misplaced. John Langdon-Davies pointed out that gas had not been used in Spain, despite the general lack of gas masks in that country; Ajax thought that the threat of reprisals made gas attack on cities unlikely.¹⁰⁶ On the other hand, others believed that the march of progress would bring new gases, against which existing gas masks would prove ineffective. This was a popular device of novelists in particular, but was dismissed by most experts as a fanciful notion.¹⁰⁷

The other major form of protection was the air raid shelter. As early as 1914, Sir George Aston thought that civilians could find shelter in 'specially constructed bomb-proof shelters', though without specifying whether the provision of these would be a public or a private responsibility.¹⁰⁸ Claude Grahame-White and Harry Harper suggested, early in 1917, that in future all government functions would need to move underground, along with important factories and communication networks. In addition, the inhabitants of densely-occupied cities would need to be provided with underground shelters.¹⁰⁹ Such an extensive and expensive undertaking would have to be carried out by the government. But Monson and Marsland believed that the

¹⁰³C. H. Foulkes, 'Air raid precautions', *Nature* 139 (10 April 1937), 606-8. See also J. D. Bernal et al., 'Air raid precautions', *Nature* 139 (1 May 1937), 760-1; C. H. Foulkes, *Nature* 139 (1 May 1937), 761.

¹⁰⁴Haldane, *Callinicus*, 52-8.

¹⁰⁵Haldane, *A.R.P.*, 18-25.

¹⁰⁶Langdon-Davies, *Air Raid*, 43-4; Ajax, *Air Strategy for Britons*, 130.

¹⁰⁷Contrast, e.g., McIlraith and Connolly, *Invasion From the Air*, 16 and Kendall, *Breathe Freely!*, 74-7.

¹⁰⁸Aston, *Sea, Land, and Air Strategy*, 237.

¹⁰⁹Grahame-White and Harper, *Air Power*, 39-40.

‘provision of permanent air raid shelters devoted to no other use is perhaps too much to expect’. Instead, all new buildings should be designed and built with their possible use as shelters in mind.¹¹⁰

Monson and Marsland were correct in the short term: no government was prepared to countenance a comprehensive and expensive shelter programme while Europe was peaceful. In Pickett’s opinion:

It would require active leadership on the part of each municipality or the Government to provide such defences in advance of actual war, but it would be an act of statesmanship to have plans and locations ready for such defence should an emergency arise.¹¹¹

In 1935, the year after Pickett wrote this, the government did begin to make such plans, and some boroughs made a start on constructing shelters. Interest from airpower writers in shelter programmes had also revived by the late 1930s, at least in part because of the example of Spain, where civilians trooped into cellars and underground stations when bombers approached. It was still not clear, however, who would pay for shelters, a problem intensified by the fact that it was the poor who were deemed most in danger and whose homes were least able to withstand bombing.¹¹² Slum areas were also relatively lacking in parks and other open areas, where public shelters or trenches could be constructed.¹¹³ In 1937 Campbell suggested a paternalist approach focusing on property owners, mixing voluntarism and compulsion. On the one hand, he urged that ‘the private citizen whose means will enable him to afford shelter to those less fortunately placed than himself’ had a duty to do so. On the other, the government should introduce legislation to compel the

¹¹⁰Monson and Marsland, *Air Raid Damage in London*, 14.

¹¹¹Pickett, *Don't Be Afraid of Poison Gas*, 32.

¹¹²Using government rules for financing, the Communist Party’s London branch estimated that Westminster, one of the wealthiest and least-densely populated regions of London, had more than 13 times the funds available for shelter programmes per capita than did Walthamstow, a working-class area – a clear echo of the Poplarism controversy of the 1920s. ‘A.R.P. for Londoners’, 15. On Poplarism, see John Shepherd, *George Lansbury: At the Heart of Old Labour* (Oxford: Oxford University Press, 2002), chapter 11.

¹¹³Charlton et al., *The Air Defence of Britain*, 135-6.

owners of all large buildings and housing estates to provide shelters for their occupants.¹¹⁴

In *A.R.P.*, Haldane methodically analysed the various forms of shelter which were possible:

1. Refuge rooms
2. Buildings with steel frames
3. Splinter-proof rooms
4. Cellars
5. Trenches
6. Dug-outs
7. Underground stations
8. Purpose-built tunnels
9. Other underground shelters
10. Conical towers

Of these, he concluded that cellars, trenches and underground stations provided a valuable amount of protection; trenches were particularly useful as a short-term solution in time of crisis. But best of all, in Haldane's opinion, were purpose-built tunnels, more commonly known as deep shelters.¹¹⁵ The actual depth required would be determined by experiments on the penetrative abilities of bombs, but Haldane thought they would need to be at least 60 feet below the surface, brick-lined tunnels 7 feet wide. London alone would need about 1000 miles of tunnel to accommodate 5.5 million of its people, and the cost of the whole scheme might come to £400 million over two years, a large but not incredible figure.¹¹⁶ Haldane's scheme, which included

¹¹⁴Campbell led by example by building a shelter on his estate to accommodate both his family and his staff. Campbell, *The Peril from the Air*, 52, 53.

¹¹⁵Haldane, *A.R.P.*, chapter 6.

¹¹⁶*Ibid.*, 210-2.

the evacuation of children and people from areas unsuitable for tunnelling, was shot through with socialist rhetoric: for example, he believed that the concrete industry was ‘in the grip of monopoly capitalism’, which raised the costs of a deep shelter programme.¹¹⁷ More importantly, he believed that the National Government, dominated by the Conservatives, was too beholden to the status quo to attend to the interests of the people as a whole, as distinct from the ruling class.¹¹⁸ Therefore a Labour or Popular Front government was vital, for ‘If we in Britain dig shelters, the other nations will be bound to follow suit. And if this occurs the bombing aeroplane will become an ineffective weapon for the terrorization of civilians’.¹¹⁹ This virtuous version of an arms race would refute Baldwin’s dictum and end the fear of the knock-out blow.

Deep shelters became a favoured cause of the left: not only the political left, but also left-wing professional organisations and trade unions – which may have had vested interests in large-scale construction programmes – such as the Association of Architects, Surveyors and Technical Assistants (AASTA), the Amalgamated Engineering Union and the Lambeth Trades Council.¹²⁰ It seemed that nothing less radical – or less collective – could protect the working classes, given their poorly-built homes. Garratt declared that ‘The only safe place for a human being who is inside a dangerous zone full of second-rate buildings is to be well underground’.¹²¹ The cost would depend on ‘how far private rights would have to be respected and compensated’, but would doubtless be higher in conservative Britain than in socialist Barcelona.¹²² During the debate on the Civil Defence Act in April 1939, Labour and Liberal MPs pressed the government to finance deep

¹¹⁷Haldane, *A.R.P.*, 212.

¹¹⁸Ibid., 243. See also J. B. S. Haldane, *How to be Safe from Air Raids* (London: Victor Gollancz, 1938), 47.

¹¹⁹Haldane, *A.R.P.*, 249.

¹²⁰See Robin Woolven, “‘Playing Hitler’s game’ from Fitzroy Road NW1: JBS Haldane, the St Pancras branch of the Communist Party, and deep-shelter agitation”, *Camden History Review* 23 (1999), 24. For the AASTA report, which was introduced by Haldane and endorsed by the London branch of the Communist Party, see ‘A.R.P.’, *Architects’ Journal* 88 (7 July 1938), 15-48; ‘A.R.P. for Londoners’, 8.

¹²¹Charlton et al., *The Air Defence of Britain*, 131.

¹²²Ibid., 132.

shelters in preference to the Anderson domestic shelter scheme.¹²³ Labour-dominated councils in London were also often favourably inclined towards deep shelter schemes. But only approved schemes would receive grants in aid from Whitehall. This ultimately frustrated local initiatives due to the Home Office's insistence on dispersal as its main policy, supplemented by only a limited public shelter programme to provide for civilians caught away from home during air raids.¹²⁴ Haldane was involved with one such proposal in 1938, for St Pancras; others were evolved for St Marylebone and Lambeth. None of these was approved.¹²⁵ The most ambitious and aggressive attempt to overcome Home Office objections was made by Finsbury, in central London, which commissioned a comprehensive deep shelter plan from the Tecton Group, a well-known group of modernist architects.¹²⁶ Tecton designed a dual-use deep shelter, which would hold cars in peacetime and up to 12300 people in wartime. Such large shelters were more cost-effective than smaller shelters by a factor of almost two.¹²⁷ Fifteen would be placed around Finsbury, enough to protect all of its population such that nobody would be further than a four-minute walk from the nearest shelter.¹²⁸ But despite favourable publicity, the Home Office rejected this plan in April 1939, arguing on the basis of the recent Hailey report that an enemy could disrupt production by forcing the population to take shelter.¹²⁹

Much of the government's opposition to deep shelters was a partisan reaction to the campaign waged in the late 1930s (and again after the start of the Blitz) by the Communist Party and, to a lesser extent, Labour.¹³⁰

¹²³See O'Brien, *Civil Defence*, 191.

¹²⁴See *ibid.*, 190.

¹²⁵See Woolven, 'Playing Hitler's game', 23-4; also O'Brien, *Civil Defence*, 190.

¹²⁶See Peter Jones, *Ove Arup: Masterbuilder of the Twentieth Century* (New Haven: Yale University Press, 2006), 66-7.

¹²⁷Tecton, *Planned A.R.P.*, 127.

¹²⁸*Ibid.*, 110-1.

¹²⁹See Joseph S. Meisel, 'Air raid shelter policy and its critics in Britain before the Second World War', *Twentieth Century British History* 5 (1994), 313-4. On the Hailey conference, see O'Brien, *Civil Defence*, 191-2.

¹³⁰See, e.g., 'A.R.P. for Londoners'. Little of a comprehensive nature has been written about the left's deep shelter campaign, but see Noreen Branson, *History of the Communist Party of Great Britain 1927-1941* (London: Lawrence and Wishart, 1985), 302-6; Angus Calder, *The People's War: Britain 1939-45* (London: Jonathan Cape, 1969), 183-

On the other hand, the right-wing *Daily Mail* supported deep shelters from January 1939, and left-wing writers could themselves dismiss deep shelters.¹³¹ For example, the pacifists Robert and Barbara Donington thought that the triple threat of high explosive, incendiary and gas bombs would turn any practical air raid shelter into a deathtrap: since, for example, high explosive bombs would knock down the tall ventilation shafts needed to supply air free from poison gas to the sheltering population. But this was ancillary to the main thrust of their argument that only collective security could save the civilian from war.¹³²

Opposition to deep shelters could also be due to a principled disagreement over the best way to defeat the bomber. In 1939, Salter, then an independent MP (and, after the war, a Conservative one), conceded that dual-use deep shelters might, over a long period of time, be constructed as part of an expansion of the London Underground. But, in the short term, deep shelters were a distraction ‘when the full national resources must be devoted to overcoming a danger that may mature soon and might be mortal’: that is to say, devoted to RAF expansion.¹³³ The novelist Shaw Desmond depicted deep shelters as death traps, the ‘tombs of countless thousands’; Jonathan Griffin ruled them out as too expensive – his estimate was £1.5 billion, equivalent in cost to the government’s projected rearmament costs for 1937-41 – to be used on a large scale.¹³⁴ Dispersal and evacuation remained official ARP policy until October 1940, when the Blitz led to a re-evaluation of the government’s opposition to deep shelters and the beginnings of a limited scheme.¹³⁵

7; Werskey, *The Visible College*, 231-3; Mackay, *Half the Battle*, 33-5; and O’Brien, *Civil Defence*, 190-2, 195, 198-9, 371-2.

¹³¹See ‘Questions for Sir John’, *Daily Mail*, 17 September 1940, 2.

¹³²Robert Donington and Barbara Donington, *The Citizen Faces War* (London: Victor Gollancz, 1936), 183-4.

¹³³Salter, *Security*, 254.

¹³⁴Shaw Desmond, *Chaos* (London: Hutchinson & Co., n.d. [1938]), 288; Griffin, *Glass Houses and Modern War*, 143.

¹³⁵See O’Brien, *Civil Defence*, 530-1.

Conclusion

Fascism or democracy, liberalism or state control, compulsion or voluntarism: ideas about how to protect British subjects against the knock-out blow clustered around these ideas, which in turn reflected some of the great political questions of the age.¹³⁶ But this was not a simple dichotomy between left and right. Rather, compulsion was favoured for the promotion of ideas held especially dear. Thus, conservative and fascist writers favoured the use of compulsion to enforce the discipline they believed necessary for civilians to withstand the psychological strain of bombing, while Labour and communist writers wanted the state to finance large-scale deep shelter schemes to protect the working classes. Class was the key. Working-class people were presumed to be especially vulnerable: their homes were poorly-built and densely-clustered, and they lacked the means to evacuate themselves to safer areas as the middle classes could. But while they were largely presented as passive – or worse, irrational – victims of bombing, the working class did not entirely lack agency. The left's campaign for deep shelters from 1938 was undertaken on their behalf. In 1940, with the Luftwaffe's offensive against Britain already underway, trade unions negotiated with employers and the government over an agreement to maintain production until bombers were actually overhead, a form of adaptation which Helen Jones calls 'an unheard-of degree of direct democracy'.¹³⁷ On the whole, however, the responses of airpower writers reflected middle-class concerns, such as the need for better roads. Their influence on policy is difficult to discern, but in any case was limited as the majority of their ideas were never implemented. When they were, as with evacuation, they had long been planned (in general, if not in detail) by the relevant government departments. The most important effect of the airpower writers was to publicise the possible ways in which society might be adapted to the knock-out blow, and to promote a public debate about the possible options.

The adaptive responses surveyed here sometimes intertwined. John

¹³⁶See Barker, *Political Ideas in Modern Britain*.

¹³⁷Jones, *British Civilians in the Front Line*, 51.

Langdon-Davies believed, based on his observations of civilians under fire in Barcelona, that having a job to do settled the mind and prevented panic.¹³⁸ But a job, in itself, was not sufficient: shelters were needed to protect the body as well. He saw shelters not as refuges where civilians passively waited for the all-clear, but miniature factories where workers continued to produce the weapons needed to defend their cities.¹³⁹ J. B. S. Haldane's tireless advocacy of a deep shelter system was linked to a call for political change, since he asserted that the Conservative-dominated National Government would never – indeed, could never – provide such thorough protection for the working class due to its inherent conservatism, the influence of fascist fellow-travellers, and the inherent contradictions of capitalism.¹⁴⁰ In general, while the responses to the threat of bombing varied according to ideological disposition, the nature of the threat itself – the knock-out blow – was widely agreed upon, irrespective of prior beliefs.

Adaptive responses only became widely discussed from the mid-1930s, after the Nazis came to power in Germany. This is partly because the changes required to implement them were far-reaching, expensive, or both, and could only be contemplated when extreme danger threatened. Some, like evacuation, were in any event virtually impossible to carry out in peacetime. But this does not explain the general neglect of some possible responses, such as deception or early warning, which could have been implemented with relatively little disruption. In 1940, for example, factories employed part- or full-time roof spotters ('Jim Crows') to warn of the approach of enemy bombers, thus enabling employees to continue working until danger was imminent.¹⁴¹ This form of early warning would have been easy enough to set up before the war. But the need for it was never imagined, for the knock-out blow would have been too swift and the war too short for anyone to worry about a few hours of lost production. Initially, too, it was gas that was feared most, which

¹³⁸Langdon-Davies, *Air Raid*, 88-9. This was also argued by psychologists after the Blitz: e.g., Vernon, 'Psychological effects of air-raids', 461. See also Jones, *British Civilians in the Front Line*, 149-50.

¹³⁹Langdon-Davies, *Air Raid*, 126-7.

¹⁴⁰Haldane, *A.R.P.*, chapter 9. No doubt as a socialist he was already favourably disposed to a left-wing government.

¹⁴¹See Jones, *British Civilians in the Front Line*, chapter 5.

was fortunately relatively cheap to defend against: hence the early emphasis on gas masks and gas refuges. The Spanish Civil War, a major conflict on Britain's doorstep where civilians were regular targets of bombers, strongly suggested that gas would not be used and that high explosive bombs and, perhaps to a lesser extent, incendiaries would be much more dangerous. The left's strong identification with the plight of Republican Spain helped foster a concern with the shelter systems so prevalent there; it is not coincidental that the deep shelter campaign only began in mid-1938, after the heavy bombing of Barcelona in March.

The Blitz altered the preferences of airpower writers once more, at least rhetorically: civilian and democratic virtues were privileged over military and autocratic ones for their value as adaptations to the knock-out blow, which was the opposite of the reality of wartime Britain.

Chapter 4

Resistance

Resistance to the knock-out blow could encompass two major types of response: air defence and the counter-offensive. Air defence refers to the interception of enemy bombers by fighter aircraft, preferably before they reached their targets. It can also include the C³I system used to direct them. Air defence was passive and limited, a purely defensive response. By contrast, the counter-offensive refers to the bombing of the enemy nation in an effort to force it to cease bombing Britain. In practice the counter-offensive was viewed as either retaliation or, ideally, deterrence. The only other response in the resistance category to receive substantial consideration from airpower writers was anti-aircraft (AA) defence, usually meaning guns but also including less conventional devices such as balloon barrages or even death rays. It was very rarely presented as the primary means of resistance against the knock-out blow, however: it was usually thought of as an adjunct to air defence.

The counter-offensive was far and away the most common of all responses to the knock-out blow, at least as far as the major airpower theorists – mostly former airmen themselves – were concerned. So great was the power of a knock-out blow believed to be that it was natural to assume that it could itself only be countered by, or deterred by the threat of, a powerful air attack.¹ This was all the more true if the widespread assumption of the

¹This corresponded to the government's own public position in the mid-1930s. See Wark, *The Ultimate Enemy*, 48.

ineffectiveness of air defence was shared.

Air defence

Although Tennyson had imagined ‘the nations’ airy navies grappling in the central blue’ as early as 1835, most writers tended to assume that the freedom of movement that came with being able to move through the sky was absolute, and that therefore air combat would only occur when both sides wished it. The First World War disproved this, at least temporarily. Both the Allies and the Central Powers developed fighter aircraft in order to suppress reconnaissance and bomber aircraft belonging to the opposing air force.²

As airships and bombers began to raid British cities, fighters were deployed to intercept them, though with only limited success at first. This prompted a debate about the best means of defence. Noel Pemberton-Billing, a former RNAS pilot who had participated in a famous air raid on the Zeppelin works at Friedrichshafen, proposed a comprehensive air defence scheme as part of his campaign for election to Parliament as an independent at the beginning of 1916.³ He thought that a city like London could be made ‘impregnable’ against air attack by the deployment of 150 stealthy, multi-engined aircraft equipped with machine-guns to patrol night and day, and an additional 150 fast-climbing day interceptors.⁴ Pemberton-Billing was also an aircraft designer, the founder of Supermarine; but the Night Hawk fighter he designed in fulfillment of his scheme was far too slow a climber to be effective against Zeppelins. The C³I scheme he devised showed more promise. It divided the country into a hundred air defence districts, each with its own array of sound detectors, AA guns, searchlights and fighter aircraft, with information filtered through and orders passed from a central headquarters.⁵ To some degree, this anticipated the structure of the London Air Defence Area (LADA), formed after the daylight Gotha raids on London in June and

²See Hallion, *Taking Flight*, 353-8.

³See Paris, *Winged Warfare*, 75-80.

⁴Pemberton-Billing, *Air War*, 22.

⁵*Ibid.*, 25-32.

July 1918.⁶ LADA's first commander was Major-General E. B. Ashmore, who recorded his own reflections on air defence in 1929. Ashmore, who was brought out of retirement after the war in order to reconstitute Britain's AA defences and set up the Royal Observer Corps, also regarded fighters as an essential counter to the threat of the bomber. For evidence he drew upon both his wartime experience at LADA and the results of postwar air defence exercises.⁷ He demanded that the proportion of home fighter to bomber squadrons be increased, and concluded his book in ominous fashion:

Whether the world is armed or disarmed, we are liable to air attack; that we are exceptionally vulnerable in [sic] air attack has been proved. If we maintain an efficient air defence, we may never be attacked; if we have no air defence ...

THE END.⁸

Here Ashmore tied the idea of air defence to deterrence, in the sense that by reducing Britain's vulnerability to a knock-out blow the temptation for an enemy to attack was reduced.

The concept of air superiority, or even better, air supremacy, played an important role in conceptions of air defence.⁹ Oliver Stewart, a former RFC fighter pilot and current air correspondent for the *Morning Post*, believed that 'Air supremacy, absolute and unchallenged, is the only possible safeguard for Britain'.¹⁰ If this had been achieved during the war then, among other things, 'even night bombing would have been checked'. Stewart was vague as to how air supremacy was to be achieved, but thought that it was mainly a matter of having 'the right machines and the right men'.¹¹

⁶See p. 270.

⁷Ashmore, *Air Defence*, 151-3.

⁸Ibid., 155.

⁹The idea was probably borrowed from the naval concept of the command of the sea, regarded by some strategists as the 'main object of naval warfare': Admiral Sir Cyprian Bridge; quoted in Geoffrey Till, 'Corbett and the emergence of a British school?', in: Geoffrey Till, editor, *The Development of British Naval Thinking: Essays in Memory of Bryan Ranft* (London and New York: Routledge, 2006), 79.

¹⁰Oliver Stewart, *The Strategy and Tactics of Air Fighting* (London: Longmans, Green and Co., 1925), 184.

¹¹Ibid., 185.

Squadron-Leader, a member of the Air Staff writing pseudonymously in 1927, was a relative sceptic of the knock-out blow.¹² He accepted that the bombing of civilian populations could break their will to fight, but only if air superiority was obtained first, and even then only if the military situation permitted the diversion of sufficient air forces to such a secondary objective.¹³ He dismissed the idea that aircraft could somehow leap over defence systems, noting that during the war bomber forces had suffered ‘appalling losses’ at the hands of fighter aircraft, which caused ‘a very serious drain on the resources of all belligerents’. And he expected that the future development of fighters would keep pace with that of bombers.¹⁴ One of Squadron-Leader’s targets in this passage was J. M. Spaight, a senior civil servant in the Air Ministry. His barbs may have had some effect, for the year after Squadron-Leader published his book Spaight described the fighter as ‘an Antidote to a Plague’, even if an imperfect one. Indeed, he went so far as to say that since cities were ‘in fact civilisation, at its best and worst, the Fighter is the safeguard of civilisation’.¹⁵

But for most of the 1920s and 1930s air defence was at a discount, a legacy – at least initially – of the startling lack of resistance to the daylight Gotha raids.¹⁶ It was in the middle of this period, in 1932, that Stanley Baldwin proclaimed that ‘the bomber will always get through’, a dogma accepted by many both inside and outside government and the RAF.¹⁷ It is easy to find examples of this kind of thinking. In 1927, Air-Vice Marshal H. R. M. Brooke-Popham declared that ‘Fighting in the air on a large scale only takes place by accident or by mutual consent’.¹⁸ Since Brooke-Popham was then commander of Britain’s fighter defences, advocates of the bomber understandably quoted him with glee: P. R. C. Groves was one, in his *Behind the Smoke Screen*, published in 1934.¹⁹ Groves further argued that the sky

¹²On Squadron-Leader, see Groves, *Behind the Smoke Screen*, 169.

¹³Squadron-Leader, *Basic Principles of Air Warfare*, 56-7.

¹⁴Ibid., 59, 60.

¹⁵Spaight, *Pseudo-Security*, 123.

¹⁶See p. 270.

¹⁷See p. 70.

¹⁸Brooke-Popham, ‘Air warfare’, 159.

¹⁹Groves, *Behind the Smoke Screen*, 163.

was so vast and bombers so fast that it would be foolish to depend on being able to intercept them in time. Adding to the potential difficulties for the defenders were weather, darkness and possible stratagems such as gliding attacks or sound decoys to confuse sound locators.²⁰ He demanded that the British people be told ‘the truth’:

They should be frankly informed that such local defences as we can afford to provide cannot in any circumstances whatsoever adequately protect even London, let alone the rest of the country, against aerial attack on the scale which is now possible [...]²¹

The following year, L. E. O. Charlton argued that self-defending formations of heavily-armed bombers would be more than a match for lightly-armed fighters, particularly since the latter lacked guns which could be independently aimed.²² He tended to agree with Douhet that ‘the energy absorbed in the production and maintenance of the fighter’ would be better spent in making more bombers.²³ Charlton repeated these arguments in a book published just after Munich, in which he also used the government’s own ‘agitation’ in favour of shelters and evacuation and the RAF’s obvious preference for bombers, as evidence for the official lack of faith in air defence.²⁴ Other writers added more fanciful reasons for expecting the continuing dominance of the bomber: J. M. Kenworthy, for example, predicted the development of silent aeroplanes, undetectable by conventional sound locators, as well as robotic aircraft which could not be deterred from dropping high explosive, gas or bacteria on London.²⁵

There was some support for fighter aircraft during the 1930s, but usually only for limited purposes. In 1934 Philip Noel Baker proposed that an international air force should be composed of fighters rather than bombers, because to destroy the cities of an aggressor ‘could only embitter the quarrel between his people and the outside world’. But in Noel Baker’s scenario, this

²⁰Groves, *Behind the Smoke Screen*, 164-8.

²¹Ibid., 177.

²²Charlton, *War from the Air*, 145-9.

²³Ibid., 150.

²⁴Charlton et al., *The Air Defence of Britain*, 30-2.

²⁵Kenworthy, *New Wars: New Weapons*, 115-6.

force would only come into being after universal disarmament, and so would only need to operate against civil aircraft converted into bombers. In other words, he accepted that fighters were no defence against high performance military aircraft specially designed as bombers.²⁶ Indeed, he also quoted Brooke-Popham to this effect.²⁷ Even those who saw a role for fighters were doubtful as to their usefulness. Jonathan Griffin accepted that, even though their speed advantage over bombers was decreasing, interceptors should form part of a balanced defence system. But he thought that, even so, ARP and AA would become increasingly important overall.²⁸

Not until the late 1930s did confidence in even the possibility of effective air defence increase. This was mostly due to perceptions of the combat effectiveness of fighters in Spain.²⁹ The introduction of an impressive new generation of RAF interceptors, including the Hawker Hurricane and the Supermarine Spitfire, might be another reason, though they are in fact little mentioned. Major-General Henry Rowan-Robinson offered political and psychological reasons for fighter defences: that the sight of them in action would stiffen the morale of civilians ‘far more than any reports of the successful bombing, say, of Berlin or Paris’. Such a defensive strategy would also sway world opinion in favour of the bombed country.³⁰ Perhaps the most persuasive case for the fighter was made by Ajax, a former RAF pilot writing under a pseudonym. He believed that air forces would fight each other, not civilians, and that ‘The correct answer to bombers is fighters, not reprisal bombing’.³¹ He argued that fighters (along with AA) at least had a chance of preventing a knock-out blow, unlike ARP which passively accepted it.³² His argument that fighters could easily climb to intercept incoming raiders was rather weak – ‘Where a bomber can fly, there can a fighter fly also’ – but he was on firmer ground when he pointed out that bombers were two or three

²⁶Noel Baker, ‘The International Air Police Force’, 231. On the international air force concept, see p. 180.

²⁷Noel Baker, ‘A national air force no defence’, 200.

²⁸Griffin, *Glass Houses and Modern War*, 62-3.

²⁹See p. 90.

³⁰Rowan-Robinson, *Imperial Defence*, 148.

³¹Ajax, *Air Strategy for Britons*, 141, 142.

³²*Ibid.*, 36-7.

times more expensive in both money and manpower.³³ Finally, Ajax pointed out that the German and Italian air forces were evidently still committed to the concept of fighters, even though their strategic stance was offensive; and in that case it would be foolish to assume that they were wrong.³⁴

The onset of war only accelerated the shift in prejudice towards the fighter. Spaight lauded Fighter Command's warriors and their mounts in a book written just as the Battle of Britain was beginning, calling them 'St George's dragons'.³⁵ He rehearsed the conclusions drawn from Spain about the vulnerability of unescorted bombers to fighters, and noted the terrible casualties incurred in coastal raids made by both Bomber Command and the Luftwaffe early in the war.³⁶ The latest battles over the English Channel were also going Fighter Command's way.³⁷ But even Spaight, who never fully accepted the dogma of the knock-out blow and who had long believed in the value of fighters, could not help but be concerned about whether fighters could maintain their current ascendancy, 'a question which only time can answer'.³⁸

Anti-aircraft weapons

Anti-aircraft weapons were an early, and perhaps obvious, means of defence against the bomber. Once aircraft began to be used for military purposes, it was inevitable that in wartime they would be shot at by enemy troops, if within range of ground fire; and from here it was only a small step to the design of specialised artillery pieces capable of firing at high elevations and long ranges.³⁹ Colonel Louis Jackson outlined some of the possibilities of AA

³³Ajax, *Air Strategy for Britons*, 50, 56, 58-9. Perhaps unknowingly, here Ajax echoed post-Munich Treasury arguments for the rebalancing of RAF expansion in favour of fighters: see G. C. Peden, *Arms, Economics and British Strategy: From Dreadnoughts to Hydrogen Bombs* (Cambridge: Cambridge University Press, 2007), 159.

³⁴Ajax, *Air Strategy for Britons*, 76.

³⁵Spaight, *The Sky's the Limit*, 114.

³⁶Ibid., 105-7, 109-10.

³⁷Ibid., 123.

³⁸Ibid., 109.

³⁹See Gollin, *The Impact of Air Power*, 207-11, 234-8.

guns in a widely-cited talk at the Royal United Service Institution early in 1914. At this stage, they were untried in combat, but Jackson believed that airships would make easy targets.⁴⁰ Aeroplanes were smaller and faster, and so harder to hit, but Jackson believed that they would need to fly at no more than 60 miles per hour in order to be able to accurately bomb a target. By his calculations, this was no more difficult a target than a duck on the wing – rather easier, in fact, since the greater distance of the aeroplane would give the gunner more time to take aim: ‘What an opportunity for specially enlisted gamekeepers!’⁴¹ In general, Jackson thought that ‘the gun is the most effective defence against aerial attack’, especially for relatively small areas like factories or dockyards.⁴² But for a great city such as London, he preferred to trust in air defence, even though no ‘system of patrolling can entirely prevent aircraft from reaching London, and doing damage when they get there’.⁴³

Anti-aircraft defences were largely discounted after the First World War. This was partly because they had done little to prevent German raiders reaching London and other targets. Indeed, according to P. R. C. Groves anti-aircraft guns shot down no aircraft at all over London during the whole war. Postwar air defence exercises apparently confirmed their ineffectiveness.⁴⁴ Another complication was the rapidly improving performance of bombers. This was a problem for fighters, too, of course, but at least their performance was improving as well, and there was little prospect of a similar improvement in AA guns. Even Lieutenant-Colonel Alfred Rawlinson, who commanded a London anti-aircraft unit between 1915 and 1918, had little faith in them. Writing in 1923, he argued that modern aircraft could now fly at such a great altitude that even ‘guns of enormously increased “muzzle velocity” must be considered as an ineffective weapon for purposes of defence’.⁴⁵ He therefore recommended that all resources previously devoted to anti-aircraft defence

⁴⁰Jackson, ‘The defence of localities’, 707.

⁴¹Ibid.

⁴²Ibid., 708.

⁴³Ibid., 713.

⁴⁴Groves, *Behind the Smoke Screen*, 173.

⁴⁵A. Rawlinson, *The Defence of London, 1915-1918*, 2nd edition (London and New York: Andrew Melrose, 1923), 245-6.

should be spent on aircraft instead.⁴⁶ Even worse, it could be argued that AA would potentially help the enemy accomplish a knock-out blow. John Langdon-Davies' analysis of the Italian 'silent raids' on Barcelona in March 1938 suggested that civilians mistook the noise of firing guns for bombs, and that this increased their terror and hence the chance of panic. The conclusion that he drew was that the public should be informed when their guns were firing, perhaps by the BBC, so as to help them to remain calm.⁴⁷ At any rate, according to Langdon-Davies, the use of anti-aircraft weapons should be avoided unless their psychological effects on civilians were taken into account first.⁴⁸

But anti-aircraft defence had its champions too. One was Neon, a pseudonymous critic of airpower extremism, who claimed that AA accounted for a fifth of all the aircraft shot down by France, Germany and Italy during the First World War.⁴⁹ Furthermore, while the sky was large, bombers would be forced to fly through a relatively small volume of space in order to bomb their target, into which gunners could concentrate their fire.⁵⁰ But the most important attribute of AA, according to Neon, was 'its ability to disturb the aviator' and force bombers to fly so high as to impair their accuracy.⁵¹ Another proponent of AA was Major-General E. B. Ashmore, who was Rawlinson's commander in 1917-8 and had more experience with modern anti-aircraft weapons. He was greatly impressed by the introduction of the Vickers Predictor, which enabled gunners to predict and track the paths of aircraft. This led to an increase in accuracy during air defence exercises from

⁴⁶Rawlinson, *The Defence of London*, 247.

⁴⁷Langdon-Davies, *Air Raid*, 98-9.

⁴⁸Ibid., 99-100. There were indeed instances of panic due to AA fire during the Second World War, most notably the Bethnal Green Tube disaster of 3 March 1943, when 173 people were crushed to death in a stampede: see Juliet Gardiner, *Wartime: Britain 1939-1945* (London: Headline, 2004), 526-7. Cf. the stampede at Bishopsgate Tube on 28 January 1918, which was caused by the unfamiliar sound of warning maroons: see Raymond H. Fredette, *The Sky on Fire: The First Battle of Britain 1917-1918 and the Birth of the Royal Air Force* (Washington: Smithsonian Institution Press, 1991 [1966]), 181-2.

⁴⁹Neon, *The Great Delusion*, 226.

⁵⁰Ibid., 228.

⁵¹Ibid., 230.

3% in 1924 to a creditable 14.4% in 1927.⁵² By the end of the 1930s, a number of authors were prepared to argue strongly for the place of AA as part of a balanced air defence system. Jonathan Griffin, for example, lamented the lack of guns: London had less than a fifth of the required number, and even those were out of date.⁵³ But overall he was optimistic that ‘already the ground could master the air just enough to make ruthless bombing against a well-equipped nation plainly inadvisable’.⁵⁴

AA weapons were not restricted to guns. The best-known alternative was the balloon barrage, essentially a wall of cables suspended beneath static blimps.⁵⁵ These were a familiar sight over British cities during the Second World War, but they had also been used sparingly in the First, with the addition of horizontal cables to form an apron. Balloon barrages were generally acknowledged as having a strictly limited purpose, as Griffin noted: to prevent low-flying attacks by forcing bombers to fly over them, and to aid more active air defences by reducing the volume of airspace they needed to cover.⁵⁶ He also pointed out that they were the one form of defence which benefited from the increasing speed of bombers, ‘for the faster bombers become, the harder for them to avoid the lethal wires’.⁵⁷ But it was also widely believed that the cables were cunningly designed, in some unspecified fashion, to make them especially destructive to aircraft which encountered them.⁵⁸

This hints at a curious feature of anti-aircraft defences: far more than any other response to the knock-out blow, they seem to have invited wildly creative thinking about possible technological solutions. These included large, liquid-fuelled rockets; a cable barrage suspended from helicopters or autogyros instead of from balloons; a balloon barrage carrying bombs rather than cables; a bomb barrage launched by rocket; and a barrage of poison gas

⁵²Ashmore, *Air Defence*, 142.

⁵³Griffin, *Glass Houses and Modern War*, 73-4.

⁵⁴Ibid., 77.

⁵⁵A ‘barrage’ was originally a barrier or dam in a river, especially the Nile. So in the anti-aircraft context, a barrage is a wall in the air of some kind, usually of shells.

⁵⁶Griffin, *Glass Houses and Modern War*, 65-6.

⁵⁷Ibid., 65.

⁵⁸See, e.g., Spaight, *Air Power in the Next War*, 24; Turner, *How the Air Force Defends Us*, 28.

laid in the air.⁵⁹ Some of these were said to be already perfected, others were mentioned as potential defences in the future. Certainly few saw any operational use in wartime.⁶⁰

More persistent than any of these ideas, and far more fanciful, was the so-called death ray. This was usually described as an electromagnetic weapon able, so it was claimed, to inflict destruction or stop engines near-instantaneously and at great distance, thus solving the fundamental problems besetting conventional AA. A number of inventors claimed to have invented some form of death ray, though none was able to produce an actual working example. One of the earliest claimants, and the most famous, was Harry Grindell Matthews, an inventor from Wales. In 1924, he demonstrated his invention to representatives of the Air Ministry, who however were not convinced that it could halt the engine of an aircraft in flight as advertised. A minor press scandal ensued, involving a threat by Grindell Matthews to sell his device to the French, a court injunction to prevent him from doing so, and questions in Parliament about why the government was so uninterested in investigating a weapon of such apparent defensive power.⁶¹ Similar claims surfaced from time to time in the rest of the interwar period; as late as 1940, the former RFC pilot Arch Whitehouse believed that ‘Nothing in the way of a strong air defence is being left undone’, in part a reference to ‘the possible use of ultra short-wave devices [...] that are supposed to paralyse the electrical systems of enemy aircraft engines’.⁶² Even J. B. S. Haldane, a distinguished geneticist, seemed to accept that death rays could work in principle:

⁵⁹See Fuller, *Towards Armageddon*, 186-7; Possony, *To-morrow’s War*, 120, 121; Whitehouse, *Hell in Helmets*, 198-9; Kenworthy, *Will Civilisation Crash?*, 255. See also E. H. G. Barwell, *The Death Ray Man: The Biography of Grindell Matthews, Inventor and Pioneer* (London, New York and Melbourne: Hutchinson & Co., n.d. [1943]), 136-42.

⁶⁰For some exceptions, see David Zimmerman, *Britain’s Shield: Radar and the Defeat of the Luftwaffe* (Stroud: Sutton, 2001), 144-8.

⁶¹See, e.g., ‘Death ray secret’, *Daily Mail*, 22 May 1924, 9; ‘Death ray test’ and ‘French contract’, *Daily Mail*, 28 May 1924, 9; “‘Death ray’”, *Daily Mail*, 29 May 1924, 10; also Barwell, *The Death Ray Man*, 89-100. The Ministry of Munitions examined a similar claim in 1918, as did the Air Ministry in 1933. In fact dozens of death rays were put forward, but few records have survived: see Zimmerman, *Britain’s Shield*, 45-7; Barwell, *The Death Ray Man*, 100-10; also Harper, *Twenty-five Years of Flying*, 195.

⁶²Whitehouse, *Hell in Helmets*, 198.

It is earnestly to be hoped that some other method may be discovered for bringing down hostile machines. Various forms of ray have been suggested, including rays to upset the ignition system, or explode the bombs, and heat rays to burn up the 'planes.⁶³

Unfortunately, he foresaw grave difficulties in scaling up such devices from something which could work at a range of ten feet to one which was effective at a thousand times the distance.⁶⁴ The inventor 'Professor' Archibald Low, himself possessed of a fertile imagination, likewise did not discount the possibility of death rays, but thought that a practical weapon was at least fifty years away.⁶⁵ Therefore such superscientific defences remained in the realm of science fiction.⁶⁶ But in a strange way, the death ray obsession did help defend Britain against air attack, for it was in an effort to settle the question once and for all that the idea of radio direction finding (RDF) was first conceived. And RDF, or radar as it later became known, was a vital component of Fighter Command's integrated air defence system in 1940.⁶⁷

The counter-offensive

Given the primacy accorded by many airpower writers to the bomber, it is not surprising that for many of them the favoured response was another bomber. That is, they believed that Britain needed a bomber force powerful enough to deliver a knock-out blow against an enemy nation. Hopefully this would be enough to deter an attack on British cities from taking place at all, but if not, the RAF would attempt to out-bomb the enemy air force: to make the enemy people 'squeal before we did', as CAS Air Vice-Marshal Sir

⁶³Haldane, *A.R.P.*, 72.

⁶⁴*Ibid.*, 73.

⁶⁵Low, *Modern Armaments*, 239-44. Other appearances of the death ray include Grahame-White and Harper, *Aircraft in the Great War*, 253; Victor Lefebure, *Common Sense about Disarmament* (London: Victor Gollancz, 1932), 138.

⁶⁶Where, of course, they were staples: see, e.g., Desmond, *Chaos*, 201, and the 1939 feature film *Q Planes*.

⁶⁷See Zimmerman, *Britain's Shield*, chapter 4.

Hugh Trenchard put it in 1923.⁶⁸ But the principle that the best defence was a good offence was constrained by the realities of the modern age. Britain's position as a status quo power dictated a reluctance to start wars, and the public's abhorrence of war was amplified by the thought of bombing civilian populations. In 1929, Major-General E. B. Ashmore explained that:

It is not easy to picture a British Government ordering a great bombing offensive before other hostilities have begun; even if such an offensive were only directed against enemy aerodromes. History might be puzzled, might hesitate before deciding that our reason for taking such an action was really defensive, and taken in order to save our capital from destruction. In hypercritical circles, one might almost hear the word 'Crime.'⁶⁹

No longer could Britain contemplate striking pre-emptively, as the Royal Navy had done at Copenhagen in 1801 and 1807.⁷⁰ It could only attack in response to an assault on its cities. A naval cult of the offensive became an aerial cult of the counter-offensive.

Aerial counter-offensive strategy was strongly influenced by naval strategy, at least initially. The naval legacy is clearest in the earliest responses to the coming of flight, in the decade before the First World War, when the dreadnought race with Germany was at its height, and Britain's declared policy was to maintain a two-power standard: that is, that the Navy's strength should at least equal that of any two other nations.⁷¹ This navalist rhetoric was borrowed by airpower advocates. At a public meeting of the

⁶⁸CAS meeting, 19 July 1923, AIR 2/1267; quoted in Jones, *The Origins of Strategic Bombing*, 29.

⁶⁹Ashmore, *Air Defence*, 149.

⁷⁰As late as 1904-5, journalists and politicians could be found who were prepared to argue that the German fleet should be attacked before it became too powerful: see Peter Padfield, *The Great Naval Race: The Anglo-German Naval Rivalry, 1900-1914* (Edinburgh: Birlinn, 2005 [1974]), 121-2; Jonathan Steinberg, 'The Copenhagen complex', *Journal of Contemporary History* 1 (1966), 39. Ashmore remarked upon the changing times: 'As Lord Sydenham aptly puts it, we are no longer in the days of Copenhagen'. Ashmore, *Air Defence*, 149.

⁷¹See Jon Tetsuro Sumida, *In Defence of Naval Supremacy: Finance, Technology and British Naval Policy, 1889-1914* (Boston: Unwin Hyman, 1989), 14.

Aerial League of the British Empire held in London in April 1909, Rear-Admiral Sir Percy Scott declared that ‘we ought to proceed at once to form a two-Power standard in airships’.⁷² Scott, a controversial naval reformer, was speaking specifically of the threat posed by German Zeppelins to the Navy’s warships. However, when T. G. Tulloch warned of ‘The aërial peril’ several months later he meant the danger to London, and used Scott’s two-power standard as a yardstick for British airpower generally.⁷³ The following year, Montagu of Beaulieu, another participant at the April 1909 meeting of the Aerial League, used similar language, but this time chose a one-power standard:

The day is not far distant when England will have to be something other than nominal mistress of the seas. She will have to be at least equal to her neighbours in the matter of aerial defence and offence, and it is our business and the duty of the nation at large to see that the authorities are awakened in time to their responsibilities in this direction.⁷⁴

These were peacetime standards, of course, inapplicable during wartime. During the First World War, the military’s appetite for aircraft for all purposes became voracious, and commentators demanded the production of many thousands of aircraft to satisfy it.⁷⁵ Others were less precise, such as Claude Grahame-White and Harry Harper, who simply spoke of the need for Britain to possess ‘command of the air’.⁷⁶

After the war, language reverted to the navalist precedent for a time. Referring to the HDAF programme of 1923, Sir George Aston approvingly noted that ‘A “One-Power Standard” in the air has been adopted by us in principle, the power at present being France’.⁷⁷ Lieutenant-Colonel Alfred

⁷²‘The Aerial League’, *The Times*, 6 April 1909, 6.

⁷³Tulloch, ‘The aërial peril’, 807.

⁷⁴Montagu of Beaulieu, ‘Aerial Machines and War’, 10.

⁷⁵See p. 41.

⁷⁶Grahame-White and Harper, ‘Two years of aerial war’, 209.

⁷⁷George Aston, *The Problem of Defence: Reminiscences and Deductions* (London: Philip Allan & Co., 1925), 66.

Rawlinson wanted a two-power standard instead.⁷⁸ P. R. C. Groves, however, did not specify a standard but simply averred that the size of the nation's striking force 'will be of peculiar and very direct importance', particularly since any surplus over the force used to bomb enemy cities could be used to attack enemy aerodromes and gain a possibly decisive air superiority.⁷⁹

By the 1930s, when Germany's air force replaced France's as the standard of measurement, the term 'parity' increasingly came to be preferred to talk of standards.⁸⁰ This was more appropriate to an age where the ideal of disarmament was widely cherished: it implied no more than a one-power standard, and even then was usefully imprecise as to the exact force levels involved, depending on whether quantitative or qualitative parity was meant. Besides, for most of the decade the RAF languished at fifth or sixth in tables of the world's largest air forces, down from first in 1918, and parity was a suitably humble goal. But even so it was a contentious one. In 1934 Groves thought that 'aerial parity, which should never have been sacrificed, is indispensable', regardless of Britain's foreign policy.⁸¹ His last published book blasted pacifists and 'the Socialist Opposition' for opposing the Government's all too modest air expansion programme (300 extra aircraft over two years, whereas he believed that Germany was adding that number per month), referring darkly to a 'peril within the gates'.⁸² Groves believed that because of the possible convertibility of civilian aircraft to military use, Hitler's claim that Germany already had parity with Britain in the air was a huge understatement.⁸³ Others were more sceptical of the need for parity. Sir Norman Angell, the renowned internationalist and former Labour MP, thought that 'Parity has become a blessed word. We shall be saved [...] by Faith, Hope

⁷⁸Rawlinson, *The Defence of London*, 259. Scott repeated his prewar demand for a two-power standard in his introduction to Rawlinson's book: *ibid.*, v.

⁷⁹P. R. C. Groves, 'Our future in the air', *The Times*, 21 March 1922, 14.

⁸⁰The word 'parity' was itself a legacy of naval armaments diplomacy: see Webster and Frankland, *The Strategic Air Offensive Against Germany*, 66. References to a one-power standard can still be found in the 1930s: see Alexander Rose, 'Radar and air defence in the 1930s', *Twentieth Century British History* 9 (1998), 230.

⁸¹Groves, *Behind the Smoke Screen*, 42.

⁸²P. R. C. Groves, *Our Future in the Air* (London, Bombay and Sydney: George G. Harrap & Co., 1935), 111.

⁸³In fact, the opposite was true: see Wark, *The Ultimate Enemy*, 44-6.

and Parity'.⁸⁴ Drawing on the experience of the 1922 Washington Naval Conference, he pointed out the difficulties in comparing force levels between nations with greatly differing equipment, doctrine and strategic principles.⁸⁵ L. E. O. Charlton explained why aerial parity was problematic:

We are used to the conception of naval standards of power, for they are openly arrived at by agreement, and the facility with which such agreements can be brought about have caused us blindly to presume that one air imponderability against another can be weighed in balance.⁸⁶

But this was not the case, Charlton added, for unlike warships which are hard to conceal, aircraft are relatively small and easy to hide. Furthermore, their manufacture can be spread over a large number of locations, whereas warships must be turned out of a limited number of shipyards.⁸⁷ Lord Davies thought that parity was an open-ended goal which would only lead to a ruinous arms race.⁸⁸ The quest for parity with Germany did indeed drive British aerial rearmament in the mid-1930s, but was then abandoned since it was believed that Britain was too far behind to catch up before the outbreak of war.⁸⁹ To a large extent this was based on exaggerated perceptions of German aerial strength and effectiveness, and so was only partly a race against a real opponent, as opposed to phantoms conjured up by the military intelligence community.⁹⁰

Another major difficulty with parity was convertibility: the ad hoc conversion of civilian aircraft into makeshift bombers, by equipping them with bombracks and bombsights. This possibility was first raised by the Civil Aerial Transport Committee, appointed by Parliament in 1917 to make rec-

⁸⁴Angell, *The Menace to Our National Defence*, 55.

⁸⁵Ibid., 55-6.

⁸⁶Charlton et al., *The Air Defence of Britain*, 63.

⁸⁷Ibid., 63-5.

⁸⁸Davies, *Force and the Future* (London: The New Commonwealth, 1934), 35.

⁸⁹Overall parity was in fact roughly achieved by the outbreak of war: see Smith, *British Air Strategy between the Wars*, 223-4. See also Sebastian Ritchie, *Industry and Air Power: The Expansion of British Aircraft Production, 1935-41* (London and Portland: Frank Cass, 1997).

⁹⁰See Wark, *The Ultimate Enemy*, 47-8.

ommendations for the postwar structure of the civil aviation industry.⁹¹ It was also incorporated by CAS Major-General Frederick Sykes into his ill-fated proposal for the postwar structure of the RAF itself.⁹² Groves was Sykes' close friend and subordinate, and helped draft the Sykes memorandum. He was almost obsessed by convertibility and saw it as both threat and salvation. Convertibility was a threat because although Germany was forbidden from possessing an air force by the terms of the Versailles Treaty, it was strong in civil aviation: much stronger than Britain, as its own anæmic airlines had collapsed in 1921 and required the support of a series of temporary state subsidies.⁹³ Groves feared that Germany's many airliners could rapidly and covertly be turned into bombers, creating a striking force that could deliver a knock-out blow against Britain.⁹⁴ But convertibility was also potentially salvation, for Groves proposed that Britain should also concentrate on building a strong civil aviation industry. This would enable the bulk of its own wartime striking force to consist of converted civilian aircraft, with a small proportion of RAF aircraft and personnel to provide leadership and cohesion. In this way, Britain could put a far larger striking force into the field than it could otherwise afford to maintain on the RAF's meagre postwar budget.⁹⁵

Groves failed to convince many people about the problem of convertibility in the short term, and by the 1930s he abandoned his own proposal for using civilian aircraft to expand the RAF's striking power.⁹⁶ But by that time the principle of convertibility was widely accepted. Ashmore declared that, in the absence of air defences the 'commercial aeroplane becomes a weapon of

⁹¹*Reports of the Civil Aerial Transport Committee with Appendices* (1918), Cd. 9218, 11. Lord Northcliffe was the committee's chairman, Harry Harper its secretary, and H. G. Wells a member.

⁹²'Memorandum by the Chief of the Air Staff on air-power requirements of the Empire', 9 December 1918; in Sykes, *From Many Angles*, 572. On the Sykes memorandum, see p. 8.

⁹³See Robin Higham, *Britain's Imperial Air Routes 1918 to 1939: The Story of Britain's Overseas Airlines* (London: G. T. Foulis & Co, 1960), 42-6.

⁹⁴See p. 55.

⁹⁵P. R. C. Groves, 'Our future in the air', *The Times*, 22 March 1922, 13-4.

⁹⁶However, as late as 1937 J. F. C. Fuller could see in the burgeoning civil aviation industries of the Dominions the seeds of a great imperial air force, which could be used to defend the mother country: see Fuller, *Towards Armageddon*, 148-9.

war, [since] a few hours' work will convert it into an efficient bomber'.⁹⁷ In 1933, C. C. Turner claimed that 'many countries [...] have designed their airline craft and other civil aircraft with particular reference to their swift adaptability to war uses'.⁹⁸ Five years later, according to Charlton, conversion had actually taken place, 'and often has of late'.⁹⁹ Convertibility also complicated the question of aerial disarmament, since in a world without professional air forces, ersatz bombers would be even more dangerous.¹⁰⁰

Since the possibility of a pre-emptive strike by Britain was almost universally ruled out, Britain's offensive choices came down to deterrence or a counter-offensive. These were not mutually exclusive; indeed, they led to the same conclusion about the size of the RAF's bomber force, that it should be as large as was practicable. This was because, as Groves explained, the possibility of a knock-out blow was greatly increased where there was a disparity of forces:

The possibility of snatching a victory on the outbreak of war by the sole use of air power can only be contemplated when, as in the case of Great Britain to-day, one side is so unprepared as to be at the mercy of the other.¹⁰¹

But of course a force that successfully deterred the enemy would never have its men, equipment and doctrine tested in battle: given the risks involved in exposure to air attack, this was by far the preferred option. On the other hand, only a counter-offensive had the potential to actually defeat an adversary through a knock-out blow.

Deterrence theory emerged very early. In 1909, Tulloch explained that his proposed aerial two-power standard would put 'fear into a possible enemy that two can play at the game of aërial [sic] raids', while still retaining enough

⁹⁷Ashmore, *Air Defence*, 154.

⁹⁸Turner, *Britain's Air Peril*, 79.

⁹⁹Charlton et al., *The Air Defence of Britain*, 65.

¹⁰⁰See Phillip S. Meilinger, 'Clipping the bomber's wings: the Geneva Disarmament Conference and the Royal Air Force, 1932-1934', *War in History* 6 (1999), 320-1; also p. 174.

¹⁰¹P. R. C. Groves, 'Our future in the air', *The Times*, 25 March 1922, 11.

machines to support military and naval operation.¹⁰² A few years later, J. M. Spaight – who clearly envisaged that British airpower would operate in train with its seapower – warned that the destruction of London ‘would be only the first scene of a tragedy. The second would be played by the guns of the British fleet and the bombs of the British seaplanes’.¹⁰³ But Britain entered the First World War without any credible deterrent force, so the theory remained untested. Certainly it was Germany which held the strategic initiative in the air for most of the war. Therefore attention focused on reprisals, or retaliation for the German bombing of British cities.¹⁰⁴ There was certainly a large element of revenge in calls for reprisals, but there was also a desire for deterrence. Joynson-Hicks wrote at the height of the Zeppelin raids of the possibility of attacks on German cities:

raids on open towns are in the nature of reprisals, and aeroplane raids on a really large scale must produce demands from the civil population of Germany to the Government to reconsider whether the damage they are able to inflict on England is worth the price they have to pay for it.

This was not a knock-out blow, because Joynson-Hicks did not envisage aerial bombardment as potentially war-winning. Rather, in bombing Germany harder than it bombed Britain, the German government would be deterred from further attacks.¹⁰⁵ This kind of thinking survived into the interwar period. For example, according to Groves:

It follows that the belligerent who wishes to survive in a ‘war of areas’ must in self-protection resort to the counter-offensive in order to oblige the enemy people to desist from their action. There is no means of avoiding this procedure – which amounts to the commonly, but illogically, deprecated policy of reprisals.¹⁰⁶

¹⁰²Tulloch, ‘The aërial peril’, 807.

¹⁰³Spaight, *Aircraft in War*, 24.

¹⁰⁴It could also be in retribution for other outrages, such as the torpedoing of British passenger ships or the maltreatment of British prisoners of war.

¹⁰⁵Joynson-Hicks, *The Command of the Air*, 183.

¹⁰⁶Groves, *Behind the Smoke Screen*, 177.

But this is in the context of a rapid war fought solely or mostly in the air, so to ‘oblige the enemy people to desist from their action’ meant defeating them. Here deterrence and reprisal shade into the counter-offensive as a war-winning strategy in its own right.

Groves was the most persistent champion of the counter-offensive, or as he initially called it, ‘the aerial offensive-defensive, for which the weapon is the long-distance Striking force consisting of bombing machines’.¹⁰⁷ In 1935, based upon the increase in the power of both bombs and bombers since 1918, he estimated that the scale of any air attack on Britain might be three or four thousand times that of the German raids in the First World War. He did assign some value to both fighter defences and ARP, but remained committed to the counter-offensive as the only true form of defence possible. Otherwise, ‘this country is liable to suffer defeat at the outset of a major war, and the whole Empire thus be shattered by a decisive knock-out blow at its heart’.¹⁰⁸ Most advocates of RAF expansion were as wedded to the counter-offensive as Groves, though Spaight thought that an air force ‘should not content itself with conforming to the pace which the enemy may set’, and so preferred to think in terms of ‘action’, not ‘counter-action’.¹⁰⁹

But there was disagreement over just what targets a counter-offensive should be aimed at. There were three major types of target: cities, infrastructure (including industry) and aerodromes. In 1922, Groves predicted that a mixture of these would be attacked.¹¹⁰ But by 1934, he had come to believe that this was counter-productive. He criticised official RAF doctrine, which was to attack infrastructure and aerodromes, asking:

which is the quicker means to achieve the decisive end, namely, the destruction of the opposing people’s will to war – to attack the people themselves, or to attempt to destroy their productive organization and amenities? The answer is obvious – the people

¹⁰⁷P. R. C. Groves, ‘Our future in the air’, *The Times*, 21 March 1922, 14. The phrase was not original to Groves: see, e.g., ‘The air raid agitation’, *Aeroplane*, 11 July 1917, 79.

¹⁰⁸Groves, *Our Future in the Air* (1935), 67.

¹⁰⁹Spaight, *Air Power and the Cities*, 122.

¹¹⁰P. R. C. Groves, ‘Our future in the air’, *The Times*, 21 March 1922, 14.

themselves.¹¹¹

Major-General Henry Rowan-Robinson, by contrast, thought that ‘Both ethically and militarily the best course for us to pursue in this matter is the destruction of the enemy aerodromes and air forces’. He believed that this would both protect British cities and make it unnecessary to actually bomb enemy civilians, because when the ‘civil will is thus fully exposed, the enemy will surrender’.¹¹² Interestingly, in a later book Rowan-Robinson linked the choice of strategy to the effectiveness of air defence and ARP. Only if these were weak would an enemy dare to bomb cities. Otherwise, it would not be worthwhile, and aerodromes would be the primary target. This would also have the advantage of avoiding ‘the shocking of world opinion’.¹¹³ Similarly, Spaight argued from legal as well as military grounds that only strictly military targets should be attacked: this would include aerodromes and factories, but not public utilities or civilians themselves.¹¹⁴ The legal and ethical strictures were important, or at least seemed so in peacetime, given British self-perceptions as a nation which would fight, as far as was possible, a humane war. Hence predictions that cities would be bombed were usually couched in general terms or as retaliatory responses.

There were two major criticisms of the counter-offensive, as there were of the knock-out blow itself: one that it was ineffective, the other that it was immoral. Major-General W. D. Bird, writing in 1922, believed that an attack on infrastructure was ‘in general more likely to arouse the longing for retaliation than for submission’. This in turn would stimulate defensive measures, which might include further raiding of an equally ineffectual kind. This could only end when ‘mutual annihilation’ threatened, ‘the crudest of methods of solving the problems which had caused the war’.¹¹⁵ Another argument against counter-bombing was that while Britain was especially vul-

¹¹¹Groves, *Behind the Smoke Screen*, 172.

¹¹²H. Rowan-Robinson, *Security? A Study of our Military Position* (London: Methuen & Co., 1935), 140-1.

¹¹³Rowan-Robinson, *Imperial Defence*, 156.

¹¹⁴Spaight, *Air Power and the Cities*, 132-3.

¹¹⁵W. D. Bird, ‘Some speculations on aerial strategy’, *Army Quarterly* 4 (July 1922), 249.

nerable to bombing because of London's importance and proximity to the Continent, its likely enemy would be much harder to bomb. As Sir Edward Grigg pointed out, 'There is nothing like this concentration of targets for counter-bombardment in Germany'.¹¹⁶ He also believed that ARP was more advanced in Germany than in Britain, making it even more resistant to a knock-out blow.¹¹⁷ Jonathan Griffin attacked the suggestion that the RAF could bomb the enemy's aerodromes, thus preventing them from being used to bomb Britain, by noting that they might be hidden underground. And the threat of reprisals would merely encourage an aggressor to make the first strike.¹¹⁸ As for deterrence, Philip Noel Baker pointed out that even if parity existed at the outset of a war, at some point one side would gain an advantage in the air and would no longer be deterred from attempting a knock-out blow.¹¹⁹ A different analysis was proposed by Angell, who also disagreed in part with the 'Retaliationists' like Groves. His analysis of the logic of the knock-out blow suggested that a first strike was likely to be so devastating that reprisals would be weak or non-existent. Moreover, Angell argued that a reprisal bomber force was too blunt an instrument to suit British foreign policy – devastating German cities in response to a violation of Belgian neutrality, for example, was surely disproportionate.¹²⁰

This argument touched on the other major criticism of the counter-offensive, popular among pacifists in particular, that counter-bombing would inevitably descend into attacks on civilians, which was inherently immoral. For example, Helena Swanwick, former head of the British section of the Women's International League for Peace and Freedom, called aerial bombardment the 'mass-murder of populations'.¹²¹ But disgust at the prospect of bombing civilians was not confined to the peace movement: the naval architect E. F. Spanner implied that the RAF was 'inspired by barbaric

¹¹⁶Grigg, *Britain Looks at Germany*, 292.

¹¹⁷Ibid., 291.

¹¹⁸Griffin, *Britain's Air Policy*, 175.

¹¹⁹P. J. Noel Baker, *Disarmament*, 2nd edition (London: Hogarth Press, n.d. [1927]), 219-20.

¹²⁰Angell, *The Menace to Our National Defence*, 161-3.

¹²¹H. M. Swanwick, *New Wars for Old* (London: Women's International League, 1934), 43.

and uncivilised ideas', unlike the Royal Navy; and the navalist Neon asked whether there was a 'moral distinction' between the bombing of London and the bombing of villages in Waziristan, as carried out by the RAF in pursuit of air control.¹²²

Conclusion

Resistive responses to the knock-out blow were somewhat less ideologically-determined than adaptive ones. The counter-offensive was favoured by writers who leaned to the right, like P. R. C. Groves, while to a lesser extent, air defence and AA were advocated by left-liberals, such as Basil Liddell Hart. However, on the whole the latter group preferred adaptive or internationalist responses: indeed, Liddell Hart rated ARP as the most urgent priority of all.¹²³ The difference is no doubt due to the general preference of serving or retired military officers, often conservative in outlook, for active resistance to the knock-out blow rather than passive acceptance or uncertain diplomacy.

Resistive responses were the earliest considered; indeed, they preceded the knock-out blow theory by a number of years, appearing well before the First World War. This is due to their military nature: it is natural that the first reactions to the threat of an attack on Britain would in turn be warlike. At this stage, principles of aerial strategy were only nascent, which helps to explain the borrowing of concepts from naval strategy, such as command of the seas and the two-power standard. In some ways, the knock-out blow was a strange hybrid of the ideas of the naval strategists Alfred Thayer Mahan and Julian Corbett. The desire for a decisive strategic battle was quite Mahanian, except for the assumption that no decisive aerial battles were possible. Therefore the objective had to be the enemy people instead, not the enemy air fleet, and this is reminiscent of Corbett's preference for blockade instead of battle.¹²⁴ In 1911, Corbett, Britain's premier naval theorist, deprecated

¹²²Spanner, *Armaments and the Non-Combatant*, 294; Neon, *The Great Delusion*, 225.

¹²³Liddell Hart, *The Defence of Britain*, 148-9.

¹²⁴See Till, 'Corbett and the emergence of a British school?', 79-82; also Semmel, *Liberalism and Naval Strategy*, chapter 9; Quester, *Deterrence before Hiroshima*, viii-xiv.

the need to fight decisive battles for command of the sea, for ‘battles are only the means of enabling you to do that which really brings wars to an end – that is, to exert pressure on the [enemy] citizens and their collective life’.¹²⁵ Corbett concluded that Britain, which depended upon imports for survival, should ultimately maintain a strategic defensive to protect its lines of communication. A quarter of a century later, J. M. Spaight detected a parallel between the air and the sea, and suggested that ‘the capacity for *evasion*, at sea of the submarine, in the air of the aeroplane’ meant that absolute superiority was not attainable in either element.¹²⁶ Given this ability of air fleets to decline combat, air defence was largely futile. But since the air is ‘more universal and all-pervading than the sea’, Corbett’s preference for a strategic defensive had to be discarded, because Britain’s cities – above all, London – were exposed to attack in a way that its sea lanes were not.¹²⁷ Hence the primacy of the aerial counter-offensive from the 1920s onward, which was as important to Groves and his followers as it was to the Air Staff.

Air and anti-aircraft defences were never ignored completely. But even those who thought they were worth investing in generally accepted, as did C. C. Turner, that ‘the end of a war would not be attained by [such] means’.¹²⁸ And because of their apparently fundamental inability to decisively defeat a knock-out blow, they met with little favour until the very end of the 1930s, when the Spanish Civil War altered perceptions of the relative combat effectiveness of bombers, fighters and anti-aircraft weapons. Indeed, Fighter Command and Anti-Aircraft Command were Britain’s shield in 1940, to a far greater extent than Bomber Command.¹²⁹ In the meantime, AA was peculiarly attractive to unconventional thinkers, although the improbable nature of the proposals underlined their desperation and limited their appeal. Nor

¹²⁵Julian S. Corbett, *Some Principles of Maritime Strategy* (London: Longmans, Green and Co., 1911), 94.

¹²⁶Spaight, *Air Power in the Next War*, 3; emphasis in original. Surface fleets could also decline combat if desired: witness the strategic stalemate in the North Sea in 1914-8.

¹²⁷*Ibid.*, 6.

¹²⁸Turner, *Britain’s Air Peril*, 49.

¹²⁹Bomber Command and Coastal Command did make a crucial contribution by attacking the Continental invasion ports, however: see Richard Overy, *The Battle* (London: Penguin Books, 2000), 63-5.

could discussions of the complexities of fighter interception tactics or improved AA gunnery techniques overcome the simple equation of bombing with the destruction of enemy morale and hence victory. This equation also led to a simple conclusion: the more bombers Britain had, the better – at a bare minimum, parity with the nearest enemy striking force. The result was an obsession with numbers, from the two-power standard through to parity, by way of Groves' idea of convertibility. Again, this emphasis on materiel over morale – at least as far as the air force itself was concerned – was very Corbettian.¹³⁰

Resistive responses most closely corresponded to official policy. The counter-offensive, supplemented by air and AA defence, was RAF doctrine throughout the interwar period. But this does not mean that airpower writers who advocated these responses supported government policy; in fact they usually wanted it to go further, to increase Britain's striking force or change its targeting policy. They had little effect, although they did smooth the way for the succession of RAF expansion schemes in the 1930s. Unofficial writers had more freedom to call for the bombing of enemy civilian populations, as distinct from strictly military targets such as aerodromes, than those inside the RAF. But this was precisely what repulsed left-liberal thinkers, who therefore sought other responses to the knock-out blow: anything but the counter-attack.

¹³⁰See Semmel, *Liberalism and Naval Strategy*, 135-6.

Chapter 5

Internationalism

Internationalist responses to the knock-out blow relied upon the co-operation of the international community in some form. Where adaptation and resistance accepted that war from the air was likely, internationalism attempted to prevent war itself, or at least alter how it was fought. To a large extent, these responses overlapped with attempts to limit or prevent war more generally through international law, but particular forms were favoured by airpower writers.

These included limitation, disarmament, collective security, and internationalisation. Limitation was the attempt to humanise aerial warfare, for example by restricting bombing to military targets, such as the zone of battle, or at least to anywhere but cities. Disarmament – usually meaning multilateral disarmament, as distinct from unilateral disarmament – was not limited to air forces alone but was planned to be a wide-ranging reduction of military forces across Europe. However, disarmament in the air was widely considered the most urgent need. Collective security in the guise of the League of Nations was, for much of the interwar period, British policy: indeed, it was supported by a solid consensus of opinion across the political spectrum, with the exception of some quarters of Conservative opinion.¹ It was hoped that economic sanctions applied by League members would deter or halt a war; failing that, military sanctions could be used instead. Collective se-

¹See Michael Howard, *War and the Liberal Conscience* (London: Temple Smith, 1978), 86.

curity also encompassed regional arrangements such as the air pact or air Locarno. Finally, internationalisation was the most distinctively air-minded contribution to the cause of war prevention. The form most often proposed was an international air force, which would deter attacks by aggressor states, and either intercept their bombers or punish them by aerial bombardment if deterrence failed. It could also refer to the internationalisation of civil aviation, to prevent their use as bombers. Either approach could be combined with disarmament; indeed, the possibility of convertibility was often held to require internationalisation in an otherwise disarmed world. Less common responses in the airpower literature included pacifism and appeasement.²

Internationalism was where the most radical responses to the threat of the knock-out blow were to be found. The motivation for this was the belief, as Sir George Aston put it, that given a war carried out through bombing and counter-bombing, “Civilisation,” as a process of national development on purely national lines, with no higher ideals, would then topple humanity into the crater of Gehenna’.³ But internationalist responses were so radical that, by and large, they were never properly attempted.

Limitation

There were two major ways in which war could be limited or humanised: through international law or through moral restraint. Both of these assumed that combatants would voluntarily refrain from attacking civilians, whether through altruism or self-interest. A third method was sometimes advanced, that the new technologies of destruction would cause wars in the air to be self-limiting, either through more discriminate targeting or because they would be so short.

Legal attempts to limit the conduct of war began in the 1860s, with the first Geneva Conventions. The Hague Peace Conference of 1899 was the first to address the danger of aerial warfare. It banned the dropping of bombs from

²See, e.g. Sarah Campion, *Thirty Million Gas Masks* (London: Peter Davies, 1937); Sisley Huddleston, *War Unless* — (London: Victor Gollancz, 1933).

³Aston, *The Problem of Defence*, 69.

balloons for a period of five years. The second Conference, in 1907, failed to renew this ban; but it did prohibit the bombardment of ‘undefended places’, a somewhat vague stricture which did little to prevent air raids on cities across Europe in the First World War.⁴ At any rate, initially there were few calls for laws to govern the use of aircraft in war: one of the earliest books to deal with the topic, R. P. Hearne’s *Aerial Warfare*, published in 1909, merely suggested international agreements to prevent aerial spying.⁵ Jurists such as J. M. Spaight, then a junior civil servant, were much more interested in the legal questions surrounding the use of aircraft in war. Just before the outbreak of the First World War, Spaight summarised the current legal thinking on the subject, and added his own suggestions. As far as aerial bombardment was concerned, he merely proposed that the Hague convention be followed, as far as was possible.⁶ During the war, the question seemed moot; but afterwards, substantial efforts were made to codify laws governing aerial warfare, particularly at the Hague in 1923, where the Air Warfare Rules were drafted by a group of international jurists. Although never adopted into international law, they were significant as a model for legal approaches to the limitation of aerial warfare. The Air Warfare Rules clarified the prewar Hague principles by ruling out civilians per se as legitimate targets, while permitting attacks on areas of military significance within cities, as long as bombing was not indiscriminate.⁷ In the opinion of Spaight, by now an Air Ministry official, this would mean that a city’s railway stations and docks, for example, were legitimate military objectives, but only at night when they were less likely to be crowded with civilians.⁸

In the 1930s, various proposals were made for mutual agreements between nations to humanise aerial warfare. Most ambitious of all was the MacDonald Plan, a draft convention presented at the World Disarmament Conference in 1933 by Ramsay MacDonald, then Prime Minister. It called for a complete

⁴See Quester, *Deterrence before Hiroshima*, 8-9.

⁵Hearne, *Aerial Warfare*, 205-10.

⁶Spaight, *Aircraft in War*, 118.

⁷The Air Warfare Rules are reprinted in their entirety in Thomson, *Air Facts and Problems*, 195-255.

⁸Spaight, *Air Power and War Rights*, 229-30.

ban on aerial bombing, except for air control which was felt to be an essential method of imperial policing. However, this plan was more of an expression of Britain's willingness to negotiate than a realistic prospect, and ultimately went nowhere.⁹ In 1934, after the collapse of the Conference, there were calls from the left in Parliament and the press for an air convention to specifically deal with aerial disarmament and the limitation of bombing, but this never took place.¹⁰ At the end of the decade, Basil Liddell Hart, the liberal military strategist, outlined the two remaining options: firstly, 'the creation within a country of demilitarized zones which would be assured of immunity from air bombardment', for example population centres or areas of cultural significance; or, secondly, 'an agreement to confine bombing to the immediate neighbourhood of land and sea operations', so that cities in the rear of the battle area could not be attacked.¹¹ No such agreements were ever reached, despite the ostensible support, in the latter case, of Hitler himself. In any case, many in the peace community were sceptical that they would be adhered to in wartime, even if they could be agreed to by all sides. Helena Swanwick, a veteran pacifist, bitterly argued that:

you can't regulate or civilize, or legalize war, any more than you can regulate vice. The vile things will escape your bonds and mock you. Suffocated babies, disembowelled animals, fields and forests sterilized, houses and churches in ruins, starving populations may then be pictured under the caption, 'International Law and Order'.¹²

David Davies, a devout internationalist, likewise declared that 'The laws of war are a myth and a delusion. One reprisal only leads to another until the ingenuity of the belligerents to devise something more terrible is exhausted'.¹³ The conduct of the First World War seemed to lend credence to such pessimistic views, with the progressive abandonment by both sides of prewar

⁹See Bialer, *The Shadow of the Bomber*, 38-9.

¹⁰See Kyba, *Covenants without the Sword*, 115, 118-9, 135.

¹¹Liddell Hart, *The Defence of Britain*, 193-4.

¹²Swanwick, *New Wars for Old*, 44.

¹³David Davies, *Suicide or Sanity? An Examination of the Proposals before the Geneva Disarmament Conference* (London: Williams and Norgate, 1932), 30.

rules regarding the interception of enemy merchant vessels at sea, as but one example.¹⁴ But some trusted, as Spaight did, in the humanitarian feelings of the bomber crews themselves, since ‘in a force whose operating *personnel* are mainly officers, as those of most air forces are, one can count upon a high standard of both honour and initiative’: such men – presumably products of the best public schools – would do everything in their power to see that civilians were not endangered unnecessarily.¹⁵ Liddell Hart was not so sanguine, but still believed that limitations on warfare were useful, especially at the outbreak of hostilities. He noted that ‘it is remarkable what pains an aggressor will take to avoid the odium of aggression’. As an example he gave the Italian use of gas in Abyssinia, which they delayed until their campaign was in danger of lasting into the rainy season, and even then attempted to hide their use of it. He concluded that the more limitations on the conduct of war, the better: ‘Although each tie separately may seem as fragile as silk, when interwoven they may have the strength of steel’.¹⁶

The predicted humanisation of war through its barbarisation was a surprising, but not uncommon, response to the knock-out blow. The essence of this was that war would become so terrible that it could not be sustained for long: one side or the other would surrender rather than continue to sustain massive civilian casualties. At first, however, it seemed that aerial bombardment would be more humane than traditional forms of warfare because it would be less indiscriminate. In 1909, Hearne wrote that because of the ability of the airship to attack vital targets with pinpoint accuracy, it would ‘render warfare more localised in its destruction (that is to say, more humane), more decisive, and more rapid’.¹⁷ There would no longer be any need to ‘lay waste a great tract of country, with all the misery this entails’.¹⁸ The First World War provided little evidence for this ability, though it continued to be widely assumed well into the Second that bombers could limit their at-

¹⁴See Paul G. Halpern, *A Naval History of World War I* (Annapolis: Naval Institute Press, 1994), 291-2.

¹⁵Spaight, *Air Power and War Rights*, 210-1; emphasis in original.

¹⁶Liddell Hart, *The Defence of Britain*, 190-1.

¹⁷Hearne, *Aerial Warfare*, xxix.

¹⁸*Ibid.*, 186-7.

tacks to specific targets.¹⁹ But it also showed that the advance of technology had made land warfare itself horrendously bloody, with artillery barrages, barbed wire and trench assaults. Gas was another element in the new warfare, but while many writers believed that it would simply add to the terror of the next war in the air, there were some who argued that it would in fact make war more humane. J. F. C. Fuller, in his 1923 tract on *The Reformation of War*, argued that new military technologies, from gunpowder on, nearly always humanised war even though they were reviled at the time. He believed that this was true of submarines and tanks, as well as of aeroplanes and gas, all of which debuted in the First World War.²⁰ The last two were key to Fuller's vision of a more humane warfare. He cited statistics compiled by the US Army to show that gas was twelve times less lethal than bombs or bullets. In fact, precisely because it could 'incapacitate without killing', gas was '*par excellence*, the weapon of demoralisation' since its victims survived to spread their terrifying stories to others.²¹ As for the aeroplane, its ability to strike directly at the enemy population and undermine its morale meant that it could end wars quickly, in days instead of years, and save many lives overall:

If a future war can be won at the cost of two or three thousand of the enemy's men, women and children killed, in place of over 1,000,000 men and incidentally several thousands of women and children, as was the case in France during the recent war, surely an aerial attack is a more humane method than the existing traditional type.²²

Others sometimes made similar arguments, most notably J. B. S. Haldane in *Callinicus*, published in 1925, where he argued that pacifists, moralists and military reactionaries were attempting to 'prevent the humanization of warfare' by attempting to ban gas weapons.²³ He held that 'the use of mus-

¹⁹See, e.g., Mark Connelly, *Reaching for the Stars: A New History of Bomber Command in World War II* (London and New York: I. B. Tauris, 2001), 32-3, 52, 54-5.

²⁰Fuller, *The Reformation of War*, 100.

²¹Ibid., 110-1.

²²Ibid., 150.

²³Haldane, *Callinicus*, 31-4.

tard gas in war on the largest possible scale would render it less expensive of life and property, shorter, and more dependent on brains rather than numbers', and this was true even when the possibility of gas attacks on cities was considered.²⁴ Liddell Hart used the notion that complexity was a weakness, usually applied to civilisation itself, to argue that air raids would be almost too successful in wreaking havoc and so would become self-limiting as the mutual destruction took its toll: 'modern air forces depend on a large ground organization, and this may hardly escape the prevailing chaos. Thus the air menace may be limited, if not crippled, at source – just when the menace would otherwise reach its peak'.²⁵

Disarmament

Disarmament was not a new idea.²⁶ Nineteenth century Radicals such as Richard Cobden and John Bright had advocated the unilateral retrenchment of the Royal Navy, largely to reduce its cost and hence the burden on taxpayers. But they never desired its abolition.²⁷ In the Edwardian period, their political heirs viewed the naval arms race between Britain and Germany as a potential cause of war. The idea of a 'naval holiday' – a mutual pause in dreadnought construction – was therefore proposed in 1912 by Winston Churchill, the First Lord of the Admiralty, in order to reduce both tension and expenditure.²⁸ After the First World War, disarmament was forced upon Germany as a punishment and a precaution, but also as a preliminary to a more general (but ultimately elusive) European disarmament.²⁹ The Washington Naval Conference in 1921-2 was the greatest success of the post-war disarmament movement; the World Disarmament Conference in 1932-4

²⁴Haldane, *Callinicus*, 52-62.

²⁵Liddell Hart, *Europe in Arms*, 340-1.

²⁶See, generally, David Cortright, *Peace: A History of Movements and Ideas* (Cambridge: Cambridge University Press, 2008), chapter 5.

²⁷See Semmel, *Liberalism and Naval Strategy*, chapter 5.

²⁸See Morris, *The Scaremongers*, 348-9.

²⁹See Richard J. Shuster, *German Disarmament After World War I: The Diplomacy of International Arms Inspection 1920-1931* (London and New York: Routledge, 2006), chapter 2.

its greatest failure.³⁰ Disarmament remained an ideal during the breakneck rearmament of the later 1930s, but never again seemed a realistic proposition until after the Second World War.

The idea of aerial disarmament was almost nonsensical before 1914, when air forces were tiny and mostly unarmed. Nor did it seem particularly important before the development of the theory of the knock-out blow, when airpower was seen as ancillary to military and naval operation, and incapable of independent action. The situation changed after 1918. Germany's total aerial disarmament set a precedent which various technical committees at Geneva laboured to turn into practical proposals for a general scheme. Air forces were now much larger, even after demobilisation, and much more expensive, adding to the incentive to find a way to reduce them. And the new supremacy of the bomber made its possible abolition or limitation very attractive. Indeed, so great was the danger of bombing believed to be that by the 1930s, aerial disarmament came to overshadow naval and military disarmament. Philip Noel Baker, at this time a professor of international relations at the University of London, thought that 'the limitation of aerial forces is probably the crux upon which the whole policy of disarmament will succeed or fail'.³¹ This was partly because of the ability of aircraft to affect the course of military and naval operations, but more because of their all but certain use against civilians: 'the most terrifying prospect which mankind has ever had to face'.³²

There were three major methods by which aerial disarmament might be accomplished: air forces could be limited in size; they could be eliminated entirely; or aviation itself could be abolished.

Limiting the size of air forces was a difficult proposition, since it presumed that the major powers could agree on some way to measure their respective airpower and then agree on cuts in their force levels.³³ Victor Lefebure, a chemical warfare expert, noted that industrial potential was also a problem,

³⁰See Carolyn J. Kitching, *Britain and the Problem of International Disarmament, 1919-34* (London and New York: Routledge, 1999), 43-58, 140-73.

³¹Noel Baker, *Disarmament*, 213.

³²*Ibid.*, 222.

³³But see p. 154.

for the First World War had shown that aircraft production could be undertaken on a large scale from a practically non-existent base.³⁴ And bombs themselves were becoming more powerful, meaning that a smaller number of aircraft could deliver the same, or greater, weight of bombs as their 1918 forebears.³⁵ The development of more lethal poison gases since the war posed a similarly acute problem.³⁶ And verification of any measures agreed to was not easy to ensure: Lord Thomson, a former Labour air minister, pointed out that the experiment with Germany's forced aerial disarmament was hardly encouraging in this regard, since evasion (on a small scale) was commonplace.³⁷ But complex as such issues were, they seemed at least soluble in the optimistic climate of the 1920s after Washington and Locarno, and with the World Disarmament Conference in prospect. The main problems were apparently technical, not political.

Noel Baker considered that the easiest way to limit the size of air forces was to impose restrictions on the size of their budgets and the number of their personnel.³⁸ Lefebure instead preferred a ban on the possession and production of bombs, since aircraft themselves were only delivery vehicles.³⁹ He later suggested that the easiest way to do this would be to bring the armaments factories under government control, even to the point of nationalisation.⁴⁰ But it was perhaps more common, and seemingly more straightforward, to suggest limitation of aircraft numbers. In 1935, Harold Balfour, a Conservative MP and former RFC fighter ace, proposed that the maximum number of fighters and bombers be limited. The total weight of aircraft possessed by an air force might also be limited, since this seemed to work well in the parallel process of naval arms limitation.⁴¹ But this was after the failure of the Disarmament Conference, and the open rearming of Germany. Disarmament no longer seemed to have a future. Pacifists like Helena Swanwick viewed

³⁴Victor Lefebure, *Scientific Disarmament* (London: Mundanus, 1931), 282-6.

³⁵*Ibid.*, 288-9.

³⁶Lefebure, *Common Sense about Disarmament*, 123.

³⁷Thomson, *Air Facts and Problems*, 173-4.

³⁸Noel Baker, *Disarmament*, 244.

³⁹Lefebure, *Scientific Disarmament*, 290.

⁴⁰Lefebure, *Common Sense about Disarmament*, 160.

⁴¹Balfour, 'The problem of air defence', 158-9.

such proposals as a distraction from the real necessity, war prevention: the only beneficiaries were ‘the Armament firms who will lie low and say nothing, but will chuckle at the prospect of the infinite prolongation of disarmament debate’.⁴²

The outright elimination of military aviation ostensibly had even less chance of success than limited disarmament, but it was proposed more often. Sir Norman Angell, the eminent Labour pacifist, wrote in 1934 that ‘the surest defence, of course, would be the abolition of air forces’.⁴³ Similarly, Jonathan Griffin believed that ‘the only way of saving our civilisation from the air menace is by the total abolition of all national air forces’.⁴⁴ Even Stanley Baldwin, in the course of explaining that the bomber would always get through, admitted ‘that if it were possible the air forces ought all to be abolished’.⁴⁵ The abolition of air forces was nearly always linked, however, with the internationalisation of civil aviation in some form: Angell, Griffin and Baldwin all did so, for example.⁴⁶ The reason for this was the presumed convertibility of civilian aircraft into bombers. This was a big enough problem as it was, since it unbalanced parity calculations.⁴⁷ But if air forces were negotiated away, then converted civilian aircraft would be the most powerful bombers in existence and would, furthermore, be unopposed by air defences. Spaight concluded that, paradoxically, ‘general disarmament may leave the great cities and the civil population exposed to greater dangers than ever before’.⁴⁸ As Lefebure noted, the danger of convertibility was why commercial aircraft were ‘The outstanding reason which has been advanced for retaining military aircraft’.⁴⁹ Senior politicians agreed: Anthony Eden, then Lord Privy Seal, remarked that ‘No Government could ever consent to abolish all military aircraft unless civil aviation could be by some method effectively

⁴²Swanwick, *New Wars for Old*, 42.

⁴³Angell, *The Menace to Our National Defence*, 59.

⁴⁴Griffin, *Britain's Air Policy*, 24.

⁴⁵HC Deb, 10 November 1932, vol. 270, col. 635; *The Times*, 11 November 1932, 8.

⁴⁶Baldwin called for control, which differed from full internationalisation in that while airlines were subject to the orders of an international body, their ownership remained in private or government hands.

⁴⁷See p. 154.

⁴⁸Spaight, *Pseudo-Security*, 121.

⁴⁹Lefebure, *Scientific Disarmament*, 289.

controlled'.⁵⁰ Proponents of the counter-offensive as Britain's best defence were quick to seize upon convertibility as a reason to oppose disarmament: in 1933, C. C. Turner, aviation correspondent for the *Daily Telegraph*, called proposals to limit the size or number of heavy bombers 'entirely futile', and bolstered his argument for parity by claiming that converted aircraft would 'have little chance against efficient Regular air forces'.⁵¹

Finally, the total abolition of all aviation, military and civil, was not a credible option. It is true that no less a figure than Air Chief Marshal Sir Hugh Trenchard publicly stated that all the good that civil aviation could do in peace would not balance the harm its military counterpart might do in war, and so, if it were up to him, he would 'Abolish the air'.⁵² But since Trenchard was then CAS, and spent most of his long tenure jealously guarding the RAF's independence, his proposal can hardly be taken at face value.⁵³ And few ventured similar opinions, even among pacifists. As Noel Baker pointed out, although total abolition would completely remove the danger of bombing, 'it is quite certain that no proposal to abolish aviation would be agreed to by the Government of any considerable power'.⁵⁴ For all its risks, the conquest of the air promised untold benefits for civilisation and could not be abandoned altogether.

Collective security

Collective security was the great hope of the interwar era. If the Great War was to be the War to End All Wars, then most Britons believed that the active co-operation – diplomatic and military – of peace-loving nations which

⁵⁰ *Observer*, 29 July 1934; quoted in Noel Baker, 'The International Air Police Force', 207. The Cunliffe-Lister plan for the international control of civil aviation, put to Cabinet in February 1933, was intended to answer this objection and so clear the way for a convention banning military aviation. It was rejected because it did not seem to provide adequate safeguards against conversion, and because it would have placed British aviation companies at a relative disadvantage. See Bialer, *The Shadow of the Bomber*, 36-7.

⁵¹ Turner, *Britain's Air Peril*, 122-3.

⁵² 'Air defence', *The Times*, 30 April 1925, 13.

⁵³ See Andrew Boyle, *Trenchard* (London: Collins, 1962), 532-3.

⁵⁴ Noel Baker, *Disarmament*, 224.

have to be used to prevent war, or if that proved impossible, to end any war quickly, humanely, and justly. The famous Peace Ballot of 1934-5, though not in any way binding, yielded millions of votes in favour of collective security: nearly seven million Britons were in favour of multilateral military measures to stop a war, for example, with only two million against.⁵⁵ The League of Nations was the primary embodiment of these hopes, particularly through its Covenant which provided for collective economic or military action against aggressor nations. Although mistrusted by much of the Conservative Party, it was strongly supported by Labour, the Liberals and a wide cross-section of British society.⁵⁶ The League of Nations Union (LNU), founded in 1918 to promote the League idea, reached a peak membership of some 400,000 in 1931.⁵⁷ There were other causes for optimism, especially the Locarno Treaties of 1925, particularly the mutual non-aggression and assistance pact signed between Germany, France and Belgium, with Italy and Britain as guarantors; and the Kellogg-Briand Pact of 1928, by which many nations, including Britain and Germany, renounced war as an instrument of national policy.⁵⁸

Collective security was favoured by liberal internationalists and many peace advocates, who saw it as the best hope for preventing war.⁵⁹ But collective security could also be invoked as a reason for aerial rearmament. In 1934, when faith in collective security was at its peak, P. R. C. Groves argued that any attempt by Britain to carry out its obligations under the League Covenant or Locarno would be impossible because of its aerial weakness:

if the aggressor were a first-class air power within aircraft range of this country. For in such circumstances any attempt by us at armed intervention, or even any action which the aggressor might regard as hostile, would render us liable to a knock-out blow from

⁵⁵See Martin Ceadel, 'The first British referendum: the Peace Ballot, 1934-5', *English Historical Review* 95 (1980), 828 and p. 208.

⁵⁶See R. B. McCallum, *Public Opinion and the Last Peace* (London, New York and Toronto: Oxford University Press, 1944), 138-40.

⁵⁷See Donald S. Birn, *The League of Nations Union 1918-1945* (Oxford: Clarendon Press, 1981), 130.

⁵⁸See Steiner, *The Lights that Failed*, 395-7, 572-3.

⁵⁹See, e.g., the essays collected in *Challenge to Death* (London: Constable & Co., 1934).

the skies.⁶⁰

Groves was no pacifist. Later he bemoaned the ‘sacrifice of the flower of a generation’ at the Somme and Passchendaele, which led to a ‘loss of a leavening virile influence in our national life’ and a consequent rise in the influence of feminists, clerics and other idealists who championed disarmament. Yet he proclaimed that ‘There is but one way to peace, and it lies through justice established and maintained by collective responsibility’.⁶¹ At the end of the 1930s, Basil Liddell Hart thought that collective security was simply a suitably modernised version of Britain’s traditional strategy of limited liability, so long as funding was diverted from the Army to the RAF, for defence against a knock-out blow (and the Navy, for defence of the sea lanes).⁶² Collective security was not merely the province of pacifists.

But whether the League of Nations – let alone any nebulous ‘Locarno spirit’ – had the power to prevent a knock-out blow from taking place was far from clear. Some writers, like Sir Malcolm Campbell, a staunch conservative, believed that collective security was a mirage and that reliance on the League made Britain weaker, not stronger. He preferred that Britain look to its own defences.⁶³ But there were also more fundamental concerns about even the possibility of collective security in the aerial age. A key provision of the Covenant was that any disputes between nations would first be subject to arbitration by the League or one of its instruments, which would take at least nine months to adjudicate.⁶⁴ The rationale was that this would allow time for public opinion – presumed to be pacific – to have a moderating effect, for other powers to objectively determine which of the involved parties had the better claim, and to isolate the potential aggressor from its allies.⁶⁵ But the Covenant was adopted in 1919, before the knock-out blow theory had fully taken hold, and was predicated on the assumption that the next war

⁶⁰Groves, *Behind the Smoke Screen*, 23.

⁶¹*Ibid.*, 308.

⁶²Liddell Hart, *The Defence of Britain*, 47-50.

⁶³Campbell, *The Peril from the Air*, 23-5.

⁶⁴See Steiner, *The Lights that Failed*, 42-3.

⁶⁵This arbitration period was a feature of the earliest proposals for a league: see, e.g., H. N. Brailsford, ‘The organization of peace’, in: Charles Roden Buxton, editor, *Towards a Lasting Settlement* (London: George Allen & Unwin, 1915), 158-62.

would begin, much like the last one, with an unfolding diplomatic crisis. The problem now was the speed with which a fatal aerial bombardment could be delivered and take effect, much faster than the diplomatic machinery of the League could swing into action. In a 1920 lecture, Colonel Louis Jackson doubted that the provisions of the Covenant could do anything other than slow the rush to war.⁶⁶ J. M. Spaight was even more pessimistic in his 1928 book, *Pseudo-security*. His central argument was that ‘the coming of air power has made the successful working of any system of world peace guaranteed and enforced by a league a sheer impossibility’.⁶⁷ It was the speed of airpower that was the problem: ‘Economic pressure at the very best needs time to make itself felt, and it is just time that will be on the side of an aggressor who has air power at his call’.⁶⁸ Sir Edward Grigg, a Conservative MP, wrote a decade later that just as the RAF’s own fighters would be unable to prevent bombers from getting through to London, ‘Whatever the number and quality of our partners in collective security, they would be equally powerless to prevent the bombardment of Britain from the air’.⁶⁹ Collective security, as conventionally envisaged, did not provide a solution to the problem of the knock-out blow.

Proposals were made to rescue the cherished ideal of collective security from the threat of the bomber by adapting the existing machinery to the realities of airpower. The so-called ‘air Locarno’, or Western air pact, was the focus of most such efforts.⁷⁰ The signatories to an air pact – generally the Locarno powers: France, Germany, Britain, Italy and Belgium – would agree that if any of them launched an air attack on any of the others, the remaining powers would instantly and automatically use their own air forces to defend the power under assault. In 1928, Spaight proposed a ‘zoning’ system, similar to the Locarno pact. He claimed that this would have advantages over League-based collective security: ‘Such a system, being based on a solidarity

⁶⁶Louis Jackson, ‘Possibilities of the next war’, *Journal of the Royal United Service Institution* 65 (February 1920), 73.

⁶⁷Spaight, *Pseudo-Security*, 100.

⁶⁸*Ibid.*, 124-5.

⁶⁹Grigg, *Britain Looks at Germany*, 77.

⁷⁰See p. 180.

of interests, narrowly localised in scope, limited to certain foreseen and calculable commitments, affords some reasonable assurance that the promised help will be forthcoming and forthcoming in time'.⁷¹ He again suggested 'local pacts of the Locarno type' in 1932. The main advantage was that it would be in each pact member's self-interest to maintain peace, whereas with the League there was the danger of making 'vague international sentiment the spring of action'.⁷² The idea of an aerial version of the Locarno pact became more widespread after February 1935 when Britain and France publicly proposed an air convention to the other Locarno powers, largely in order to manage Germany's imminent aerial rearmament. Hitler initially seemed favourably disposed, but no agreement was ever reached.⁷³ It found some favour among airpower writers, but mainly as a prelude to disarmament or an international air force, as Robert and Barbara Donington suggested in 1936.⁷⁴ However, Jonathan Griffin, who shared the Doningtons' ultimate aims, derided the idea as a 'Hot Air Locarno'. In his view, since air defence was impossible, all an air Locarno would achieve would be to spread the devastation over a wider area: 'The problem is to make collective security reliable; it will not be solved by making attack more destructive'. And, so far from encouraging disarmament and internationalisation, Griffin pointed out that an air pact required strong national air forces to be effective.⁷⁵

Internationalisation

The international control of aviation was the most radical response to the threat of the knock-out blow. It encompassed two distinct, but usually linked, proposals: the internationalisation of civil aviation, and the internationalisation of military aviation, usually referred to as the international air force. It can be considered a form of collective security, except that it involved a

⁷¹Spaight, *Pseudo-Security*, 126.

⁷²J. M. Spaight, *An International Air Force* (London: Gale & Polden, n.d. [1932]), 22.

⁷³See Bialer, *The Shadow of the Bomber*, chapter 3; Smith, *British Air Strategy between the Wars*, 148-51.

⁷⁴Donington and Donington, *The Citizen Faces War*, 273.

⁷⁵Griffin, *Britain's Air Policy*, 180-1.

pooling of sovereignty, and consequently the relinquishing of command over at least a portion, and perhaps all, of a national air force to a supranational organisation, probably the League of Nations. Indeed, it was sometimes welcomed – or feared – as the beginnings of a European or world state.⁷⁶ It was usually invoked as a step in the process of total disarmament, often alongside the establishment of an international tribunal for the impartial adjudication of disputes. The international air force was sometimes termed a police force, since it was meant to enforce international law fairly and impartially, in analogous fashion to a civil police force.⁷⁷ At its root was the belief that the power of the aeroplane could be used to preserve peace, or at least enforce it, but also that the speed of the aeroplane meant that a standing force was required in order to react instantly to any attack.⁷⁸

Proposals for some form of international military or naval force to preserve or enforce peace long predated the coming of aviation.⁷⁹ Early aircraft were not sufficiently powerful for such a role, but their potential range and speed prompted some fictional speculation about international air forces. A novel published in 1910, J. L. J. Carter's *Peggy the Aeronaut*, included a fictitious newspaper article which supposed that the nations would one day see that 'the piling up of aerial fleet against aerial fleet was just as mad a business as was the old-time race in the building of warships', and so a consensus would form for an 'international parliament' with 'order preserved by some system of police, just as effectively as empires and nations, counties and cities, rural districts and parishes, are regulated to-day'.⁸⁰ The aerial nature of this police force is no more than implied by the stated superiority of aircraft over older weapons in the novel's plot. It is much clearer in a short story published by Rudyard Kipling in 1912, 'As easy as A.B.C.' This is set in 2150, when

⁷⁶On early European federalism, see Carl H. Pegg, *Evolution of the European Idea, 1914-1932* (Chapel Hill and London: University of North Carolina Press, 1983).

⁷⁷The more general term was 'international police force', encompassing military, naval and aerial forces, but the international air force received by far the most attention.

⁷⁸On the international air force concept generally, see Roger Beaumont, *Right Backed by Might: The International Air Force Concept* (Westport and London: Praeger, 2001). See also Edgerton, *England and the Aeroplane*, 41.

⁷⁹See Spaight, *An International Air Force*, 29-31; also Beaumont, *Right Backed by Might*, 1-11.

⁸⁰J. L. J. Carter, *Peggy the Aeronaut* (London: Everett & Co., 1910), 117.

the world is ruled by an authoritarian Aerial Board of Control, which has a monopoly on aviation and hence force: 'Transportation is Civilisation. Democracy is Disease'.⁸¹ Kipling's story was widely read.⁸² But during the First World War, most proponents of an international police force thought in terms of armies and navies, not air forces.⁸³

The idea of an international air force began to receive more serious consideration shortly after the First World War. The very end of that conflict had witnessed the birth of an Inter-Allied Independent Force, composed of bomber squadrons from Britain, France, Italy and the United States. It was formed too late to see action, but did set a precedent of sorts.⁸⁴ There was some discussion before and during the peace negotiations at Paris in 1919 of giving the proposed League of Nations its own military arm, but nothing came of it.⁸⁵ Instead, the Covenant of the League provided for joint military action with participation at the discretion of each member state, a mechanism of limited usefulness and one which was never used. Nor was British parliamentary opinion much interested in the possibility of an international air force in the immediate postwar period.⁸⁶ But the idea began to gain ground, nevertheless. A stepping stone was a variant of the air pact idea, proposed in 1922 by Lord Robert Cecil, a Conservative politician who was intimately involved in the creation of the League. While acting as South Africa's representative to the General Assembly of the League, he proposed a mutual guarantee of defence between signatories to be enforced by each

⁸¹Kipling, 'As easy as A.B.C.', 164.

⁸²Interestingly, Kipling was a close friend of both Frederick Sykes and William Joynson-Hicks, although neither displayed much interest in an international air force in their published writing about airpower. See Michael Paris, 'The rise of the airmen: the origins of air force elitism, c. 1890-1918', *Journal of Contemporary History* 28 (1993), 127.

⁸³Much of the impetus came from the League to Enforce Peace, founded in the United States in 1915: see Beaumont, *Right Backed by Might*, 12-3. But similar suggestions were made in Britain: see, e.g., L. S. Woolf, *International Government: Two Reports* (London: Fabian Society and George Allen & Unwin, 1916), 253-7.

⁸⁴On the Inter-Allied Independent Force, see Ash, *Sir Frederick Sykes*, 159-62.

⁸⁵See, e.g., the official and unofficial proposals from various nations summarised in David Davies, *The Problem of the Twentieth Century: A Study in International Relationships* (London: Ernest Benn, 1930), 726-35.

⁸⁶See David Carlton, 'The problem of civil aviation in British air disarmament policy, 1919-1934', *Journal of the Royal United Service Institution* 111 (1966), 309.

nation's air force, and providing for the 'ear-marking [of] considerable numbers of airoplanes [sic] from all the Members of the league to be ready to crush anyone who ventured on a sudden air attack'.⁸⁷ Perhaps surprisingly, since he was the apostle of parity, P. R. C. Groves thought this the 'most promising' suggestion made yet by any League member, steering a middle course as it did between disarmament and a League military force.⁸⁸ In fact, Groves himself had suggested this idea at the first General Assembly in 1920, to no avail: a failure he later blamed for the emasculation of the League.⁸⁹

Interest in the international air force idea increased in the late 1920s, following the failure of two major diplomatic initiatives to give the League teeth, the Draft Treaty of Mutual Assistance in 1923 and the Geneva Protocol in 1924.⁹⁰ Winston Churchill, for one, speculated in the final volume of his widely-read history of the First World War that an opportunity had been missed when the Covenant had been drawn up to include the principle that 'the power of the air should be reserved to the League of Nations for the purpose of maintaining world peace against aggression'.⁹¹ More detailed schemes were already being circulated, however. In 1927, Philip Noel Baker proposed a system of mutual guarantees based upon contingents from national air forces, much like Cecil's system, but with the addition of 'skeleton bases and depôts for the use of foreign air units which might lend their help' to nations under threat.⁹² This was a step in the direction of a formal organisation with its own aerodromes and personnel. A more fully-fledged international air force proposal – perhaps the first – appeared that same year in a book by William McDougall, an academic psychologist who happened

⁸⁷Robert Cecil to Jan Smuts, 6 October 1922; quoted in Carlton, 'The problem of civil aviation', 309.

⁸⁸P. R. C. Groves, 'Air power and disarmament', *The Times*, 18 September 1922, 11.

⁸⁹Groves, *Behind the Smoke Screen*, 314-5. Groves had been peripherally involved with the Inter-Allied Independent Force in 1918, and in 1919 had attempted to preserve it as a tool to coerce a recalcitrant Germany: P. R. C. Groves to H. M. Trenchard, 4 December 1919, 3(c), Groves papers, Liddell Hart Centre for Military Archives, Kings College London (KCL).

⁹⁰See Steiner, *The Lights that Failed*, 379-82.

⁹¹Winston S. Churchill, *The World Crisis: The Aftermath* (London: Thornton Butterworth, 1929), 27.

⁹²Noel Baker, *Disarmament*, 242.

to be an influential theorist of the behaviour of crowds in disasters.⁹³ He maintained that, given the disbanding of national air forces, ‘a comparatively small international air-force, stationed at a few well-chosen centres, could serve effectively as the International Police which is required to render International Law and to assure International Justice’. Possessing ‘force overwhelming and shattering’, such an international air force could ‘guarantee all nations against sudden aggression’, and also ‘protect civilization against the attacks of barbaric hordes’.

The institution of such an international air-force might, then, well lead to general abandonment of national armaments, and might initiate an era of universal peace. For, given the condition that the International air-force were the only one in existence, resistance to it would be hopeless, and no nation would attempt it.⁹⁴

In McDougall’s view, the international air force would be used to maintain the status quo while disputes between nations were arbitrated by the International Court of Justice; a breach of the peace by any party would lead the Court to ‘immediately direct against it sufficient police-force to secure its submission’.⁹⁵

The philanthropist and former Liberal MP David Davies, one of the founders of the LNU, was Britain’s most persistent advocate of an international air force.⁹⁶ His book, *The Problem of the Twentieth Century*, published in 1930 and revised in 1934, was the standard text on the subject.⁹⁷ Although there was some sentiment within the LNU for giving the League its own military arm, in 1932 Davies decided to set up an entirely new organ-

⁹³See Bourke, *Fear*, 65-7.

⁹⁴William McDougall, *Janus: The Conquest of War* (London: Kegan Paul, Trench, Trubner & Co., n.d. [1927]), 126-7.

⁹⁵*Ibid.*, 131.

⁹⁶See Michael C. Pugh, ‘An international police force: Lord Davies and the British debate in the 1930s’, *International Relations* 9 (1988), 335-51; Michael Pugh, ‘Policing the world: Lord Davies and the quest for order in the 1930s’, *International Relations* 16 (2002), 97-115.

⁹⁷Davies, *The Problem of the Twentieth Century*.

isation to promote an international police force, the New Commonwealth.⁹⁸ In *The Problem of the Twentieth Century*, Davies advised that although ‘in course of time the chariots of the air will play a decisive part in the service of the international authority’, they were not yet ready for this role and so an international police force should not, in the first instance, rely upon airpower alone.⁹⁹ But in practice the publications of the New Commonwealth focused almost exclusively on the international air force, including a comprehensive scheme presented to the International Congress in Defence of Peace at Brussels in 1934.¹⁰⁰ In *Force and the Future*, for example, also published in 1934, Davies claimed that the power of the bomber was already irresistible: ‘To-day, however, a nation with undisputed mastery of the air could annihilate with ease every living person in a hostile country with the minimum of exertion and loss to itself’.¹⁰¹ Although he rejected reprisal bombing as an effective deterrent, like Noel Baker Davies hoped that in its internationalised form the aeroplane was itself the solution to the dilemma it had posed. He laid down five principles which should underpin any international police force. First, that it should be superior in both numbers and armament to any possible enemy, including rogue member states or states from outside the League, such as the United States and the Soviet Union.¹⁰² Second, that it would have no power to intervene in the domestic affairs of any League state.¹⁰³ Third, that protection would only be afforded to those League states which contributed to the force, to avoid the danger of moral hazard.¹⁰⁴ Fourth, that there must be unity of command over the force, exercised by the League.¹⁰⁵ And fifth, that the force should ‘embrace all the instruments of coercion, military, naval and aerial, within its circle’, to ensure that all nations played their part in both disarmament and policing,

⁹⁸See Birn, *The League of Nations Union*, 117-8.

⁹⁹Davies, *The Problem of the Twentieth Century*, 367-8.

¹⁰⁰*An International Air Force: Its Functions and Organisation* (London: The New Commonwealth, 1934).

¹⁰¹Davies, *Force and the Future*, 9.

¹⁰²Davies, *The Problem of the Twentieth Century*, 361-3.

¹⁰³*Ibid.*, 363.

¹⁰⁴*Ibid.*, 363-4.

¹⁰⁵*Ibid.*, 364-6.

and that one country was not forced to give up its large navy while another kept its large army.¹⁰⁶ This was to be truly collective security.

By the 1930s, the internationalisation of military aviation was almost always linked to the internationalisation of civil aviation. The perceived need for this arose from the presumed convertibility of civilian aircraft to military use.¹⁰⁷ This was an idea perhaps even more novel than the international air force, which at least had some precedent in military alliances of wars past – as Philip Mumford noted, ‘practically every major war in history has been fought with armies of mixed nationalities’¹⁰⁸ – and it took correspondingly longer to emerge. So while McDougall favoured an international air force, his solution for the problem of airliners was simply that all nations should agree to limit their speed to 100 miles per hour, ‘ample for all commercial purposes’, but inadequate for military ones.¹⁰⁹ But in the following decade, such technical solutions had little appeal for those worried about the convertibility danger.¹¹⁰ The French plan for an international air force presented to the World Disarmament Conference in 1932 instead proposed that ‘Civil aviation shall be internationalised’, that is, owned and controlled by an international body which would prevent its aircraft from being turned into bombers for use in a war of aggression.¹¹¹ This became a popular idea, and, just as with the international air force, a number of alternative schemes were proposed. One which received some attention was authored by a committee of which Jonathan Griffin, editor of *Essential News*, was the secretary. As summarised in his 1935 book, *Britain’s Air Policy*, the committee envisaged the creation of an International Directorate of Aviation (IDA), composed of the transport ministers of those nations party to the World Disarmament

¹⁰⁶Davies, *The Problem of the Twentieth Century*, 367-8.

¹⁰⁷See p. 154.

¹⁰⁸Mumford, *Humanity, Air Power and War*, 163.

¹⁰⁹McDougall, *Janus*, 129.

¹¹⁰One exception was the idea of John Moore-Brabazon, a Conservative MP and holder of the first British pilot’s licence, of compelling civil aircraft to switch to heavy oil (i.e. diesel), which would so impair their performance (excepting range) that they would be easy prey for military aircraft. *The New Commonwealth*, January 1934; quoted in *An International Air Force*, 37-8. See also Davy, *Air Power and Civilization*, 187, who thought it sufficient to limit the maximum speed of civil aircraft.

¹¹¹Davies, *Suicide or Sanity?*, 12.

Conference. IDA would administer a corporation, World Airways, with ‘exclusive ownership of all present and future aircraft and aerodromes, together with spare-parts and ground equipment’.¹¹² The personnel of World Airways would be drawn from all over the world, with no more than 10% from any one country.¹¹³ Stock would be sold to the public through post offices, much like war bonds. Since World Airways would be prohibited from insuring its aircraft and aerodromes against war losses, it was hoped that this would mean that ‘The man in the street would be financially interested in the prevention even of wars not involving his country directly’.¹¹⁴ World Airways would itself monopolise the major air routes, but at IDA’s discretion could authorise private companies to manage subsidiary routes. No subsidies would be paid by governments except to World Airways itself, however.¹¹⁵ In a crisis, World Airways could be withdrawn from any of the nations involved. In wartime, a two-thirds majority of the signatories to the Disarmament Conference, including the members of the League Council but excluding any countries at war, could ‘order the use of the world’s civil aviation for military sanctions against a country declared by them guilty of aggression’ – in effect, as an extemporised international air force.¹¹⁶ According to Griffin, in order to prevent ‘a catastrophe which would destroy civilisation’, the only alternatives were ‘either international ownership of civil aviation, or a powerful international air force’.¹¹⁷ Indeed, the more internationalised civil aviation became, the more secure it would be, and the less need for internationalised military aviation; and vice versa.¹¹⁸ But it was more usual for both concepts to be advocated in parallel, with the international air force as insurance against the subversion of internationalised civil aviation by a rogue state.

The idea of an international air force spread widely in the early- and mid-1930s. The time seemed right to reopen the question of a League police force, with the spirit of Locarno calming relations, the worldwide economic crisis

¹¹²Griffin, *Britain’s Air Policy*, 31.

¹¹³Ibid., 32.

¹¹⁴Ibid., 33.

¹¹⁵Ibid., 34-5.

¹¹⁶Ibid., 36.

¹¹⁷Ibid., 29.

¹¹⁸Ibid., 103.

suppressing military spending, and the Disarmament Conference providing a fresh opportunity for debate and negotiation. A torrent of ideas and proposals poured forth. Several governments, including those of France and Spain, submitted plans for an international air force or the internationalisation of civil aviation for consideration by the Disarmament Conference in 1932 and 1933.¹¹⁹ Variants of the international air force concept featured in a number of novels, including H. G. Wells' *The Shape of Things to Come*, Michael Arlen's *Man's Mortality*; Brian Tunstall's *Eagles Restrained*.¹²⁰ Such a force was favoured by prominent left-wing and liberal internationalists, such as Angell and Noel Baker.¹²¹ The National Liberal Federation proposed 'international regulation or control over all civil aviation, so as to prevent the sudden transformation of civil into military aircraft', and thought that an international police force may one day be 'desirable'.¹²² Similarly, the Next Five Years Group, a Liberal-dominated centrist group, urged the government to 'consider without prejudice' the formation of 'an international air force with the limited function of preventing misuse of civil aircraft'.¹²³ Labour went further, promising in its 1935 manifesto to 'propose to other nations the complete abolition of all national air forces, the effective international control of civil aviation and the creation of an international air police force'.¹²⁴ Griffin disclaimed any political affiliation, but he was so incensed at the National Government's refusal to commit to the internationalisation of aviation – while

¹¹⁹See Mumford, *Humanity, Air Power and War*, chapter 8; also Beaumont, *Right Backed by Might*, 46-9.

¹²⁰Wells, *The Shape of Things to Come*; Michael Arlen, *Man's Mortality: A Story* (London: William Heinemann, 1933); Brian Tunstall, *Eagles Restrained* (London: George Allen & Unwin, 1936).

¹²¹Angell, *The Menace to Our National Defence*; Noel Baker, 'The International Air Police Force'.

¹²²*The Liberal Way: A Survey of Liberal Policy, Published by the Authority of the National Liberal Federation* (London: George Allen & Unwin, 1934), 41.

¹²³*The Next Five Years: An Essay in Political Agreement* (London: Macmillan and Co., 1935), 296. The Next Five Years Group comprised well over a hundred members, including such supporters of an international air force as Angell, Cecil, Griffin, Mumford and Wells. On the predominantly Liberal makeup of the group, see Michael Freedon, *Liberalism Divided: A Study in British Political Thought 1914-1939* (Oxford: Clarendon Press, 1986), 360-3.

¹²⁴In Iain Dale, editor, *Labour Party General Election Manifestos, 1900-1997* (London: Routledge, 2000), 46.

simultaneously and falsely claiming that other nations would not accept it – that he called on his readers to make every effort ‘to get a Government of the Left in Great Britain, such that it will use all the prestige of Great Britain to create permanent peace in the air’.¹²⁵ The Fabian economist G. D. H. Cole’s call for a popular front included support for ‘the creation of an international armed force – especially an air force – internationally recruited and under international command’ (although, ever the Fabian, he doubted that it was ‘practicable at the initial stage’).¹²⁶ But the international air force was not merely a liberal or left-wing cause. The conservative *Spectator* discussed it favourably on a number of occasions.¹²⁷ In 1936, Churchill became president of the British section of the New Commonwealth.¹²⁸ The non-partisan LNU formally adopted a version of the international air force in November 1934.¹²⁹ And MPs from all the major parties introduced bills in Parliament supporting the internationalisation of aviation.¹³⁰ For many people across the political spectrum, internationalisation appeared to be the best hope for giving collective security real meaning.

A number of different plans for an international air force were put forward in Britain during the 1930s. The most influential, perhaps, was published by Noel Baker in 1934.¹³¹ He favoured the formation of ‘one single homogenous corps, recruited, organised, equipped, armed and paid by an international authority, the League of Nations, and owing allegiance to the League alone’.¹³² In the first instance it would confine its operations to Europe, where the danger of bombing was acute.¹³³ Its chief of staff would have to be from one of the smaller nations, perhaps Sweden or the Netherlands, as the major powers would not trust somebody from one of their potential rivals. The personnel would, of course, be recruited from all over Europe, probably on a

¹²⁵Griffin, *Britain’s Air Policy*, 183.

¹²⁶G. D. H. Cole, *The People’s Front* (London: Victor Gollancz Ltd, 1937), 172.

¹²⁷See, e.g., ‘Great Britain and the air’, *Spectator*, 27 July 1934, 120.

¹²⁸See Birn, *The League of Nations Union*, 171.

¹²⁹See Mumford, *Humanity, Air Power and War*, 168-79.

¹³⁰See Beaumont, *Right Backed by Might*, 49.

¹³¹For example, it was summarised in Griffin, *Britain’s Air Policy*, 106-17.

¹³²Noel Baker, ‘The International Air Police Force’, 214.

¹³³*Ibid.*, 215.

quota basis, with excellent salaries and pensions to attract ‘the finest type of men’.¹³⁴ The official languages of the international air force would be English and French, as with the League itself.¹³⁵ The question of where it should be based was more complicated. Noel Baker’s suggestion was that the air force ‘must be ready to take action in any part of Europe’, and therefore needed a number of permanent aerodromes across the continent:

These bases must be situated in the smaller countries, where there will be no fear that a powerful government will seize them and use the League’s material for aggression against a weaker State. Sweden, Spain, perhaps Austria, perhaps Switzerland and Greece seem by their geographical position to be the countries where bases could most usefully be placed.¹³⁶

The aerodromes needed to be able to withstand a possible knock-out blow from an aggressor’s converted civilian aircraft, as far as was possible: bomb-proof and gas-proof underground hangars, with large reserves of parts, fuel and ammunition, defended by anti-aircraft guns and searchlights.¹³⁷ The international air force would also need mobile ground support and air defence units, so that it could redeploy across Europe as needed.¹³⁸ As for its aircraft, they needed to be of the highest quality:

its machines must be faster, have a higher ceiling, a better climb, a longer range, fewer ‘blind spots,’ a greater power of swift manoeuvre; they must be better armed, and, if it be consistent with these other qualities, better protected against attack – especially machine-gun fire – than the most efficient civil aircraft which they may have to meet.¹³⁹

In order to minimise the risk of an aggressor destroying all or most of the air force’s sources of supply, it should obtain its aircraft – built to its own

¹³⁴Noel Baker, ‘The International Air Police Force’, 216.

¹³⁵Ibid., 217.

¹³⁶Ibid., 218.

¹³⁷Ibid., 219.

¹³⁸Ibid., 220.

¹³⁹Ibid., 221.

specifications – from countries spread around the world.¹⁴⁰ All of this would be expensive, but still cheaper overall than the present competition in armaments. Noel Baker suggested that a thousand aircraft would suffice to police Europe, at least at first; this would cost no more than £20 million per annum – a fifth of the total European expenditure on national air forces. The cost would be apportioned among member states according to the same formula used to calculate contributions to the League’s budget, the *barême*.¹⁴¹

Noel Baker also considered the functions of the international air force. In peacetime, it would help enforce the disarmament agreement which would accompany the creation of the international air force. This could be accomplished through providing the disarmament commission with transport and expertise.¹⁴² More importantly, detachments of the air force should be stationed at aerodromes across Europe, to keep watch for the possible conversion of civilian aircraft. Such detachments ‘might thus constitute a serious guarantee against aggression’.¹⁴³ In a period of international crisis, when a major war threatened to erupt, the international air force could be used to monitor any troop movements, ferry in international observers and negotiators, or enforce a demilitarised zone.¹⁴⁴ It might even deter any aggression by a simple show of force: ‘its mere presence on the scene when a serious dispute arose, would in itself be a powerful guarantee that war would not occur’.¹⁴⁵ But if war did come, then the international air force would be required to fight. Noel Baker was adamant that it should only provide air defence, and not engage in counter-bombing:

The bombing of civil populations, the destruction of great cities, however grave the provocation of the aggressor, could only embitter the quarrel between his people and the outside world. The International Air Police Force should consist, therefore, of high-

¹⁴⁰Noel Baker, ‘The International Air Police Force’, 222.

¹⁴¹Ibid., 223-4.

¹⁴²Noel Baker presumably had in mind something like the Allied Commissions of Control which monitored German disarmament after 1919. See Shuster, *German Disarmament After World War I*.

¹⁴³Noel Baker, ‘The International Air Police Force’, 226.

¹⁴⁴Ibid., 229-30.

¹⁴⁵Ibid., 230.

performance fighting or ‘interceptor’ craft, and *not* of bombing planes.¹⁴⁶

It may seem counter-intuitive that Noel Baker expected the international air force to be effective without the power of the knock-out blow at its disposal, especially since he shared the widespread disdain for the possibility of air defence.¹⁴⁷ The reason for this, as he was at pains to point out, is that after the general disbandment of national air forces, the only aircraft it might possibly have to fight would have been converted from civilian use, which would be greatly inferior to the specialised machines of the international air force.¹⁴⁸ But if the ersatz bombers managed to get through after all, and the aggressor:

continued his air bombardments in spite of every warning that reprisals would be made, then no doubt the League of Nations would decide to mobilise the civil aircraft of the outside world to bombard *his* cities until he stopped. This would be a desperate measure, undertaken in the last resort when all else had failed to stop the massacre of the innocent citizens of the victim State.¹⁴⁹

The international air force’s only role in this case would be to escort the League’s converted civilian aircraft. Noel Baker doubted that it would come to this: the international air force would itself deter attack, or at least destroy any aerodromes used to launch an attack, thus preventing further air raids.¹⁵⁰ This was, in fact, ‘the International Air Police Force’s strongest weapon’: against undefended aerodromes, it would be almost certainly and immediately decisive in disarming the aggressor.¹⁵¹

Some of the other plans for an international air force were just as detailed as Noel Baker’s. Others were just sketches, such as that given in

¹⁴⁶Noel Baker, ‘The International Air Police Force’, 231; emphasis in original.

¹⁴⁷Noel Baker, ‘A national air force no defence’, 196-203.

¹⁴⁸Noel Baker, ‘The International Air Police Force’, 234-5.

¹⁴⁹Ibid., 231; emphasis in original.

¹⁵⁰Ibid., 231-2. Noel Baker’s reliance on convertibility to provide a striking force is reminiscent of Groves’ proposals in 1922: see p. 155.

¹⁵¹Ibid., 236.

1934 by Clement Attlee, then deputy leader of the Labour Party.¹⁵² Some of the differences were trivial: L. E. O. Charlton, the international air force's staunchest defender in the late 1930s, chose the French colony Tunis for its main base, as it was within bomber range of most potential aggressors; the New Commonwealth settled on the easily-defensible British mandate of Palestine.¹⁵³ A more important question was which potential enemies should be defended against. Rogue members of the League itself would presumably be disarmed, or nearly so, and could be dealt with by a relatively small, lightly armed force. But by 1937, Charlton thought it unlikely that Germany or Italy would now join an international air force. He therefore proposed that a superiority in strength of one third over the largest national air force still in existence would be required, meaning some 3000 aircraft.¹⁵⁴ At the other end of the scale, Attlee thought that the role of air control could be internationalised as well, making the international air force responsible for 'preserving order in unquiet areas on the borders of civilisation', as the RAF was already doing in Iraq and Waziristan.¹⁵⁵ Some writers, such as Squadron Leader R. E. G. Fulljames, favoured an air force formed from separate contingents from each nation, since this minimised the infringement of sovereignty and so seemed politically feasible.¹⁵⁶ Most, however, agreed with Charlton, who insisted that the only way to foster a truly international spirit was with units composed of men from all nationalities.¹⁵⁷

Most serious of all was the confusion over precisely how an international air force was to be used. Mumford noted the existence of two schools of thought. One favoured 'an Interceptor Force, i.e. a force that must confine its activities to interception or prevention of any air raids that might be attempted by the misuse of civil aviation', such as Noel Baker advocated, and the other 'wished the Air Police to be for general support and protection of the Covenant of the League of Nations', that is for counter-attacks as well as

¹⁵²C. R. Attlee, *An International Police Force* (London: The New Commonwealth, 1934).

¹⁵³Charlton, *The Menace of the Clouds*, 258-60; *An International Air Force*, 54-5.

¹⁵⁴Charlton, *The Menace of the Clouds*, 269.

¹⁵⁵Attlee, *An International Police Force*, 7.

¹⁵⁶R. E. G. Fulljames, 'An international air police force', *Royal Air Force Quarterly* 6 (July 1935), 246.

¹⁵⁷Charlton, *The Menace of the Clouds*, 278-9.

air defence.¹⁵⁸ Mumford himself favoured the latter, since an interceptor force would inevitably be drawn into attacks on military targets anyway.¹⁵⁹ But even then, he ruled out the use of an international air force against civilians, based on ‘considerations of humanity’.¹⁶⁰ Charlton, however, did not believe that the bomber should necessarily be restrained in defence of collective security. In a fictional coda to *The Menace of the Clouds* he described how an ‘International Strategic Reserve’ might respond to an Italian attack on Egypt, by bombing Italy’s ports and dams, leading to civilian panic and an end to the war. This knock-out blow ultimately resulted in ‘a reign of universal peace’.¹⁶¹ Mumford and Charlton were both former RAF officers who had served in both the First World War and postwar Iraq. As such, they perhaps held a more realistic attitude to the uses of airpower than moderate pacifists like Noel Baker.

There were potential constitutional difficulties. J. M. Spaight believed that no nation would be willing to grant the League the power to decide questions of war and peace, and offered as evidence the successive failures of the Treaty of Mutual Assistance and the Geneva Protocol.¹⁶² His argument was that the Covenant, when supplemented by regional agreements of the Locarno type, was already adequate for the organisation of collective security. In wartime, this would necessarily involve the heavy use of aircraft to stop any aggression and so, in practice, would be internationalised airpower:

You organise international air power *indirectly* to-day when you organise a system of mutual guarantee and assistance. The fact is significant. One can conceive a system of extended pacts of the Locarno type leading in time, first, to the indirect, eventually, perhaps, to the direct organising of international air power on a world-wide basis.¹⁶³

But according to Davies, the Covenant already revoked from nations the

¹⁵⁸Mumford, *Humanity, Air Power and War*, 176.

¹⁵⁹*Ibid.*, 178.

¹⁶⁰*Ibid.*, 179.

¹⁶¹Charlton, *The Menace of the Clouds*, 286.

¹⁶²Spaight, *An International Air Force*, 59-63.

¹⁶³*Ibid.*, 65; emphasis in original.

‘so-called right to go to war except under certain conditions’, and so no additional rights would be yielded through the organisation of international airpower.¹⁶⁴ Conservatives were not convinced. In 1923, the right-wing military intellectual J. F. C. Fuller was extremely sceptical of internationalised force, arguing in highly gendered terms that ‘The nation which depends for the security of its honour on some international police force has become but a kept-woman among nations’.¹⁶⁵ Harold Balfour, a Conservative MP, similarly posited, in regard to the internationalisation of civil aviation, that ‘we cannot afford to surrender our own right to develop on our own lines for our particular requirements’, particularly given the increasing importance of civil aviation in peace and war.¹⁶⁶

The problem of sovereignty led to the even more vexed question of a super-state. For Spaight, following the former Labour air minister Lord Thomson, before an international air force could be created ‘the League must become a super-State; in other words, the institution of such a force must follow, not precede, the federation of (at any rate) Europe’.¹⁶⁷ Griffin noted that many of his fellow citizens feared ‘the nebulous nightmare of a world authoritarian State’ because of the potential for universal bureaucratic interference in everyday life, but denied that the organisation required for this could ever be achieved in practice.¹⁶⁸ Yet others welcomed a superstate. Lord Allenby, one of Britain’s great generals, asked in 1936:

Is it too much to believe that the human intellect is equal to the problem of designing a world state wherein neighbours can live without molestation; in collective security? It does not matter what the state is called; give it any name you please:– League of Nations; Federated Nations; United States of the World. Why should there not be a world police; just as each nation has a national police force?¹⁶⁹

¹⁶⁴Davies, *Force and the Future*, 43.

¹⁶⁵Fuller, *The Reformation of War*, 282.

¹⁶⁶Balfour, ‘The problem of air defence’, 155.

¹⁶⁷Spaight, *Pseudo-Security*, 111.

¹⁶⁸Griffin, *Britain’s Air Policy*, 129.

¹⁶⁹Allenby, *Allenby’s Last Message: World Police for World Peace* (London: The New

Bertrand Russell, a pacifist as well as a famous philosopher, believed that ‘permanent peace’ could only be achieved by ‘a single supreme world government, possessed of irresistible force’, with ‘air warfare [its] exclusive prerogative’. All military and civilian aircraft would be owned by the world state.¹⁷⁰ In his novel *The Shape of Things to Come*, Wells foresaw that after the next, catastrophic war, airmen would begin to knit a shattered civilisation back together under the auspices of Air and Sea Control, a Kiplingesque organisation controlling international transport. Air and Sea Control later transforms into a benevolent but authoritarian Air Dictatorship which uses its monopoly of airpower to control the world.¹⁷¹ This was simply a variation of Wells’ ideal of a technocratic utopia which he advanced at several points throughout his life – *The World Set Free* being another example – and one which was later popularised in the spectacular 1936 film, *Things to Come*.¹⁷²

Some on the left were sceptical. Absolute pacifists like Helena Swanwick argued bluntly that, since a knock-out blow would probably be launched without warning, ‘All the International Force could do, perhaps, if not too late to do anything, would be to devastate the aggressor country and its inhabitants’.¹⁷³ Swanwick totally opposed the use of force in international relations on moral grounds:

When I hear a mild-mannered pacifist speak of air-bombardment as the ‘technical means of enforcing a unanimous decision’, I marvel that any man can within the space of one generation so utterly forget the horror that lies under such complacent language.¹⁷⁴

But she also believed that an international air force would itself endanger peace: the threat of military sanctions might actually encourage an aggressor to anticipate an adverse ruling by the League and attack first.¹⁷⁵ The

Commonwealth, 1936), 9.

¹⁷⁰Russell, *Which Way to Peace?*, 173.

¹⁷¹Wells, *The Shape of Things to Come*.

¹⁷²Wells, *The World Set Free*. See Philip Coupland, ‘H. G. Wells’s “liberal fascism”’, *Journal of Contemporary History* 35 (2000), 541-58; Edgerton, *England and the Aeroplane*, 44-5.

¹⁷³Swanwick, *New Wars for Old*, 28.

¹⁷⁴*Ibid.*, 43.

¹⁷⁵*Ibid.*, 29.

communist Tom Wintringham also rejected the international air force concept, but for very different reasons. He viewed it as a distraction to the left: war was inevitable and presented the working classes with their best chance for revolution. Indeed, they had no need to fear aircraft as it was they who made and maintained them.¹⁷⁶ Wintringham also criticised the assumption that an international police force would necessarily be benevolent: this was a ‘slightly ludicrous suburbanism. It is a view of the police natural to Hampstead Garden Suburb’ – and not to the working classes, who had a very different perspective on police violence.¹⁷⁷ H. N. Brailsford, a veteran left-wing journalist, was actually in favour of an international police force, but only after nationalism had been discarded, and a world federation of socialist states formed: ‘one would not propose to endow the League of Nations, as it exists to-day, with an international force’, since it would be used ‘to create a stifling international despotism’.¹⁷⁸

As the 1930s waned, the possibility of an international air force seemed ever more remote. The League had failed to operate effectively in crisis after crisis, which underscored the need for a reform of the international order, but the increasingly obvious discord between democracies and dictatorships made this a futile hope. In 1937, Aldous Huxley, in *An Encyclopædia of Pacifism*, mocked the very idea of international co-operation: ‘In the world of to-day it is inconceivable that French and Germans, Russians and Italians, Americans and Japanese would unite together in order to man such a force’.¹⁷⁹ Even Charlton’s enthusiasm seemed to flag. Always one of the most strident advocates of an international air force, in his contribution to *The Air Defence of Britain*, published shortly after the Munich Conference, he still hoped that eventually ‘the supra-national air force would stand alone as the policeman of the world’. But he admitted that such a force might take as long as ‘five or seven years to reach a necessary pitch of efficiency’. There

¹⁷⁶Wintringham, *The Coming World War*, 231. Wintringham himself had been an engine fitter in the RFC during the First World War. See David Fernbach, ‘Tom Wintringham and socialist defense strategy’, *History Workshop Journal* 14 (1982), 64.

¹⁷⁷Wintringham, *The Coming World War*, 173.

¹⁷⁸Brailsford, *Property or Peace*, 171-3, 299.

¹⁷⁹Huxley, *An Encyclopædia of Pacifism*, 60.

was no longer enough time to educate British and international opinion on the need for internationalism in the air, and so Charlton was forced to reverse his earlier opposition to counter-bombing: ‘There is no escape from the immediate necessity to rearm’. In fact, it should be sped up.¹⁸⁰

The situation did not improve in the early years of the Second World War. The potential reconstruction of the international order would have to wait until victory had been won; short- and medium-term responses to the danger of bombing, such as air defence and counter-bombing, clearly took priority. Wells was, characteristically, one of the few looking further ahead. He published a number of books and pamphlets alluding to the need for a new world order. In *The Common Sense of War and Peace*, published in mid-1940, even before the start of the Blitz, he bluntly predicted that ‘Either man will put an end to air war or air war will put an end to mankind’. The only solution, Wells contended, was ‘to take at least the control of the air out of the scheme of national and imperial politics and entrust it to a fully-empowered world-directorate’, a limited world federation very much in keeping with the Air and Sea Control of *The Shape of Things to Come*.¹⁸¹ But even those sympathetic to the internationalisation of aviation dismissed the idea as impractical. George Orwell criticised Wells’ technocratic utopianism as more appropriate to the 1900s than the 1940s. Even though he admitted that ‘All sensible men for decades past’ largely agreed with Wells, he asked:

What is the use of saying that we need federal world control of the air? The whole question is how we are to get it. What is the use of pointing out that a World State is desirable? What matters is that not one of the five great military powers would think of submitting to such a thing.¹⁸²

Bernard Davy, writing during the Blitz, favoured a Fabian solution of allowing international control to develop gradually ‘through the evolution of

¹⁸⁰Charlton et al., *The Air Defence of Britain*, 109. See p. 150.

¹⁸¹H. G. Wells, *The Common Sense of War and Peace: World Revolution or War Unending* (Harmondsworth: Penguin Books, 1940), 71. See also Wells, *Guide to the New World*, 31.

¹⁸²George Orwell, ‘Wells, Hitler and the World State’, *Horizon: A Review of Literature and Art* 4 (August 1941), 134.

society and of human conduct, which it is hoped may be accelerated after the Second World War'.¹⁸³ Others rejected altogether any idea of reviving collective security after the war, such as Auspex, who trusted instead in 'the mighty navies and air fleets which we and the United States will have at our disposal at the end of the war'. Anglo-American power would protect nations of 'good will' in this 'Freedom Area'.¹⁸⁴ As the free world contracted, the allure of internationalism faded.

Conclusion

Internationalist responses to the knock-out blow had deep roots in 19th century liberalism and the attempt to create a world order based on the rule of law, not of force. Disarmament had long been a cause of the Radical wing of the Liberal party, and attempts to limit the barbarity of warfare were an increasingly important part of international law by the start of the 20th century. But the First World War amply showed the shortcomings of the existing system of relations between the world's powers. An arms race on land and sea had contributed to the tensions preceding the outbreak of war, and barbarism seemed to mark its conduct far more than humanity.¹⁸⁵ The instinctive liberal response was to call for further limitation, and multilateral disarmament. But there also arose a new idea, or at least one which had previously been no more than a utopian dream: collective security. Even more so than disarmament and limitation, collective security became an orthodoxy in interwar Britain. Large majorities of the public supported it, and so, unsurprisingly, did all the major political parties.

The coming of airpower complicated all of these hopes. The possible convertibility of civilian aircraft to military use meant that the abolition of military aircraft alone was not enough to guarantee security. The theory of the knock-out blow, if true, meant that attacking civilians was the surest

¹⁸³Davy, *Air Power and Civilization*, 194.

¹⁸⁴Auspex, *Victory from the Air*, 233.

¹⁸⁵See David Stevenson, *Armaments and the Coming of War: Europe, 1904-1914* (Oxford: Clarendon Press, 1996); Kramer, *Dynamic of Destruction*.

and the quickest way to win a war, a temptation to any nation whatever international law might say. In the air age, the workings of diplomacy were far too slow to have any prospect of stopping a knock-out blow before it devastated its victim. And since it did not allow for the terrible power of the bomber, the League of Nations and its Covenant, in many ways a radical experiment, was dangerously out of date from the moment of its creation.

Attempts were made to allow for airpower. Disarmament talks considered not only military aircraft, but also civilian aircraft. Jurists and diplomats attempted to come up with ways to regulate the conduct of aerial warfare. Air Locarnos were discussed as a way to furnish collective security with a meaningful response to air attack. But the most ambitious idea for achieving this was the international air force, an attempted compromise between liberal ideals and military necessity. It promised a way not just to win wars, but to prevent them altogether.

Despite its liberal origins in wartime proposals for means to enforce a peace, the international air force achieved a remarkable degree of support from writers across the political spectrum.¹⁸⁶ This was true, to an extent, of collective security itself, but the international air force appealed more to conservatives because it recognised the necessity of force in international relations, at least as a means of last resort. Indeed, among the earliest proponents of an international air force were prominent conservatives such as Lord Robert Cecil and Winston Churchill, while P. R. C. Groves, another early (if lukewarm) supporter, also had right-wing politics.¹⁸⁷ Cecil was more committed to the League of Nations and collective security than to the international air force, however; and Churchill and Groves may have seen the international air force as a way of obtaining support for British aerial rearmament. Others, however, particularly on the right, objected to the necessary infringement upon national sovereignty involved in yielding

¹⁸⁶According to David Edgerton, the international air force was a peculiarly liberal conception: Edgerton, *England and the Aeroplane*, 41. But, for a time at least, interest in it was not ideologically driven.

¹⁸⁷During the Spanish Civil War, Groves toured the Nationalist areas, which he viewed as the frontline against Soviet influence: P. R. C. Groves, 'This air business', unpublished ms. (c. 1939), 5(e), Groves papers, KCL.

Britain's right to decide when and against whom to fight.

The left was somewhat ambivalent about the international air force. Absolute pacifists like Helena Swanwick did not recognise that force had any legitimacy in international affairs – which also made limitation problematic – and so preferred disarmament and collective security. Theoretical objections derived from Marxist doctrine were raised by some who, like Tom Wintringham, were as concerned with the coming proletarian revolution as they were with the next war. But then again, one of the most convinced supporters of the international air force was L. E. O. Charlton, a socialist who sincerely believed that there was no greater threat to the working class than the knock-out blow. Norman Angell and Philip Noel Baker, two of the Labour Party's brightest internationalists, saw the international air force as the best way to give teeth to collective security and to defend the international order. And the Labour Party officially endorsed internationalisation in its 1935 manifesto.

The international air force's natural home ought to have been liberalism, with Lord Davies, a former Liberal MP, as its most devoted enthusiast. There was strong support within the parliamentary Liberal Party, and in 1934 the Women's National Liberal Federation publicly called for an international air force.¹⁸⁸ The Liberal *Manchester Guardian* sometimes promoted it in its editorials, although it was keener on the internationalisation of civil aviation. Certainly, the international air force was the great hope of liberal internationalists in the 1930s, as David Edgerton explains.¹⁸⁹ But liberalism was no longer as politically powerful as it had been before 1914, and it was the left which was the main source of strength for airminded internationalism in Britain.

The attainment of limitation, disarmament and collective security were all official policy, at least until the mid-1930s, even if they were at times pursued indifferently. Even the international air force was supported by British diplomats, if only briefly. Internationalist responses were, on the

¹⁸⁸See Beaumont, *Right Backed by Might*, 49; Richard S. Grayson, *Liberals, International Relations and Appeasement: The Liberal Party, 1919-1939* (London and Portland: Frank Cass, 2001), 90, 95.

¹⁸⁹Edgerton, *Warfare State*, 313-8.

whole, less ideologically-bound than resistive and adaptive ones, and found strong support across the political spectrum. But the potential strength of internationalism was precisely its weakness: it required the consensus of a community of nations, a consensus which was already fragile in the 1920s, and which fractured beyond repair by the mid-1930s. Internationalists had to bide their time thereafter. As the Second World War progressed, however, Britain and its allies were joined by the United States and a host of other nations. Hopes were raised for a more realistic collective security system after the war, which were invested in the successor to the League, the United Nations Organisation. And as internationalism rose anew, so did the idea of an international air force.¹⁹⁰ But then another new technology arrived which made already complicated problems almost insoluble: the atomic bomb.

¹⁹⁰See Beaumont, *Right Backed by Might*, chapter 4.

Part III

Crises

Chapter 6

Defence panics

Part I showed how the threat of the knock-out blow was constructed by airpower writers. Part II explored what they and other writers thought were the best ways to respond to that threat. Of course, all this intellectual activity by a small elite was not undertaken for its own sake. Its primary purpose was to persuade readers of the reality of the threat of the knock-out blow and the need for action to counter it. The reason for this is that in a democracy such as Britain, governments were widely thought to be susceptible – at least, at times – to pressure from the public. As Catherine Krull and B. J. C. McKercher note, ‘politicians of every stripe were cognizant of the power of “public opinion” that, exercised through the ballot box, could make or break government in elections’.¹ Therefore, they had to monitor public opinion and respond to it. This could mean defending existing policies, or making promises which they failed to fulfill. But it could also mean making significant changes to policy. As just one example, in October 1938 the First Lord of the Admiralty, Sir Samuel Hoare, wrote to the Chancellor of the Exchequer, Sir John Simon: ‘It is clear that the country is anxious for large developments in [air raid] shelter policy, and the government must adopt measures which will secure vigorous and quick progress with all practicable

¹Catherine Krull and B. J. C. McKercher, ‘The press, public opinion, arms limitation, and government policy in Britain, 1932-34: some preliminary observations’, *Diplomacy and Statecraft* 13 (2002), 105.

schemes for providing such protection'.² This admission was followed by a dramatic increase in ARP expenditure and the appointment of a highly-regarded civil servant, Sir John Anderson, to the position of Home Secretary in order to oversee the new programme, which was based on the principle of universal protection.³

But relatively few people ever read the works of specialist airpower writers like P. R. C. Groves or L. E. O. Charlton.⁴ So how was their message disseminated? How did the public learn to fear bombing? Hoare's statement offers a clue. It came after the Sudeten crisis and the left's deep shelter campaign. This was a time when the nation's fears of aerial bombardment were exposed for all to see. In such periods of crisis, politicians were particularly aware of these fears. But it was also when the public itself paid most attention to such issues. Every day, the press devoted substantial amounts of space to Britain's aerial danger – to the possibility of a knock-out blow – alongside discussions of steps that could be taken to remedy the situation. Therefore, a study of the ideas about airpower presented to the public in the national press during such crises tells us much about the sorts of ideas that the public likely held about airpower. As Charles Madge and Tom Harrison noted in 1939, a 'Crisis is a kind of melting-point for boundaries, institutions, opinions. In a crisis, public opinion, which at other times is largely inert, becomes a real factor'.⁵ And to extend the chemical metaphor, as a crisis cools, public opinion can crystallise into a different form than before.

This chapter addresses the question of how the British public learned about threats to their national security. First, the problems inherent in studying public opinion in early 20th century Britain will be reviewed, by way of an attempt to discover what beliefs the public actually held about the danger of bombing. Second, since newspapers are the only practicable means of assessing public opinion throughout this period, the press land-

²Sir Samuel Hoare to Sir John Simon, 26 October 1938, HO 45/700281/240; quoted in Werskey, *The Visible College*, 232-3.

³Werskey, *The Visible College*, 233.

⁴See p. 209.

⁵Charles Madge and Tom Harrison, *Britain by Mass-Observation* (Harmondsworth: Penguin Books, 1939), 30.

scape will be briefly surveyed. Third, a new model of how the press both influenced and expressed public opinion will then be proposed, the *defence panic*, which focuses on periods of perceived national crisis and is inspired by the sociological concept of moral panic. Fourth, British defence panics in the period 1847-1914 will be discussed briefly, placing them in their historical context. Fifth, aerial defence panics, or *air panics*, in the period 1908-1941 will be examined in some detail. The chapters which follow will use various air panics, from the phantom airship panic of 1913 to the Blitz in 1940, to examine the origin and evolution of the public's fear of aerial bombardment.

The problem of public opinion

What did the public actually believe about the danger of air attack? Gauging the nature of public opinion on any particular topic is always difficult, but all the more so in Britain before 1937, when both the British Institute of Public Opinion (BIPO, later the Gallup Organization) and Mass-Observation began their work. In December that year, a BIPO survey revealed that nearly half of those polled desired the abolition of military aircraft. In February 1939, fully 70% of respondents wanted the government to proceed with a deep shelter programme.⁶ This fell to 53% in May, but was back up to 66% in October 1940, after the start of the Blitz. That same month, BIPO asked people if they would approve of a similarly indiscriminate bombing campaign against German civilians: 46% said yes, but an equal number said no. In January 1941, when asked about their thoughts on hearing of a heavy raid, about a sixth of people wanted better protection for civilians, just under three-tenths worried about post-raid services for the bombed, a quarter wanted to bomb German military targets harder, and a fifth wanted reprisals against German civilians. Finally, in March, 78% of respondents did not believe that Britain could lose the war through air attack alone.⁷

⁶See p. 132.

⁷George H. Gallup, editor, *The Gallup International Public Opinion Polls: Great Britain 1937-1975*, volume 1: 1937-1964 (New York: Random House, 1976), 10, 13, 18, 35, 39, 41-2.

Mass-Observation's evidence was often more impressionistic, but also more striking. In its work in the London suburb of 'Metrop' (i.e., Fulham) in March 1938, a minority of people interviewed were extremely pessimistic about what would happen if war came, to the extent that they had already thought about suicide. For example, a mother of two said that 'I want to see my children dead before I am if there is to be a war, and I'll see that they are if they bomb here'.⁸ Most people, however, seemed uncertain, rather than frightened, when confronted with the prospect of war.⁹

Several attempts at measuring public opinion on defence matters were undertaken earlier in the 1930s, which although less well-defined in a statistical sense than the BIPO and Mass-Observation surveys are still of some value. Most important by far was the Peace Ballot of 1935, which was carried out by the League of Nations Union (LNU). Some 11 million votes – nearly two-fifths of the adult population – were cast in this unofficial referendum on a number of questions, one of which was 'Are you in favour of the all-round abolition of national military and naval aircraft by international agreement?' Around 9.5 million, or 86%, answered in the affirmative.¹⁰ Between February and April 1934, five provincial newspapers owned by the Rothermere press asked their readers a different series of questions. The last was 'If a Continental power within air-reach of London arms intensively in the air, should Britain re-arm against it?' The proportion of 'yes' votes ranged from 56% in Leicester to 77% in Bristol.¹¹

Less direct evidence for the beliefs of the public about the dangers of air attack can be deduced from collective behaviour. The most interesting examples of this are the phantom airship panic of 1913 and the Sudeten crisis of 1938, which are both discussed in more detail elsewhere.¹² The former

⁸Madge and Harrison, *Britain by Mass-Observation*, 50.

⁹*Ibid.*, 52-7.

¹⁰See Ceadel, 'The first British referendum', 828.

¹¹See *ibid.*, 814, 815-6. Since Rothermere was hostile to the Peace Ballot and favoured rearmament, this should be regarded as an early example of push polling. In Hull, more than half of all respondents gave no answer to the final question, which may have been the result of a vigorous local LNU campaign. See Angell, *The Menace to Our National Defence*, 129-32.

¹²See pp. 229ff. and 254ff.

showed that enough people believed that Germany was actually sending airships to spy on Britain that some actually believed that they saw them in the night sky where none could possibly be. The latter showed that enough people believed that an air attack on London would be devastating that more than 150,000 fled the city. More ambiguously, the rapid growth in popularity of the Hendon Air Pageant and Empire Air Day, first held in 1920 and 1934 respectively, demonstrate an interest in the RAF on the part of the public, though how far this resulted from or contributed to an understanding of air-power is open to question. It may simply have been a love of spectacle which drew such large crowds.¹³

Taken together, these scattered pieces of evidence do not prove a universal or consistent belief in the knock-out blow theory, but they do suggest that a substantial proportion of the public took the danger of air raids very seriously during peacetime, particularly in the mid- to late 1930s. Since there is considerable overlap between some of the opinions held by ordinary people and the theories advanced by aviation and other experts, it seems probable that the latter had some influence on the former. However, most experts who discussed these ideas did so primarily in full-length monographs. While these books were intended for the reading public, this does not mean that the public read them. Even the spectacularly successful Penguin paperback imprint, launched in 1935, generally had sales figures in the range of tens of thousands per title, which was only a small fraction of Britain's 1931 population of 37 million.¹⁴ Most air power books did not sell anything like this number. L. E. O. Charlton's third book on the topic, *The Menace of the Clouds*, sold poorly, and 'all his high hope of being at last accepted as a chief authority on air power came tumbling with it' – and he was one of the more successful writers in the genre.¹⁵ Even the popularisation in fictional form of ideas about air strategy were unlikely to have reached many people, for

¹³On Hendon, see David E. Omissi, 'The Hendon Air Pageant, 1920-1937', in: John M. MacKenzie, editor, *Popular Imperialism and the Military: 1850-1950* (Manchester: Manchester University Press, 1992).

¹⁴See John Feather, *A History of British Publishing*, 2nd edition (London and New York: Routledge, 2006), 175-7. Only one Penguin book directly addressed the threat of a knock-out blow: Charlton et al., *The Air Defence of Britain*.

¹⁵Charlton, *More Charlton*, 216-7.

they were too few and in general sold too poorly.¹⁶ A few novels did do well: *The Gas War of 1940* was first published in 1931, and went through further editions (under different pseudonyms or titles) in 1934 and 1940, selling around a hundred thousand copies in all.¹⁷ But most other exceptions, such as Wells' *The War in the Air* and *The Shape of Things to Come*, probably owed their success to their author's fame as much as anything else.

So how did the British public learn about the dangers of bombing? The answer to this question is given by a survey carried out by Mass-Observation at the end of August 1938. 1100 people were asked 'On what do you base your opinion?' The most common answer was newspapers at 35%, followed by friends at 17% and radio at 13%.¹⁸ This does not mean that newspaper readers blindly accepted everything they read; to the contrary, as the founders of Mass-Observation, Charles Madge and Tom Harrison, wrote in 1939:

Yet dependent as they [the public] are on the newspapers for the data on which to base their opinions, at the same time they distrust them. It is like being led through strange country by a guide who may turn out to be a gangster in disguise.¹⁹

While the public did not necessarily lift their opinions directly from the press, newspapers supplied many of the ideas and facts which informed public opinion. Moreover, they played a crucial role in determining which subjects rose to the forefront of national consciousness.²⁰ Almost necessarily, most

¹⁶See Ceadel, 'Popular fiction and the next war', 161.

¹⁷Miles, *The Gas War of 1940: A Novel* (London: Eric Partridge, 1931); Neil Bell, *Valiant Clay* (London: Collins, 1934 [1931]); Neil Bell, *The Gas War of 1940* (London: Collins, 1940 [1931]). Miles and Neil Bell were pseudonyms for Stephen Southwold. See Ceadel, 'Popular fiction and the next war', 171.

¹⁸Books came sixth, at just 5%: Madge and Harrison, *Britain by Mass-Observation*, 30. After Munich and the Phoney War, newspapers were only ranked third in a similar Mass-Observation survey which was probably undertaken in April or March 1940: *Us*, 16 March 1940.

¹⁹Madge and Harrison, *Britain by Mass-Observation*, 30. The abdication crisis played a part in undermining trust in the press: see *Us*, 16 March 1940.

²⁰For a summary of sociological research into media influence on what people know, what they think, and what they think about, see James Curran and Jean Seaton, *Power Without Responsibility: The Press, Broadcasting and New Media in Britain*, 6th edition

studies of public opinion in early-twentieth century Britain are ultimately studies of press opinion.

While aviation- and defence-related issues were a common topic in the press from 1908 on, the frequency of such stories varied greatly over time. Given the role played by the media in setting the national agenda, it follows then that newspapers were most influential in propagating ideas about air-power when they paid most attention to the subject. This means that, aside from periodic and predictable events like Empire Air Day and Hendon, it was primarily during periods of heightened concern over the dangers of bombing that the public at large learned to fear the knock-out blow.

It is important to remember that, even in moments of extreme national danger, there were always some people who simply refused to pay attention, as demonstrated by this (possibly apocryphal) discussion between two young women in London at the height of the Sudeten crisis:

First Y.W.: What is all this about the Czechs?

Second Y.W.: My dear, I haven't the faintest. I never read the papers, and when they start those news bulletins on the wireless I always switch off.²¹

Perhaps a sixth of the population felt this way, while another two-fifths were becoming increasingly apathetic due to the almost constant crises of the previous few years.²² At anything less than this level of wilful ignorance, however, the press did have an important effect on public opinion (if not a determining one), and the following chapters will show what it told the public to expect when the bombers came.

The press in early twentieth century Britain

The press was an important part of the British polity, not only for the influence it had on public opinion, but because it was widely taken to be repre-

(London and New York: Routledge, 2003), 331-5. See also Krull and McKercher, 'The press', 103-36.

²¹Lucio, *Manchester Guardian*, 29 September 1938, 6.

²²See Madge and Harrison, *Britain by Mass-Observation*, 26.

sentative of public opinion as well, especially by journalists and politicians.²³ This was always partly wishful thinking, but became especially misleading in the late 1930s when the system of non-attributable briefings favoured by Neville Chamberlain while Prime Minister led to almost unanimous support for appeasement in the national and provincial press. The public, however, favoured a firmer stand against Hitler, and consequently trusted newspapers less after Munich. Chamberlain himself was mistakenly convinced that the country was solidly behind him until he was forced from power in May 1940.²⁴ Similarly, the press colluded with Chamberlain's government in suppressing information about deficiencies in Britain's air defences.²⁵ The reason seems to be that in the late 1930s, war was felt to be dangerously close, and that it was therefore patriotic not to draw attention to the possible destruction which might follow, especially since a weakening of morale was itself thought to be one of the chief dangers. J. L. Garvin, the great conservative editor of the *Observer*, suppressed his own negative opinion of the agreement reached at Munich, noting that 'Fleet Street might have been bombed this Saturday' [1 October 1938] and so 'we have written under the strictest reserve'.²⁶ Newspapers were not monolithic entities, and even where a definite editorial stance was taken, individual columnists and journalists could sometimes express contrary opinions in print. On the whole, however, in the late 1930s there was a dangerous lack of diversity in the print media when it came to foreign policy, despite the large number of newspapers in existence.

Most newspapers had political affiliations, though usually only informally and not necessarily uncritically. Of the dailies, *The Times* was widely re-

²³The proof of this is in the energetic cultivation of proprietors, editors and journalists by politicians and civil servants: see Krull and McKercher, 'The press', 109-10. On the press in Britain, see generally, Stephen Koss, *The Rise and Fall of the Political Press in Britain*, volume 2: The Twentieth Century (London: Hamish Hamilton, 1984); Curran and Seaton, *Power Without Responsibility*, chapters 5 and 6; for the 1930s, see Richard Cockett, *Twilight of Truth: Chamberlain, Appeasement and the Manipulation of the Press* (London: Weidenfeld and Nicolson, 1989); Benny Morris, *The Roots of Appeasement: The British Weekly Press and Nazi Germany during the 1930s* (London and Portland: Frank Cass, 1991).

²⁴See Cockett, *Twilight of Truth*, 121-7, 189-91.

²⁵See John Ruggiero, *Neville Chamberlain and British Rearmament: Pride, Prejudice, and Politics* (Westport and London: Greenwood Press, 1999), 111.

²⁶Quoted in Cockett, *Twilight of Truth*, 82-3.

garded as the most influential newspaper, not for its circulation (45,000 in 1910, 213,000 in 1939) but because it was read by the most important political and business leaders in the country. Between 1908 and 1922, it was owned by the airminded Lord Northcliffe, who hoped to use it for political influence, particularly with the Conservative Party, but nonetheless was usually persuaded that its editorial independence was its most important asset. Afterwards it was owned by John Astor, a Conservative MP who rarely interfered in the running of the paper. Under its long-serving editor, Geoffrey Dawson, *The Times* supported appeasement implicitly. The *Daily Mail* was also owned by Northcliffe, and upon his death passed to his equally airminded younger brother, Lord Rothermere. Like *The Times*, it was independent of the Conservative Party, but rather more right-wing and populist, and more of a political tool of its masters. It was also much more widely-read, particularly by the middle class (circulation 900,000 in 1910, 1,510,000 in 1939). In the mid-1930s, Rothermere used the *Daily Mail* to advance the fortunes of Sir Oswald Mosley and his British Union of Fascists, and to pressure the government into aerial rearmament, but later it strongly supported the National Government's appeasement policy. The *Manchester Guardian*, a provincial newspaper catering mainly to Midlands businessmen, had rather modest circulation figures (40,000 in 1910, 51,000 in 1939) and is significant mainly as a representative of liberal opinion. Indeed, until the death of its owner-editor C. P. Scott in 1929, it was quite radical. Under William Crozier, its editor in the 1930s, the paper reverted to a more traditional liberal line, but was only mildly critical of Chamberlain's foreign policy.

The weekly press was less of a captive of Whitehall and Downing Street than the daily press, and so became particularly influential in the later 1930s.²⁷ Founded in 1913, the *New Statesman* (from 1931, formally *New Statesman and Nation*) was originally an independent radical paper, but moved into outright leftism in the 1930s under editor Basil Kingsley Martin. Its conservative equivalent was the *Spectator*. Both of these had relatively small circulations, in the thousands or tens of thousands, but were highly influential within their respective political spheres. By the 1930s, the *Sat-*

²⁷See Koss, *The Rise and Fall of the Political Press in Britain*, 497-8.

urday Review was more right-wing than even the *Daily Mail*, and its owner, Lady Houston, was as airminded as Northcliffe and Rothermore, if not more so. It ceased publication in July 1938. Also published on a weekly schedule were the specialist aviation magazines *Aeroplane* and *Flight*, the official organ of the Royal Aero Club. The former, in particular, was also very right-wing, anti-Bolshevik and anti-Semitic, thanks to C. G. Grey, its editor until 1939. Finally, the *Listener* mainly served to publish a selection of material broadcast on the BBC over the previous week. It had a moderate circulation but was widely respected.²⁸ The BBC itself was apolitical, a position which allowed for little criticism of the government.²⁹

Moral panics and defence panics

In his classic study of the emergence of novel forms of youth culture in 1960s Britain, *Folk Devils and Moral Panics*, sociologist Stanley Cohen introduced the concept of *moral panic* to describe the reactions of mainstream society, and particularly the media, to these new sociological phenomena:

A condition, episode, person or group of persons emerges to become defined as a threat to societal values and interests; its nature is presented in a stylised and stereotypical fashion by the mass media; the moral barricades are manned by editors, bishops, politicians and other right-thinking people; socially accredited experts pronounce their diagnoses and solutions; ways of coping are evolved or (more often) resorted to; the condition then disappears, submerges or deteriorates and becomes more visible.³⁰

Sometimes an element of disproportionality between the perceived danger and the actual danger is added to the definition, though this is not universally

²⁸See Asa Briggs, *The History of Broadcasting in the United Kingdom*, volume 2: The Golden Age of Wireless (London: Oxford University Press, 1995), 260-1, 265-71.

²⁹See Jeremy Mitchell, 'United Kingdom: stability and compromise', in: Dirk Berg-Schlosser and Jeremy Mitchell, editors, *Conditions of Democracy in Europe, 1919-39: Systematic Case Studies* (Basingstoke and New York: Macmillan Press, 2000), 461.

³⁰Stanley Cohen, *Folk Devils and Moral Panics: The Creation of the Mods and Rockers*, 3rd edition (London and New York: Routledge, 2002), 1.

accepted.³¹ Cohen's idea has become popular with other sociologists, as well as with media critics. Some historians have also found it useful, particularly those studying how societies respond to crime.³²

Although it appears that few historians have attempted to apply moral panics to the study of popular perceptions of military strategy, Cohen's definition well describes the way in which the media and other public actors in British society reacted to perceived threats to the security of Britain from the mid-19th century onwards.³³ Moreover, it helps explain how particular threats came to occupy prominent positions in the national consciousness. In normal times, aerial warfare was only one issue among many clamouring for attention; it was only in times of crisis that it came to the fore, dominating headlines for days or even weeks on end. Therefore, defence-related moral panics not only *propagated* fears about bombing; they *amplified* them as well.

The major difference between the standard definition of moral panic and its application in relation to defence fears is that here, the threat involved is ostensibly external to society, rather than internal – from another country rather than a deviant social group. Cohen's definition could therefore be restated and adapted to the defence context as follows:

1. Emergence of a threat to the nation
2. Presentation of the threat in the media

³¹See Eric Goode and Nachman Ben-Yehuda, *Moral Panics: The Social Construction of Deviance* (Oxford and Cambridge: Blackwell, 1994), 36-8.

³²See, e.g., Philip Jenkins, *Moral Panic: Changing Conceptions of the Child Molester in Modern America* (New Haven: Yale University Press, 1998); John Springhall, *Youth, Popular Culture and Moral Panics: Penny Gaffs to Gangsta-Rap, 1830-1996* (New York: St Martin's Press, 1998).

³³One minor exception is by the present author: Brett Holman, "The gathering cloud of rumour": phantom airships and the British fear of Germany, 1909-1913', PGradDip thesis, University of Melbourne (2004). With various collaborators, the sociologist Robert Bartholomew has applied moral panic and related concepts to historical episodes similar to those discussed in this chapter: see, e.g., Robert E. Bartholomew and Bryan Dickeson, 'Expanding the boundary of moral panics: the great New Zealand Zeppelin scare of 1909', *New Zealand Sociology* 13 (1998), 29-61. A more standard, indeed pioneering, approach to the study of popular opinion and defence issues is presented in Kyba, *Covenants without the Sword*. Insofar as it concentrates on one of the most significant foreign affairs crises in the 1930s, Daniel Waley, *British Public Opinion and the Abyssinian War, 1935-6* (London: Maurice Temple Smith, 1975) could be held to anticipate the present work in spirit.

3. Reactions to the threat by authority figures
4. Proposals by military or other experts for defence against the threat
5. Strategies employed in response to the threat
6. Disappearance or escalation of the threat

For ease of application, this can be further simplified as a three-stage process: *emergence* of the threat, *reactions* to the threat, and *resolution* of the threat. Such externally-oriented moral panics will henceforth be referred to as *defence panics*.³⁴

Defence panics, 1847-1914

Since the early 19th century, Britain's territorial integrity had been safeguarded by its island nature and by the naval supremacy of the Royal Navy. Oddly, this security was often more real than apparent, at least as far as politicians, the press, and the public were concerned. For the decades after the Crimean War were punctuated by a series of defence panics, characterised by press campaigns highlighting some supposed weakness in British defences, political manoeuvring for partisan gain, and expressions of concern by experts and other members of the public. While these panics were obviously conditioned by the ever-changing geopolitical situation, they usually had at their root advances in technology which threatened to upset the balance of power by eroding or even eradicating Britain's existing advantages. Equally, they depended upon the existence of a national press with large daily circulations, which began to develop after repeals of taxes on newspapers in 1836 and 1855.³⁵

³⁴However, defence panics can sometimes be reactions to groups within society, such as the working classes, immigrants or other ethnic groups, and to this extent they can be considered normal moral panics. It should also be noted that the use of the word 'panic' in the sense used here refers, largely, to a media dynamic, and not the panic which was supposed to ensue after an air raid.

³⁵See Alan J. Lee, *The Origins of the Popular Press in England, 1855-1914* (London: Croom Helm, 1976), chapter 3.

One of the earliest defence panics of the Victorian period resulted from a letter written by the Duke of Wellington, victor of Waterloo and a former Tory prime minister, which was quoted in the *Morning Chronicle* at the end of November 1847, and published in full on 4 January 1848. Wellington held that the recent development of steam-powered ships had rendered Britain ‘assailable’ by France, for ‘This discovery immediately exposed all parts of the coasts of these islands, which a vessel could approach at all, to be approached, at all times of the tide, and in all seasons, by vessels so propelled, from all quarters’. He used the prospect of a sudden descent upon any point along the coast as an argument for the creation of a large, well-organised militia to defend against invasion.³⁶ Wellington’s letter was discussed widely in the press, speeches were made in Parliament, and, eventually, income tax was raised to pay for the new force – an unpopular move which led to a public outcry and the abandonment of the proposal. This scare – the first of Richard Cobden’s ‘Three Panics’³⁷ – was followed by another in 1852, during which it was argued that ‘Steam navigation, railroads and electric telegraphs [...] facilitate the means of attack, and smooth the path leading to [Britain’s] shores’.³⁸ Further invasion panics – usually with France as the presumed enemy – took place in 1852-3, 1854, 1859, 1871 (the *Battle of Dorking* episode), 1881-2 (the Channel Tunnel), 1884, 1888 and 1900.³⁹

The Edwardian period saw a continuation of this pattern. Now, however, the danger appeared to come from Germany, an increasingly successful trade rival with a rapidly growing navy and a thrusting foreign policy.⁴⁰ The launch of the revolutionary battleship HMS *Dreadnought* in 1906 appeared

³⁶P., *Morning Chronicle*, 29 November 1847, 3; ‘The national defences’, *Morning Chronicle*, 4 January 1848, 2.

³⁷Richard Cobden, *The Three Panics: An Historical Episode* (London, Paris and New York: Cassell & Company, n.d. [1862]).

³⁸P. E. Maurice, *On National Defence in England* (London: Parker, Furnivall & Parker, 1852), 88.

³⁹On Victorian invasion scares generally, see Clarke, *Voices Prophesying War*, 27-130; Norman Longmate, *Island Fortress: The Defence of Great Britain 1603-1945* (London: Pimlico, 2001), 303-88; on the Channel Tunnel panic specifically, see Keith Wilson, *Channel Tunnel Visions 1850-1945: Dreams and Nightmares* (London and Rio Grande: Hambleton Press, 1994), 22-47.

⁴⁰See Paul M. Kennedy, *The Rise of the Anglo-German Antagonism, 1860-1914* (London and Atlantic Highlands: Ashfield Press, 1987), chapters 14 and 22.

to remove the Royal Navy's numerical advantage over other navies in one stroke, and thus paved the way for an intensification of the naval arms race between Germany and Britain.⁴¹ Though it ebbed and flowed, this race dominated Anglo-German relations between 1907 and 1914, and peaked in March 1909, when the famous 'dreadnought panic' took place. A British naval constructor claimed to have evidence that Germany was preparing to secretly accelerate its building schedule, leading to a furore in the Conservative press and navalist cries of 'We want eight [dreadnoughts] and we won't wait'. Under pressure, the Liberal Cabinet agreed to authorise the laying down of four dreadnoughts immediately, and another four later in the year if necessary – as turned out to be the case.⁴²

This apparent challenge to British naval supremacy was especially disconcerting when the large and efficient German army was compared with the small number of regular troops stationed in Britain. Novels depicting a sudden German invasion, such as *When William Came* and *The Enemy in Our Midst*, were very popular.⁴³ These 'bolt from the blue' novels used a variety of plot devices to get the Royal Navy out of the way – often a crisis on the edges of the Empire, but sometimes a secret new weapon, possessed only by the Germans. Once ashore, hordes of German soldiers would overrun the thin British defences, disrupt communications, and occupy London.⁴⁴ A related genre was the spy novel, which often portrayed German immigrants as 'Spies of the Kaiser'.⁴⁵ As Germany practised peacetime conscription, every waiter or hairdresser of German origin was plausibly depicted as a trained

⁴¹See Lawrence Sondhaus, *Naval Warfare, 1815-1914* (London: Routledge, 2001), 198-205.

⁴²See Padfield, *The Great Naval Race*, chapter 9; Morris, *The Scaremongers*, 164-84; also Jan Rüger, *The Great Naval Game: Britain and Germany in the Age of Empire* (Cambridge: Cambridge University Press, 2007), 219-23.

⁴³Saki, *When William Came: A Story of London under the Hohenzollerns* (New York: Viking Press, 1913); Walter Wood, *The Enemy in our Midst* (London: John Long, 1906). One of the very few such novels still read today, Erskine Childers' *The Riddle of the Sands*, is atypical in that the plot revolves around secret German preparations for invasion, and not the invasion itself. Erskine Childers, *The Riddle of the Sands* (Harmondsworth: Penguin, 1978 [1903]).

⁴⁴On the bolt from the blue, see p. 35.

⁴⁵See, e.g., William Le Queux, *Spies of the Kaiser: Plotting the Downfall of England* (London and Portland: Frank Cass, 1996 [1909]).

soldier, patiently waiting for *Der Tag* when he would carry out his orders in support of the invasion of Britain.⁴⁶

Nor were such paranoid fantasies confined to writers of fiction.⁴⁷ MPs asked questions in Parliament about secret arms caches in the heart of London, while the *Weekly News* offered £10 to any reader who produced evidence of spies active in Britain.⁴⁸ Lord Roberts of Kandahar, a retired and immensely popular field marshal, endorsed one of the most popular invasion tales, William le Queux's *The Invasion of 1910*, originally serialised in the *Daily Mail* in 1906.⁴⁹ He also lent his support to the National Service League's call for universal military training – conscription in all but name.⁵⁰ The public alarm which resulted from these and other activities forced the government to form CID sub-committees in 1907-8 and 1913-4 in order to assess the probability of a German invasion.⁵¹ In 1909, the Special Service Bureau, a predecessor to the counter-intelligence organisation MI5, was formed to investigate the persistent (but almost wholly untrue) rumours of German spy rings.⁵²

Some scepticism was expressed. Charles Lowe pointed out that the claimed size of the secret German army – anywhere up to 350,000, on some accounts – far exceeded the numbers of Germans resident in Britain as revealed by the 1901 census, and the invasion and spy genres were parodied by humorists such as A. A. Milne and P. G. Wodehouse.⁵³ But despite these efforts, invasion and spy panics remained the characteristic expressions of

⁴⁶On Edwardian invasion novels generally, see Clarke, *Voices Prophesying War*, 118-29.

⁴⁷Although, unsurprisingly, authors of spy novels such as William le Queux were the recipients of many letters from members of the public who thought they had seen something suspicious: see Nicholas Hiley, 'The failure of British counter-espionage against Germany, 1907-1914', *Historical Journal* 28 (1985), 843-4; Morris, *The Scaremongers*, 156-7.

⁴⁸See 'German soldiers in England', *The Times*, 25 May 1909, 6; Thomas Boghardt, *Spies of the Kaiser: German Covert Operations in Great Britain During the First World War Era* (Basingstoke and New York: Palgrave Macmillan, 2004), 30.

⁴⁹William Le Queux, *The Invasion of 1910* (London: Macmillan and Co., 1906). See Clarke, *Voices Prophesying War*, 122-4.

⁵⁰See Coetzee, *For Party or Country*, 38-42.

⁵¹See Morris, *The Scaremongers*, 134-47, 329-38.

⁵²See Hiley, 'The failure of British counter-espionage', 847-9.

⁵³Charles Lowe, 'About German spies', *Contemporary Review* 97 (January 1910), 42-56; A. A. M., 'The secret of the Army aeroplane', *Punch* (26 May 1909); P. G. Wodehouse, *The Swoop! And Other Stories* (New York: Seabury Press, 1979 [1909]), chap. The swoop!.

anxiety about defence in the Edwardian period.⁵⁴ In 1907, a long-serving member of the CID, the navalist Lord Esher, wrote to the First Sea Lord, Admiral Sir John Fisher, that:

A nation that believes itself secure, all history teaches is doomed. Anxiety, not a sense of security, lies at the root of readiness for war. An invasion scare is the will of God which grinds you a Navy of Dreadnoughts and keeps the British people war-like in spirit.⁵⁵

As long as this was true, or believed to be true, the potential for new defence panics would remain.

Air panics, 1908-1941

It was during the Edwardian period that flight first burst into the public's consciousness. The first flight over British soil by a heavier-than-air machine took place in October 1908; the English Channel was bridged by air in June 1909; the first flight from London to Manchester in July 1910.⁵⁶ Overseas, in July 1908 Count von Zeppelin made his first long-distance airship flight, and near Paris Wilbur Wright for the first time publicly demonstrated the aeroplane he had built with his brother.⁵⁷ Eventually, aviation came to replace spies and invasions as the greatest apparent threat to British security, but at first the new fears and the old coexisted and overlapped. For example, in 1909 Roger Pocock, founder of a group of amateur spy-hunters called the Legion of Frontiersmen, wrote of his belief that Germans were building secret aerodromes in Britain:

⁵⁴On Edwardian invasion panics generally, see Longmate, *Island Fortress*, chapter 35; Morris, *The Scaremongers*; on the spy scares specifically, see Boghardt, *Spies of the Kaiser*; David French, 'Spy fever in Britain, 1900-1915', *Historical Journal* 21 (1978), 355-70; Hiley, 'The failure of British counter-espionage', 835-62.

⁵⁵Quoted in Christopher Andrew, *Secret Service: The Making of the British Intelligence Community* (London: Sceptre, 1985), 86.

⁵⁶See Gollin, *No Longer an Island*, 303-4; Gollin, *The Impact of Air Power*, 68-76, 131-2.

⁵⁷See Guillaume de Syon, *Zeppelin! Germany and the Airship, 1900-1939* (Baltimore: Johns Hopkins University Press, 2002), 36; Robert Wohl, *A Passion for Wings: Aviation and the Western Imagination, 1908-1918* (New Haven and London: Yale University Press, 1994), 5-8.

4 mi[les] inland from Stranraer a private firm have meadows but this is a blind. There are German experts [and a] depot for 2 Zeppelin ships – being tested in a suitably hilly place [...] For 3 years a wooden airship has been building in a factory at Friern Barnet in London. Germans are opp[osite] an Institute called the Freehold.⁵⁸

There were structural links, too: the press empire of Lord Northcliffe, especially the *Daily Mail*, was as instrumental in creating air panics as it had been invasion panics.⁵⁹ In 1909, T. G. Tulloch called on the press to ‘stir up the great heart of the people to a sense of the danger of apathy and the need for immediate action’, not for more battleships as was traditional, but for aircraft: ‘For the price of a *Dreadnought* we could purchase many an aërial [sic] machine’.⁶⁰ He eventually got his wish. After the First World War and up to the Second World War, the traditional panics about seaborne menaces and the enemy within largely disappeared, and in this period defence panics primarily manifested as air panics. These air panics can in turn be characterised in terms of the apparent imminence of war: air panics which took place when war seemed distant had different characteristics to those during wartime itself.

Many issues relating to air defence gained the attention of the press during this period. But not all of these issues qualify as fully-fledged panics, because they faded from view after a few days or were promoted by only a minority of newspapers. Examples of these minor panics include the prediction by Rudolf Martin, a retired German official, that Zeppelins could be used to land an army of 350,000 men in Britain (1908); the supposed invention by Harry Grindell Matthews of a death ray which could shoot down aircraft (1924); and Henry Wickham Steed’s claim that German agents had been testing the feasibility of using bacteriological bombs to attack shelterers in

⁵⁸Quoted in Morris, *The Scaremongers*, 148; Roger Pocock, personal communication.

⁵⁹However, Northcliffe himself sometimes forced his editors to take a less alarmist line over the air menace: see Gollin, *The Impact of Air Power*, 59-60.

⁶⁰Tulloch, ‘The aërial peril’, 808-9.

the Underground (1934).⁶¹ Some events which might be expected to trigger a panic did not do so: the reaction of the press to the prospect of war in late August and early September 1939 was noticeably less nervous than it had been a year earlier.⁶² Similarly, Stanley Baldwin's 'the bomber will always get through' speech in November 1932 did not inspire any great anxiety in the press, influential though it was in other respects.⁶³ Other air panics were very significant, but did not relate to bombers as such: for example, the acute fear of German paratroopers across Britain in May 1940, which led to the formation of the Local Defence Volunteers (later renamed the Home Guard). In some ways this was an update of the Edwardian spy scares, and elicited a very different set of responses than did the danger of bombing.⁶⁴ Yet other potential panics never made it to the press, such as reports by RAF pilots of giant marks in fields, visible only from the air and supposedly made by German spies to attract the attention of bombers or paratroopers to nearby military targets.⁶⁵

Major panics were usually obvious to contemporaries, and often identified as such at the time. For example, in 1922, Liberal MP Wedgwood Benn claimed in Commons that there was 'a scare which is being fanned by the newspapers, and which is being supported by some Hon. Members in this the House. The scare is that our air power is very low, and should be immediately greatly strengthened'.⁶⁶ The *Manchester Guardian* also cautioned that 'The Government should not permit themselves to be rushed into critical judgments about their policy in air defence by alarmist campaigns in the press'.⁶⁷ Such critiques were in the Radical tradition of Richard Cobden, author of

⁶¹On Martin and Wickham Steed, see Gollin, *No Longer an Island*, 334-9; Martin Hugh-Jones, 'Wickham Steed and German biological warfare research', *Intelligence and National Security* 7 (1992), respectively. On Grindell Matthews, see p. 149.

⁶²See p. 268.

⁶³See p. 70.

⁶⁴See John P. Campbell, 'Facing the German airborne threat to the United Kingdom, 1939-1942', *War in History* 4 (1997), 411-33.

⁶⁵All of these turned out to have non-sinister explanations. See Midge Gillies, *Waiting for Hitler: Voices from Britain on the Brink of Invasion* (London: Hodder & Stoughton, 2007), 247.

⁶⁶HC Deb, 7 July 1922, vol. 156, col. 751; cf. *The Times*, 8 July 1922, 6.

⁶⁷'Air defence', *Manchester Guardian*, 28 July 1922, 6.

The Three Panics, a denunciation of similar panics in the mid-Victorian period because they led to unwarranted expenditure on unnecessary weapons, the acquisition of which could lead to war.⁶⁸ Others followed in Cobden's footsteps, notably Francis Hirst, editor of the liberal *Economist* and author of *The Six Panics and Other Essays* (1913), and the pacifist Caroline Playne in *The Pre-war Mind in Britain* (1928).⁶⁹ Though the accusation of panic was intended as a criticism of conservative editors, their targets saw nothing wrong with such practices – or at least, they may have regretted that matters should come to such a pass, but if the creation of a panic was the only way to repair the nation's defences, then so be it. The *Sunday Times*, for example, declared in July 1922 that 'The very last thing this country wants is a panic over defence', but it also recalled how 'every now and then in the three decades preceding the war we used to wake up and discover that we had no navy. There ensued a frantic and extremely expensive scramble to provide one'.⁷⁰ But as presented here, defence panics were not a uniquely conservative phenomenon, for the simple reason that newspapers on the left could also participate in them, as with the deep shelter campaign in the late 1930s. However, left-wing newspapers tended to focus on different answers to the problems posed by the bomber, just as airpower writers on the left did: ARP rather than the RAF, for example.⁷¹

Some panics seemed to have a clear enough origin, and clear enough results: Major-General Henry Rowan-Robinson thought in 1935 that it was the 'violent pressure [...] exerted by Mr. Garvin, General Groves, and others, which drove it [the government] recently to enlarge the air-programme'.⁷² But exactly who or what was driving a panic was not always clear. Competing and sometimes contradictory narratives were offered to explain scares (or the lack of them). The journalist Sisley Huddleston noted a widespread perception that arms manufacturers were responsible for scaremongering in

⁶⁸Cobden, *The Three Panics*.

⁶⁹F. W. Hirst, *The Six Panics and Other Essays* (London: Methuen, 1913); Caroline E. Playne, *The Pre-war Mind in Britain: An Historical Review* (London: George Allen & Unwin, 1928), especially chapter 2.

⁷⁰*Sunday Times*, 9 July 1922; quoted in Groves, *Our Future in the Air* (1922), 108.

⁷¹See p. 132.

⁷²Rowan-Robinson, *Security?*, 66.

order to increase sales, part of the ‘merchants of death’ myth. But he added that, even if it were in ‘the interests of cannon-merchants’ to start a panic, still, ‘judicious publicity given to preparations for war may help to secure peace’.⁷³ The Marxist Tom Wintringham claimed that business interests were behind the 1935 panic, allied with the government and the press barons (Rothermere, Beaverbrook, Astor):

The decision to make these preparations for war from the air in the near future was ‘put over’ by a press campaign almost on a level with the campaigns of the war period, and certainly stronger than the agitation for more battleships (‘We want eight and we won’t wait’) that helped the Liberal Government of 1906-14 to get ready for the crushing of Britain’s commercial rival, the German Empire.⁷⁴

Writing of the same period, J. F. C. Fuller thought that, to the contrary, politicians had fed the public ‘clap-trap’ about London being ‘wiped off the map by forty tons of poison gas’ to scare people into supporting disarmament.⁷⁵ P. R. C. Groves agreed that ‘misguided pacifists’ were using the threat of aerial destruction as propaganda for ‘further one-sided disarmament’.⁷⁶ But he also blamed unnamed ‘air protagonists’ for downplaying the destructiveness of aerial warfare precisely because they feared giving ammunition to the pacifists.⁷⁷ It could indeed be argued that the public were not sufficiently alarmed. In Groves’ view, the precision aerobatics at the annual Hendon displays lulled the public into thinking that the RAF’s skilful fighter pilots could defend Britain.⁷⁸ Fuller argued that during the late 1930s, having put in place rearmament, the government was downplaying the danger

⁷³Huddleston, *War Unless* —, 36-7. On the ‘merchants of death’, see Edgerton, *England and the Aeroplane*, 39-40.

⁷⁴Wintringham, *The Coming World War*, 111-2.

⁷⁵Fuller, *Towards Armageddon*, 162.

⁷⁶Groves, *Behind the Smoke Screen*, 178. See also Groves, *Our Future in the Air* (1935), 61.

⁷⁷Groves, *Behind the Smoke Screen*, 230.

⁷⁸*Ibid.*, 178. The ‘knights of the air’ myth surrounding fighter pilots of the First World War may have had the same effect: see Paris, ‘The rise of the airmen’, 123-41.

of air attack so as not to alarm people. This was foolish, for it undermined any impetus to develop appropriate ARP.⁷⁹

Although air panics were usually triggered by a specific event, such as the passage of a mysterious airship over a naval base or a revelation about the strength of foreign air forces, they could also assimilate other events which were ostensibly unrelated, such as the call for 500,000 ARP volunteers, announced on 23 September 1938 and launched on 3 October, which had been planned long in advance. But, as *The Times* noted, ‘The condition of international relationships unhappily ensures that orators will be over-supplied with material’: the Sudeten crisis was then mounting, and ARP was already a daily obsession for the press.⁸⁰ Connections could also be drawn between discrete events separated in time: the bombing of cities in Spain and China in the spring of 1938 was not forgotten by the time of the Sudeten crisis, almost forming a continuous panic from the end of May to the end of September.

While the press was of primary importance in mediating between elite and popular conceptions of airpower during air panics, other actors and influences were also important. Rumours must have played an important part, but by their nature are very difficult to reconstruct now.⁸¹ Fragmentary evidence exists: for example, in late September 1938 the headquarters of the Labour Party was paralysed by a story that ‘Germany had 2,000 aeroplanes ready at a moment’s notice to fly on London and we only had 20 that could safely take to the air’.⁸² In the summer of 1940, rumours circulated in rural Essex of ‘super-mortuaries’, which would be needed to accommodate the 50,000 air raid victims a week some people were predicting.⁸³ Phantom airship panics were particularly dependent on rumours: the *Manchester Guardian*

⁷⁹Fuller, *Towards Armageddon*, 162.

⁸⁰‘The autumn A.R.P. campaign’, *The Times*, 24 September 1938, 11.

⁸¹For an interesting collection of false rumours passed among friends and acquaintances in September 1939 regarding air raids, see Harrison and Madge, *War Begins at Home*, 38-50. On the uses of rumour, see Luisa White, *Speaking with Vampires: Rumor and History in Colonial Africa* (Berkeley, Los Angeles and California: University of California Press, 2000), chapter 2.

⁸²See Madge and Harrison, *Britain by Mass-Observation*, 95-6.

⁸³See Margery Allingham, *The Oaken Heart* (London: Michael Joseph, 1941), 134. This is a fictionalised memoir.

referred to the entire complex of fact and fantasy as ‘The gathering cloud of rumour’.⁸⁴

Politicians took the opportunities offered by panics to push forward their own agendas. These agendas were by no means fixed: Baldwin tried to promote awareness of the danger of a knock-out blow in 1927 and 1932, but had to try and dampen fears in 1935, when faced with the prospect of a costly arms race.⁸⁵ Most important in this regard were William Joynson-Hicks and Noel Pemberton-Billing in the First World War period, and Winston Churchill’s frequent calls for aerial rearmament in the 1930s.⁸⁶ But on their own, politicians had little power to actually initiate panics. Joynson-Hicks played an important role in promoting the phantom airship panic of 1913 but required an actual event – the reported passage of an airship of unknown origin over the Sheerness naval base – to give his warnings of Britain’s aerial weakness weight.⁸⁷ The same can be said for experts such as the Earl of Halsbury. His sensational claims in a 1927 *Daily Mail* article, which calculated the amount of gas needed to smother central London to a depth of 40 feet at 2000 tons, received support from other experts on chemical warfare, but failed to be picked up by other newspapers.⁸⁸ Even after an industrial accident released a cloud of phosgene gas over Hamburg the following year, raising suspicions about a German violation of the Versailles Treaty, Halsbury’s repetition of his claims in the House of Lords wasn’t even mentioned in *The Times*’ parliamentary reports.⁸⁹ What was needed was a plausible threat, and even allowing for the possibility of civilian aircraft converted into bombers, a disarmed Germany in the Locarno era was not perceived as a danger by any but the most committed Germanophobe.

⁸⁴‘The gathering cloud of rumour’, *Manchester Guardian*, 20 May 1909, 7.

⁸⁵See Powers, *Strategy Without Slide-Rule*, 136-7; p. 231.

⁸⁶See Paris, *Winged Warfare*, 75-80, 103-4; R. A. C. Parker, *Churchill and Appeasement* (London, Basingstoke and Oxford: Macmillan, 2000).

⁸⁷See p. 229.

⁸⁸Earl of Halsbury, ‘The poison gas war that is coming’, *Daily Mail*, 8 July 1927, 10.

⁸⁹HL Deb, 1 July 1928, vol. 71, cols. 969-76.

Conclusion

Press alarms about the state of Britain's defences were clearly recurrent phenomena during the late 19th and early 20th centuries. The defence panic concept can be used to examine these episodes in closer detail, which will shed light on the information they imparted to the public about the threat posed by aircraft to Britain and the possible measures which could be undertaken in defence. An analysis of the major air panics will show that the threats presented in the press were very similar to those proposed by the airpower writers (examined in Part I) and the reactions generally fell within the range of responses to the knock-out blow (examined in Part II). Thus it seems likely that the theories of airpower writers informed editors, journalists and interested laypeople as to the nature of the threat and what could be done about it, and that these ideas fed into and sustained each defence panic. Normally the air threat was only one among many issues confronting the public: it was only in periods of crisis that it came to occupy the forefront of the national consciousness. In short, defence or air panics were how the British people learned about the knock-out blow.

The panics discussed in the following chapters are of three types. The German air menace was a potent threat in 1913, 1922 and 1935: it was primarily a fear of Germany's air strength (although France also played a role in 1922). These types of panic took place when war was distant, or at least did not seem imminent. When war did seem imminent, as in the long panic of 1938 which culminated with the Munich Agreement, concerns were more immediate: the need for ARP, for example. But a belief in, or rather a hope for, collective security was also evident. Finally, when London was actually under attack, as in 1917 and 1940, the most pressing desire was to domesticate the knock-out blow by adapting the machinery of government to better cope with bombing – although the call for reprisals was also loud.⁹⁰

⁹⁰The Zeppelin raids in 1915-6 and the night raids on London in late 1917 and during the Blitz have not been examined here in detail, though they would fall into the last category of air panic.

Chapter 7

The German air menace, 1913, 1922 and 1935

The most common kind of air panic was rooted in concern over the numbers of aircraft possessed by a potential enemy and, more importantly, the relative lack of British aircraft and the consequent handicap in any future war. This fear was closely related to theories about the strategic employment of airpower prevalent at the time. Despite being, fundamentally, a result of perceived British weakness, such panics took place not when war was imminent but after disarmament or before rearmament. The most important examples of these air panics took place in 1913, 1922 and 1935.

Before the First World War Britain had only a small air force compared with Germany, its most likely opponent.¹ In particular, the RFC had nothing to match the latter's impressive fleet of Zeppelins, giant airships which were the only aircraft then capable of strategic bombing – a fact not lost on the conservative press, which regularly attacked the government for its lethargy in the matter.² Then, on the night of 14 October 1912, a curious event took place. An airship was seen and heard over the naval garrison town of Sheerness on the Thames Estuary. No British aircraft, military or civilian,

¹On the other hand, David Edgerton points out that in 1914 Britain actually had the largest air force out of all the great powers, relative to the size of its army: Edgerton, *England and the Aeroplane*, 10.

²See Gollin, *The Impact of Air Power*, 204-22.

was known to be aloft at the time. In Parliament, Conservative MPs asked questions of Liberal ministers about the Sheerness incident, insinuating that a Zeppelin had invaded British skies without even being challenged. But worse was to come, for in February and March 1913, dozens of reports of ‘phantom airships’ came from all over the country, from South Wales to the Orkneys.³ Due to the dubious nature of the phantom airship reports, most newspapers initially took a cautious or lighthearted approach to them. But soon the sheer number of sightings temporarily overwhelmed scepticism, particularly among conservative newspapers already concerned about the German threat. It was therefore widely agreed that the mysterious visitors were ‘aircraft belonging to the German War Department’, as the *Standard* put it.⁴ Left-wing opinion was less easily swayed, but at the height of the scare, even Radical and Labour newspapers accepted that Germany was the most likely origin of the airships, rather than the workshop of a secretive British inventor as they had previously tended to believe.⁵ Britain’s aerial inferiority could not have been demonstrated more dramatically, and airpower advocates were quick to seize the opportunity to agitate for a huge increase in expenditure on aviation.

The next air panic, in 1922, was triggered by the realisation that France had far outstripped British airpower. At the end of the First World War Britain possessed the world’s largest air force, and the only independent one, comprising more than 220 squadrons.⁶ But this force was rapidly demobilised, reflecting a general assumption that no war was likely for the immediate future and a desire for economy after the end of the postwar eco-

³See Gollin, *The Impact of Air Power*, 223-7, 238-44; Holman, ‘The gathering cloud of rumour’, 21-35. The actual identity of the mystery aircraft is still unknown, but the most probable explanation in most cases is that they were not aircraft at all, but misperceptions of natural phenomena, interpreted within the framework of the presumed German aerial menace. A similar, though smaller, wave of mystery aircraft – variously termed ‘scare-ships’, ‘phantom airships’, ‘midnight airships’, and so on – appeared in British skies in May 1909, shortly after the dreadnought panic. See Alfred Gollin, ‘England is no longer an island: the phantom airship scare of 1909’, *Albion: A Quarterly Journal Concerned with British Studies* 13 (1981), 43-57; Gollin, *The Impact of Air Power*, 49-63; Holman, ‘The gathering cloud of rumour’, 14-20; David Clarke, ‘Scareships over Britain: the airship wave of 1909’, *Fortean Studies* 6 (1999), 39-63.

⁴‘The airship peril’, *Standard*, 25 February 1913, 8.

⁵See, e.g., ‘The war in the air’, *Daily Herald*, 27 February 1913, 6.

⁶See James, *The Paladins*, 69-73.

nomic boom. By 1922, according to P. R. C. Groves in a series of articles in *The Times* in March 1922, only 6 combat squadrons were stationed in Britain. By contrast, France was building up a force of 2000 aeroplanes in 220 squadrons. Even though tensions between the two Entente partners were increasing – particularly over French insistence that Germany pay reparations in full and on schedule – France itself was only rarely considered to be a threat in contemporary discussions of bombing. But the size of its air force showed what was possible, what Britain was not achieving, and particularly what Germany might attain in the near future, if vigilance were relaxed. Groves timed his articles to coincide with the annual Air Estimates debate in Parliament and called for aerial rearmament on the basis of the convertibility of civil aircraft.⁷

The third major air panic, and the best-known, came in response to the increasing evidence of Nazi Germany's aerial rearmament in defiance of the Versailles Treaty. As early as November 1933, the *Daily Mail* had warned of this danger, and urged the creation of a 5000-aircraft RAF. Stanley Baldwin's pledge that Britain would maintain air parity with the largest European air force did not prove satisfactory to his air-minded critics, since he did not at first accept that Germany was rearming at a rapid rate. In November 1934 he predicted to the House of Commons that in a year's time, the RAF would still have a 50% margin of superiority over the German air force, once operational reserves were taken into account. But in May 1935 Goering confirmed the existence of the Luftwaffe, and Hitler casually – and falsely – claimed to the Foreign Secretary, Sir John Simon, that it had already reached parity with the RAF.⁸ After Hitler's claim surfaced in the press, the Prime Minister was forced to admit to Parliament that he had greatly underestimated German

⁷See p. 55. The French air menace was first exploited by Hugh Trenchard in October 1921, in order to ensure the survival of the RAF: see John Ferris, 'The theory of a "French air menace": Anglo-French relations and the British Home Air Defence programmes of 1921-25', *Journal of Strategic Studies* 10 (1987), 65-6. However, this was done in the privacy of Whitehall and did not reach the notice of the public. Groves was the British Air Adviser to the Conference of Ambassadors in Paris, and did not retire from the RAF until the following year: it may be that he borrowed the notion of a French air menace from Trenchard. See Brett Holman, 'The shadow of the airliner: P. R. C. Groves, the German air menace and the origins of the knock-out blow, 1916-1922', forthcoming.

⁸See Bialer, *The Shadow of the Bomber*, 68-70.

air strength and announced a trebling of the RAF's first-line strength over the next two years. Conditions were therefore ripe for a sustained panic about Britain's aerial weakness.⁹

Emergence

The fundamental concern for most participants in the air panics was Britain's inferiority in the air. As the *Standard* wrote in 1913:

For the moment it is unquestionable that we are in a position of disastrous and humiliating inferiority. There is no comparison between our aerial fleet and those of France and Germany; and it is questionable whether we are even equal in this respect to Austria, Russia and Italy.¹⁰

The same concern over relative standings was evident in the later air menaces. By the mid-1930s it was a common lament of Conservative commentators that Britain was fifth or sixth in air strength out of the major powers. For example, at the end of 1934, a cartoon in the *Saturday Review* depicted Britain as an 'also ran' in the 'air power race', behind Germany, Russia, France, Italy, the United States and Japan.¹¹ In 1922 even an automotive industry journal could bemoan the fact that 'The United States, Italy, Japan, Greece, Roumania – every country is going ahead [in the air] except Great Britain'.¹²

Germany was nearly always regarded as the primary danger by participants in the air scares, even in 1922. For while France's 220 squadrons were often mentioned, they were generally regarded as an indication of what was possible, then and in the future, and not as a threat to Britain in and of themselves. German civil aviation was booming, even under the temporary restrictions imposed by the Versailles Treaty. The *Daily Mail* noted that

⁹Senior Foreign Office officials were responsible for leaking the parity claim to the press. See Cockett, *Twilight of Truth*, 20-1.

¹⁰'The airship peril', *Standard*, 25 February 1913, 8.

¹¹*Saturday Review*, 15 December 1934, 514.

¹²*Motor News*, 1 April 1922; quoted in Groves, *Our Future in the Air* (1922), 98.

‘the German civil machines are more than twice as numerous as the British’, which was disturbing since the Allied Commission on Air Questions had pointed out in 1919 that civilian aircraft could easily be turned to warlike purposes.¹³ *The Times* gloomily predicted that:

For commercial reasons, if for no other, now that they have the right to construct commercial aeroplanes, the Germans will not let the grass grow under their feet, and the facility with which civil machines can be converted into war-planes [...] is notorious.¹⁴

By the Nazi period, apprehension about secret German aerial rearmament had only grown. Several newspapers, such as the right-wing *Saturday Review*, had been claiming for some time that Germany’s air force was ‘already many, many times stronger’ than the 20,000 aircraft it had possessed at the Armistice in 1918, ‘and is increasing her power by hundreds of machines a month’.¹⁵ Only slightly less hyperbolically, at the start of December 1934 Lord Rothermere asserted in the *Daily Mail* that Germany had 10,000 aircraft.¹⁶ Such figures were vastly inflated, even taking into account distinctions between first-line aircraft, operational reserves and total reserves: total production of military aircraft in Germany for the years 1934 and 1935 was only around 5000, of which many were trainers.¹⁷ But even so they did permit the appearance of prescience on the part of the press after Baldwin’s admission to Parliament that the German air force was stronger than he had previously claimed – already on a level of parity with the RAF’s strength in Britain, or about 800-850 first-line aircraft – for this was in itself a remarkably quick reversal in Germany’s aerial fortunes.¹⁸ The prospect of an aerial arms race loomed, with grave implications for Anglo-German relations, just

¹³‘Our lost air power’, *Daily Mail*, 22 June 1922, 8.

¹⁴‘Germany and civil aviation’, *The Times*, 20 June 1922, 17.

¹⁵*Saturday Review*, 15 December 1934, 515.

¹⁶Rothermere, ‘Make the youth of England air-minded!’, *Daily Mail*, 4 December 1934, 15. The figure was repeated in *Daily Mail*, 29 April 1935; quoted in *Arming in the Air: The Daily Mail Campaign* (London: Associated Newspapers, 1936), 53. The ludicrous inflation of these numbers over time is the aerial equivalent of the ever-increasing numbers of supposed German soldiers living in Britain before 1914: see p. 219.

¹⁷See Corum, *The Luftwaffe*, 163-4.

¹⁸‘Mr. Baldwin on defence’, *The Times*, 23 May 1935, 9.

as the naval arms race before 1914 had led to mutual distrust between the two nations. In fact, the 1913 air scare was itself in many ways a continuation of, or even a replacement for, the waning naval panics.¹⁹ Even the Navy League, which up to this point had focused on dreadnoughts, formed an aviation committee charged with the task of ‘impressing upon the nation the urgency of aerial defence’.²⁰ Airminded opinion in the aviation journals and the patriotic press concurred. *Flight* lamented Britain’s lethargy in airship development ‘while Germany rapidly and certainly builds huge craft, capable of taking the North Sea in their stride and which, if report is to be trusted, have already paid us visits by night’; the *Standard* fretted about the possibility of an international incident resulting from a Zeppelin being shot down by British guns.²¹ The *Review of Reviews* published a map entitled ‘The black shadow of the airship’, with concentric circles showing which parts of Europe were within range of the Zeppelin, including virtually the whole of Britain.²² By 1913, therefore, Germany was already well-established as the primary danger to Britain in the air, a role it was to continue to play for the next three decades.

The threat believed to be posed by the German air menace naturally depended upon the theories of aerial warfare prevalent at the time. In 1913, the concept of the knock-out blow was as yet embryonic, and so a quick collapse of British resistance in wartime was not widely feared. Instead, commentators tended to refer in general terms to the possibility of airships ‘being used to do a great deal of mischief’, as a leader in *The Times* put it.²³ The most sophisticated argument was that Zeppelins could be used to destroy key arsenals and dockyards at the outbreak of war, and thereby disrupt the mobilisation of the Army and Navy. For example, the aeronautical corre-

¹⁹Cf. Excubitor, ‘Sea and air command: Germany’s new policy’, *Fortnightly Review* 93 (May 1913), 868-80. Francis Hirst suggested that ‘the Panic-mongers decided that the naval situation was too unpromising, and fell back upon the Air’: Hirst, *The Six Panics*, 103.

²⁰‘Navy League’, *Standard*, 6 March 1913, 9.

²¹‘Our aerial fleet’, *Flight*, 1 February 1913, 107; ‘The airship peril’, *Standard*, 25 February 1913, 8.

²²The map was reprinted in *Flight*, 1 March 1913, 248.

²³‘Aerial defence’, *The Times*, 12 February 1913, 7.

spondent for the *Standard* predicted that German airships attacking British arsenals would sacrifice fuel for the return journey, so that they could carry enough bombs such that 'only very moderate accuracy would be required to annihilate any arsenal in existence at the present moment'. It was further assumed that Germany could use its six large airships to destroy Britain's four major arsenals, with two left in reserve for use against the Royal Aircraft Factory at Farnborough and the Rosyth naval base.²⁴ In contrast, the scare in 1922 developed shortly after the publication of Groves' series of articles on Britain's aerial danger, and newspaper editors and aviation experts were quick to employ the knock-out blow concept. The *Observer*, a Conservative newspaper, argued that:

It should require no saying that the most formidable attacks of our past experience were trivialities in comparison with what the massed air forces of the morrow could achieve. They could wipe out in a day the executive nerve-centres of our whole national organization. They could cut the arteries of communication and transport, destroy every rallying-point as fast as it arose, and reduce the community to a fortuitous and helpless concourse of human atoms.²⁵

The *Daily Express* was another Conservative newspaper which accepted the premises of the knock-out blow. It believed that 'London could be attacked in two to four hours and laid in ruins by a thousand planes'.²⁶ The threat was believed to be much the same in the following decade. The *Saturday Review* repeatedly warned against the danger of the new German air force. It drew upon L. E. O. Charlton's just-published *War from the Air* for its description of the horrors of a sudden air attack on London, and warned that there would be 'no muddling through next time' as there had been in the last war. The Prime Minister and his Cabinet were even accused of treason: 'Never in the history of this country has there been such a ghastly betrayal,

²⁴'Peril of the air', *Standard*, 7 March 1913, 9.

²⁵'The supreme blunder', *Observer*, 26 March 1922, 12.

²⁶'A no-power standard', *Daily Express*, 17 June 1922, 6.

for [the weakness of the RAF] means not merely defeat but annihilation'.²⁷ More than in 1922, writers stressed the danger of gas and fire. Boyd Cable, for example, argued that an enemy could easily drop 300 tons of incendiaries in one night, which by extrapolation from the experience of the First World War meant that about 4500 fires could be started, which would overwhelm the fire services and destroy London 'as the seat of Government, a vital centre of rail and other communications and of military control'. Similarly London was almost completely unprepared for the ordeal of being inundated by 400 tons of gas. Along with the damage to industry and infrastructure, Cable predicted, the enemy would have 'killed or injured by gas, fire and explosives (and possibly or probably by casualties in panic-driven crowds) a few hundred thousand men, women and children'.²⁸

Reactions

Press and other reactions to the German air menace were largely divided along political lines. Broadly speaking, whereas the left wanted to limit or even abolish the air weapon, the right argued that Britain's aerial strength should be increased to defend against the threat. In November 1934, a leading article in the *Daily Mail* invoked the memory of Nelson in an effort to rouse the government to its task:

Strength, overwhelming strength, is the essential of security. That alone on the sea kept this country secure between Trafalgar and the Great War. It is a duty to-day to be strong in the air. Once more England expects that the Government this day will do his [sic] duty.²⁹

The following week, the same paper set out precisely what this meant: 'To-day we need at least 20,000 aeroplanes'.³⁰ During the Stresa conference, when

²⁷Kim, 'Wilfully blind', *Saturday Review*, 4 May 1935, 551.

²⁸Boyd Cable, 'Bombed!', *Saturday Review*, 30 March 1935, 401. Boyd Cable was the pseudonym of Ernest Andrew Ewart, a writer on military and naval history.

²⁹"England expects ...", *Daily Mail*, 5 November 1934, 14.

³⁰'We now need 20,000 warplanes', *Daily Mail*, 13 November 1934, 12.

Britain, France and Italy cast about for a solution to the German problem, *Flight* also spoke of air rearmament as a duty, as ‘such an agreement would lack conviction if there were not strength behind it’.³¹ It soon joined the *Daily Telegraph* in calling for an acceleration in the RAF rearmament programme – overcoming its previously stated desire to keep taxes low in order to allow industry to expand and provide a surer base for future expansion.³² Similarly, in June 1922 the *Saturday Review* declared that the RAF ‘must be not only enlarged but improved, for the danger of sudden attack is real, and could not to-day be adequately countered’.³³ Alternative means of increasing British airpower were also canvassed. *The Times* at this time supported the analysis of its regular air defence commentator, P. R. C. Groves, who believed that civilian aircraft such as airliners could be easily converted into effective bombers.³⁴ He envisioned a relatively small professional air force which would lead a larger fleet of converted civilian aircraft into war. In this way a much bigger force could be fielded at the outset of war than Britain could otherwise afford, and in peacetime the civilian aircraft could be put to good use carrying passengers and cargoes abroad. According to Groves, unless such a ‘wider view [...] more suitable to our national strength, our limitations and our idiosyncrasies’ was adopted, Britain’s air supremacy could not be regained, and so civil aviation needed to be encouraged and supported.³⁵

An important exception to these politically-determined reactions came in 1913. The patriotic press, convinced of the RFC’s utter inadequacy in the face of the airship menace, started a campaign to increase its strength. The *Globe* accused the Liberal government of wilful neglect of the air question and noted that ‘Experts on the aeronautical question have declared that noth-

³¹‘Accelerate!’, *Flight*, 18 April 1935, 407.

³²‘Expansion’, *Flight*, 30 May 1935, 577-8; cf. ‘The Air Estimates’, *Flight*, 8 March 1934, 209.

³³*Saturday Review*, 24 June 1922, 646.

³⁴See p. 154.

³⁵P. R. C. Groves, ‘British air policy’, *The Times*, 1 July 1922, 15. See also C. C. Turner, ‘Our urgent need: air power’, *Nineteenth Century and After* 92 (August 1922), 212-9, who discussed the bombs vs. battleships controversy, the possibility of conversion of civilian aircraft to military use, and the need for a Ministry of Defence.

ing less than the immediate expenditure of a million [pounds] will suffice'.³⁶ The Navy League took up the call as well.³⁷ *Flight* did not go so far, but thought that an extra £250,000 would be well spent, if it were used to 'make perfect what we at present possess' rather than for a hasty and ill-considered expansion.³⁸ Unsurprisingly, an anonymous Army official (at Farnborough, the location of the Royal Aircraft Factory) was quoted as saying that 'We want more and larger airships' in light of the mystery airship visitations.³⁹ And Claude Grahame-White and Harry Harper wished for 'a defensive fleet of aeroplanes [...] appreciably stronger, numerically and in armament, than that of a prospective enemy'.⁴⁰ The *Spectator* mocked the current fashion for panic – 'Our countrymen are at their worst when they see an airship in every light or star, and a spy in every restaurant' – but conceded that 'Our business is to build a fleet of dirigibles adequate for our protection as quickly as possible'.⁴¹ What is interesting about the 1913 air panic is the relative uniformity of opinion across the political spectrum, for the left also accepted the need for increased air defences. The *Manchester Guardian* cautioned that there was no need for panic, but admitted that 'the inadequacy of our aircraft service should certainly be discussed at length in Parliament'.⁴² Even the Labour *Daily Herald*, sympathetic to pacifism and hostile to Jingoism, could publish 'An indictment of our present organization'.⁴³

This consensus did not return after the First World War. Now that strategic bombing was coming to be understood as largely directed against civilians, attempts were made to find some way of preventing the next war in the air from happening at all. Most did not yet go so far as the novelist John Galsworthy, who thought that by 'far the best way' to do this would be to 'Secure by general consent of nations and rigid safeguards total

³⁶'Government and aviation', *Globe*, 26 February 1913, 7.

³⁷'Navy League', *Standard*, 6 March 1913, 9.

³⁸'The million', *Flight*, 8 March 1913, 272.

³⁹He was however unusual in believing that they were of French, not German, origin. "'England wants more airships"'. *Standard*, 27 February 1913, 9.

⁴⁰Claude Grahame-White and Harry Harper, 'Our peril from above', *National Review* 61 (April 1913), 247.

⁴¹*Spectator*, 1 March 1913, 343.

⁴²'Airships and visions of airships', *Manchester Guardian*, 27 February 1913, 6.

⁴³L. Blin Desbleds, 'Aerial defence', *Daily Herald*, 6 March 1913, 7.

suppression of air machines for any purpose whatever'. He admitted that this was probably not feasible, and so resigned himself to a ruinously expensive armament programme.⁴⁴ But several further letters to the editor of *The Times*, including one from the wife of an airman who had perished in the R.38 disaster a year earlier, rebuked Galsworthy for his lack of faith in progress – a faith which 'we widows of pioneers will teach our children'.⁴⁵ More common were calls for multilateral disarmament. In a leading article, the *Manchester Guardian* welcomed the recent ratification of the Washington Treaty on naval limitation, and ventured that 'The "scare" which recently has been raised about the air can only be met, in the end, by corresponding provisions for aerial disarmament, and these are not possible without bringing Germany and Russia into the agreement'. It warmly endorsed a draft treaty to this end which had just been submitted to a League of Nations commission by Lord Robert Cecil, a committed internationalist.⁴⁶ By the time of the 1935 scare, the failure of the Disarmament Conference made such grand schemes unlikely – though the *Manchester Guardian*, at least, was still hopeful⁴⁷ – but at the same time made localised agreements more attractive, or at least more feasible. The most promising such initiative was the so-called air Locarno, or Western air pact, proposed jointly by France and Britain in February 1935. This envisaged mutual guarantees between the signatories to the Locarno pact (Britain, France, Germany, Italy and Belgium), committing each country to come to the aid of any pact members attacked from the air by bombing the aggressor nation itself.⁴⁸ After a favourable initial response from Hitler, many newspapers threw their weight behind the air Locarno. As it did not necessarily entail any disarmament, right-wing opinion could accept it: the *Daily Mail* described it as 'a welcome agreement' while at the same time warning that 'A new air pact must not be made an excuse

⁴⁴John Galsworthy, *The Times*, 4 July 1922, 17.

⁴⁵Hilda E. Pritchard, *The Times*, 6 July 1922, 17. On the R.38, see Ces Mowthorpe, *Battlebags: British Airships of the First World War* (Stroud: Sutton Publishing, 1998), 141-3.

⁴⁶'Towards disarmament', *Manchester Guardian*, 8 July 1922, 10.

⁴⁷'Air forces', *Manchester Guardian*, 1 June 1935, 10.

⁴⁸See p. 178.

for neglecting to augment the British Air Force very largely and at once'.⁴⁹ Although formally outside the auspices of the League of Nations the air Locarno could also be seen as strengthening collective security, which appealed to the *Spectator*, particularly since:

There are only two countries from whom we could have any reason to fear an aerial attack [France and Germany], and under this arrangement we should be sure of the active support of either of them against the other. Under the original Locarno we only gave. Under this arrangement we should not only give but get.⁵⁰

But equally, the air Locarno could be cast as compatible with disarmament, on the basis that countries which felt secure could be persuaded to accept a lower standard of strength, and so writers of the left and the centre were also enthusiastic about the idea. As one Quaker doctor argued in a letter to the editor of the *Manchester Guardian*:

If Germany knew that she could rely on the help of a Britain 75 per cent as strong as at present would she fear Russia? If France knew for certain that the same strength would go to her aid if attacked could she not afford to reduce her armament 25 per cent?

The alternative, he suggested, was an arms race and war.⁵¹ An air pact would also recognise Germany's right to rearm, and so go a long way towards removing the onerous Versailles restrictions widely regarded by the left as a threat to the peace of Europe. An alternative approach was to accept that both Britain and Germany were planning to arm to parity with the French air force, but to point out that if France could be persuaded to disarm to perhaps 500 first-line aircraft, then each country would have reduced its armaments but would feel just as safe as if it possessed 1500 aircraft. This was suggested by the London correspondent of the *Manchester Guardian*,

⁴⁹'A welcome agreement', *Daily Mail*, 4 February 1935, 14.

⁵⁰'Buttressing peace', *Spectator*, 8 February 1935, 196.

⁵¹E. Falkner Hill, *Manchester Guardian*, 29 May 1935, 20.

endorsed by Gerald Bailey of the National Peace Council, and proposed in Parliament by Sir Herbert Samuel, leader of the Liberal Party, all to no avail.⁵²

Other – relatively few – reactions focused on the preparations of the British government itself. For example, the *Daily Mail* wondered why nothing had been done for the defence of London:

Where are the concrete shelters? Where is the organisation to meet the attack by bombs or poison gas? The protection of the greatest city in the world and the most vulnerable is entrusted to Territorial troops, seriously below strength and notoriously lacking the equipment of anti-aircraft guns and modern searchlights.⁵³

During the 1922 scare, some newspapers referred to the apparent ‘jealousy and wire-pulling’ between the three Services; the *Evening Standard* proposed the creation of ‘a Supreme Board of Control over Army, Navy, and Air, to decide their proportion, their duties, and to see there is a system of co-operation, which just now is remarkably lacking’.⁵⁴ The *Sunday Times* likewise believed that between the competing sets of claims of the Services, ‘we seem set for an interminable and confused discussion out of which the last thing likely to emerge is an adequate Air Force’. It also favoured a unified Ministry of Defence.⁵⁵ The ‘jealousy and wire-pulling’ referred, in large part, to a controversy over the vulnerability of battleships to bombing which had erupted in the letter columns of *The Times* and into the leading articles of other newspapers. Although this was not directly connected to the knock-out blow, it did originate in the exaggerated claims of airpower supporters such as Admiral Sir Percy Scott, the commander of London’s AA defences in 1915-6, who believed in a policy of substitution – that the RAF could perform the functions of the older Services and therefore replace them. This in turn was merely the public manifestation of tactics used by Air Marshal

⁵² *Manchester Guardian*, 24 May 1935, 10; Gerald Bailey, *Manchester Guardian*, 25 May 1935, 10; ‘Limitation in the air’, *Manchester Guardian*, 25 May 1935, 13.

⁵³ ‘Asking for trouble’, *Daily Mail*, 14 December 1934, 12.

⁵⁴ *Evening Standard*, 10 July 1922; quoted in Groves, *Our Future in the Air* (1922), 87.

⁵⁵ *Sunday Times*, 9 July 1922; quoted in Groves, *Our Future in the Air* (1922), 109.

Sir Hugh Trenchard in order to ward off the blow of the Geddes Ax and to protect the RAF's budget at the expense of the Army and the Navy. Navalists fought back by arguing that the Fleet Air Arm should be returned to the Navy from RAF control, a battle they eventually won in 1937.⁵⁶ In the straitened financial circumstances of the postwar world, the *Spectator* was particularly keen to promote economy in government spending, an important factor in its support of Groves' scheme of a convertible striking force as an alternative to a costly air force on the French pattern.⁵⁷

Various groups tried to influence the response to the air panics. The examples of the National Peace Council and the Navy League have already been noted.⁵⁸ During the 1922 panic, the Parliamentary Air Committee, a ginger group of airminded MPs headed by William Joynson-Hicks, sent a deputation to see the Prime Minister and sit in on a meeting of the CID. Its views on the necessity for an immediate increase in RAF strength were widely publicised in the press.⁵⁹ The secretary of the Air League of the British Empire, Douglas Gordon, wrote to the Air Ministry in support of Groves' scheme, without any success; but at least *The Times* published the correspondence.⁶⁰ Usually, however, the Air League's efforts were concentrated behind the scenes and were not visible to the public, such that in 1913 the *Globe* could declare that 'For all practical purposes it might be dead'.⁶¹ To fill this gap, in 1935 Lord Rothermere founded the National League of Airmen (NLA) to 'make Britain air-minded and to make the rulers of Britain responsive to that air-mindedness'. The motivation was the alleged impatience of the British people for RAF expansion, which 'has so far had no fit vehicle for expression'.⁶² J. A. Chamier, Secretary-General of the Air League, took im-

⁵⁶See Smith, *British Air Strategy between the Wars*, 22-8.

⁵⁷*Spectator*, 19 August 1922, 227.

⁵⁸See pp. 241 and 234.

⁵⁹See, e.g., 'British air power', *The Times*, 10 July 1922, 10, which also summarises the activities of the committee and lists its leading members.

⁶⁰'Air power', *The Times*, 16 June 1922, 10.

⁶¹'An air fleet', *Globe*, 28 February 1913, 5. The Aerial League (as it then was) quickly put its efforts on record, such as contacting 1300 local government officials in an attempt to raise funds for airships: see 'Our air fleet', *Globe*, 1 March 1913, 10.

⁶²'A nation of airmen', *Daily Mail*, 31 January 1935, 10. The most thorough account of the NLA is Rothermere, *My Fight to Rearm Britain* (London: Eyre & Spottiswoode, 1939),

mediate offence at the presumptuous way in which the NLA described itself as *the* Air League, while the editor of *Flight* similarly denied the necessity for another organisation with much the same role as the Air League.⁶³ In the event, neither league had much of a direct impact on the course of the scares.

Resolution

The air panics tended to subside when the government was seen to be doing something about the threat. A partial exception to this was the 1913 scare. Liberal newspapers did not accept the reality of the phantom airships, except briefly at the very peak of the scare, and were far more likely to attribute the whole affair to a hoax or mass delusion. The *Economist* linked the episode with an earlier, failed attempt to launch a naval panic, and added that:

The terrible apparitions which afflicted the *Daily Mail* and its kind might have been fireships or kites sent up with lights attached for the purpose of amusing or terrifying the public. And we are inclined to think that the hunter after truth will have to choose between [the planet] Venus, fire-balloons, and whisky.⁶⁴

Compared with the Conservative press, Liberal newspapers were correspondingly more supportive of the Liberal government, and of its attempts to control British airspace through the Aerial Navigation Act (1913). This was rushed through Parliament in less than a week, and gave the government powers to shoot down aircraft flying over prohibited areas. A leading article in the *Manchester Guardian* declared the regulations implementing the Act

89-96, which, as it happens, was ghost-written by Collin Brooks, who had been heavily involved in running the NLA. See N. J. Crowson, editor, *Fleet Street, Press Barons and Politics: The Journals of Collin Brooks, 1932-1940* (London: Royal Historical Society, 1998), 11.

⁶³'The two Leagues', *Flight*, 21 February 1935, 202; 'A dictator's rights', *Flight*, 21 February 1935, 187-8.

⁶⁴'The airship hoax and European dangers', *Economist*, 1 March 1913, 506. The editor of the *Economist* at this time, F. W. Hirst, was a leading Radical who wrote the only substantial contemporary account of the phantom airship scare: Hirst, *The Six Panics*, 103-18.

to be 'prudent', an opinion not shared by Conservative newspapers.⁶⁵ The *Globe* derided them as 'not worth the paper on which they are written' as without an effective air force they were unenforceable, and as the *Standard* noted the following day, 'rules which cannot be enforced are as valueless as a law without penalties for breaking it'.⁶⁶ The end of the scare truly came when the sheer number and variety of phantom airship reports made it difficult to believe that they were all real; and if some of them were false, perhaps they all were. Soon, far fewer reports of sightings were being published, and those that were were given a sceptical slant. For example, the *Globe* published three mutually exclusive accounts of a phantom airship sighting over Holborn in London, and invited readers to 'take your choice': firstly, that credulous passers-by were told that an airship was visible and believed that they could see it themselves; secondly, that Boy Scouts had sent up a toy balloon carrying a light; or thirdly, that there was in fact an airship, but it belonged to the Army.⁶⁷ After the panic subsided, conservatives continued to push for a £1 million air fleet, but in a more subdued fashion.

The reasons for the end of the 1922 air panic are harder to discern. The obvious conclusion is that Lloyd George's announcement of the formation of the Home Defence Air Force in early August satisfied Conservative opinion that Britain's air defences were being attended to. This initially comprised some 500 aircraft in 15 Regular and 5 Territorial squadrons. And it is true that *The Times* did predict that the news 'will be received by the Royal Air Force and the country at large with a feeling of profound satisfaction and relief', and congratulated for their perseverance 'GENERAL GROVES, and all those who have laboured to point out the utter defencelessness of this country against an invasion by hostile aeroplanes'.⁶⁸ But Groves himself – in an article subtitled 'Policy of neglect and panic. A defenceless country' – wrote that, although they were welcome in themselves, 'none of these measures touch the

⁶⁵'Air law', *Manchester Guardian*, 5 March 1913, 6. The bill received its first reading on 8 February and the Royal Assent on 14 February.

⁶⁶'Air peril', *Globe*, 5 March 1913, 7; 'Regulation of aircraft', *Standard*, 6 March 1913, 8.

⁶⁷'Take your choice', *Globe*, 8 March 1913, 2.

⁶⁸'Strengthening the Air Force', *The Times*, 4 August 1922, 13.

root of the problem', since by his estimate Britain needed to raise a force of least 100 squadrons, or their equivalent, in order to regain supremacy in the air. And as an air force of this size would be prohibitively costly to maintain in peacetime, he argued again that only civilian aircraft could fill the gap at reasonable cost.⁶⁹ The *Spectator* was inclined to agree with Groves, since 'Thirty-two squadrons are not an appreciably greater protection against 220 than are twelve'.⁷⁰ Other actions taken by the government in relation to air defence, such as the establishment of two Territorial anti-aircraft brigades for the defence of London, do not seem to have attracted much attention.⁷¹ It may be that the establishment of the HDAF was enough for the moment and, as Parliament went into recess for the summer, press attention moved on to other crises such as the civil war in Ireland and the collapse of the German mark.⁷²

Finally, the 1935 air panic largely subsided after the announcement that the RAF was to be expanded. *Flight* welcomed the news as signifying, at long last, a final break with a discredited policy: 'To speak of unilateral disarmament is [...] like remaining a free trader in a protectionist world'.⁷³ *The Times* also applauded Baldwin's speech for its measures to restore air parity as well as the positive response to Hitler's overtures regarding an air Locarno, and concluded that 'In all these matters [of aerial rearmament] the Government will need the support as well as the financial assistance of the nation which has approved in principle the measures contemplated for its defence'.⁷⁴ A leading article in the *Spectator* saw more hope in the

⁶⁹P. R. C. Groves, 'Air power', *The Times*, 14 August 1922, 13.

⁷⁰*Spectator*, 19 August 1922, 227. Note that the implication here is that it is France itself which is the threat, not Germany.

⁷¹See, e.g., 'Air defence of London', *The Times*, 12 July 1922, 10.

⁷²Germany's enormous financial difficulties made it appear less threatening, and so may have played a part in reducing the level of concern over the strength of the RAF. On the other hand, differences over how to handle the German moratorium on reparations payments threatened to rupture the Entente and therefore might be expected to lead to speculation about conflict with France. On the reparations problem, see Steiner, *The Lights that Failed*, 217-8.

⁷³'Expansion', *Flight*, 30 May 1935, 577.

⁷⁴'Mr. Baldwin's response', *The Times*, 23 May 1935, 17. As a general election had not been held since 1931, the meaning of this last remark is unclear, unless it refers to a popular clamour for air defences.

apparent enthusiasm of both governments for an air pact, but accepted that a rough parity between the air forces of Britain, Germany and France would be necessary for it to work.⁷⁵ By contrast, Clement Attlee, deputy leader of the Labour Party, argued that the quest for parity was misguided as it undermined the logic of collective security:

The whole point of the collective system is that the force at the disposal of the upholders of the rule of law should collectively be stronger than that of any potential aggressor, not that the force of every individual State should be equal to that of any other.⁷⁶

At the other end of the political spectrum, the *Daily Mail* declared that the new programme was ‘**still inadequate**. It should have been in hand years ago’.⁷⁷ Potentially, therefore, the air menace could re-emerge, should favourable circumstances arise.

Conclusion

These kinds of air panics, the air menaces, were relatively straightforward. Though they took place at times of international uncertainty, war did not seem imminent. Thus calls for an increase in British air strength were credible, as there was time to repair the deficiencies. Naturally, such proposals came most often from conservatives, but the additional financial burden to the state that this entailed was surprisingly unproblematic. In 1913 this figure was small, and would have been the responsibility of the Liberal government to find. In 1922 and 1935, coalition governments were in power, but conservative publications showed little hesitation in embarrassing Conservative ministers by urging yet higher spending. Even P. R. C. Groves’ plan for cheap airpower based on convertible airliners received relatively little support outside of *The Times*, despite his role in sounding the alarm in 1922 and in popularising the knock-out blow.

⁷⁵‘Air peril and Air Pact’, *Spectator*, 31 May 1935, 908.

⁷⁶C. R. Attlee, *The Times*, 28 May 1935, 17.

⁷⁷‘The new air programme’, *Daily Mail*, 23 May 1935, 10; emphasis in original.

The use to which the expanded air force would be put was generally thought less important than how many aeroplanes it would possess. But it is clear that the creation of a deterrent (or reprisal) force was the preference of most participants and, despite the brief flurry of anxiety about France's growing airpower in 1922, it was to be directed against Germany. The reason for this is plain enough for 1935, and for 1913 too, despite a relative thaw in Anglo-German relations: the rising Continental power was always to be resented and resisted. In 1922, this applied more to France than to Germany, but apparently recent history could not be ignored. Evidence of German violations of the Versailles restrictions on its aviation, both civil and military, added weight to suspicions that Britain's recent enemy, though cowed, was merely biding its time and would strike when the time was right. A deterrent force was needed to restore the aerial balance of power.

Internationalist solutions attained any sort of popularity only in the 1935 panic, when disarmament and pacifist sentiments were still popular, and before the League of Nations was discredited. But even then the idea most commonly discussed was the air Locarno, which was ambiguous and could be interpreted to mean disarmament or rearmament as desired. ARP was rarely mentioned during the air menace panics. This is perhaps to be expected in 1913, before aerial bombardment had actually been experienced by the British and before the development of the knock-out blow concept increased the expected losses from air attack. But it is somewhat surprising for 1922 and 1935. A thorough ARP system was, perhaps, too disruptive and too expensive to be contemplated in relatively peaceful times. Even then resistance was the preferred option.

Chapter 8

Barcelona, Canton and London, 1938

The destruction of the Basque town of Guernica on 26 April 1937 is often held to mark a turning point in the British public's awareness of the threat of aerial bombing.¹ It is true that the raid by the German Condor Legion, which killed hundreds of civilians, was widely reported in the British press, sometimes as a portent of things to come. For example, in a speech given the following month, Foreign Secretary Anthony Eden claimed that 'if that kind of thing is intensified on a large scale, it is going to be a terrible future for Europe to face'.² But the Archbishop of York's response was more characteristic: he urged that 'the whole civilized world should unite to express its abhorrence of such methods of warfare'.³ That is, objections to Guernica were generally framed in terms of morality, rather than self-interest.

In fact, Guernica was only one event – and not the most important – among many in the late 1930s which apparently served to demonstrate that the bombing of civilians was rapidly becoming an accepted feature of modern warfare, as had long been foretold by airminded prophets. While these inci-

¹See, e.g., Robert Wohl, *The Spectacle of Flight: Aviation and the Western Imagination, 1920-1950* (Carlton: Melbourne University Press, 2005), 221. On the bombing of Guernica, see Ian Patterson, *Guernica and Total War* (London: Profile Books, 2007), 24-55 and Corum, *The Luftwaffe*, 198-200.

²'Mr. Eden and Guernica', *Daily Mail*, 7 May 1937, 9.

³"'Massacre from the air'", *The Times*, 30 April 1937, 13.

dents did not themselves develop into fully-fledged defence panics, because Britain itself was not under threat, they did serve to increase awareness of the dangers of bombing and, to a degree, anxiety for the future. They can perhaps be considered as proto-panics, or failed panics. The Spanish Civil War provided many examples, beginning with the Nationalist bombardment of Irún in August 1936, and then Madrid in late November.⁴ Even before Guernica, other small towns and villages just behind the front lines had fallen victim to similar attacks from the air which aimed at strangling supply lines and shattering morale.⁵ Japan, too, was starting to carry out air raids on urban areas in its invasion of China, which began in July 1937.

Air raids became increasingly common – and bloody – in 1938. Many small towns were victims of bombing in the Nationalist drive to the Mediterranean early in 1938, and Italian bombers operating from Majorca launched a series of exceptionally heavy raids upon the Republican stronghold of Barcelona between 16 and 18 March 1938.⁶ Many British observers interpreted the Barcelona raids as an intentional attack upon civilians, rather than strictly military objectives. For example, the correspondent for *The Times* witnessed the raids and concluded that ‘There can be no doubt that the object of the bombings was to spread horror and panic among the people’. At least 500 people were reported to have been killed on the first day alone.⁷ Interestingly, although it reported that people were fleeing the city for the safety of the countryside and even that ‘Aragonese peasants driven to Barcelona from the front are returning, preferring to face the first terror rather than the last’, the *Manchester Guardian* maintained that ‘Barcelona, though stricken, keeps its courage’.⁸ Even *The Times*, not notably sympa-

⁴See Anthony Aldgate, *Cinema and History: British Newsreels and the Spanish Civil War* (London: Scholar Press, 1979), 126-7; Corum, *The Luftwaffe*, 186-7.

⁵For example, Durango and Elorrio, bombed by German and Italian aircraft on 31 March: Antony Beevor, *The Battle for Spain: The Spanish Civil War 1936-1939* (London: Weidenfeld & Nicolson, 2006), 228.

⁶See Quester, *Deterrence before Hiroshima*, 93-4; Beevor, *The Battle for Spain*, 333; Corum, *The Luftwaffe*, 211; also K. W. Watkins, *Britain Divided: The Effect of the Spanish Civil War on British Public Opinion* (London: Thomas Nelson and Sons, 1963), 120-1.

⁷‘500 killed in Barcelona’, *The Times*, 18 March 1938, 16.

⁸‘Barcelona’, *Manchester Guardian*, 19 March 1938, 12.

thetic to the Republican cause, agreed that ‘There is anguish and terror, but no panic’.⁹ Coming so soon after the German Anschluss of Austria on 12 March, Barcelona’s agonies seemed especially ominous. As Critic (editor Basil Kingsley Martin) wrote in the *New Statesman*:

Vienna and Barcelona have shaken England to the very core. Suddenly people have realised that this bombing business is not fantasy but real and that across the way, as it were, there is a government which is prepared to use overwhelming force to end the independence of a quiet neighbour.¹⁰

For Philip Noel-Baker, to accept the legitimacy of such tactics was to ‘settle now what the “next war” would be like. Guernica was a portent; Barcelona is the writing on the wall’.¹¹ Perhaps because it happened to a relatively large city rather than a small town like Guernica, it was easier to imagine Barcelona’s fate being shared by London and other British cities.

Civilians in Spain and China continued to suffer from aerial bombardment over the next two months. In late May and early June, however, a new peak in intensity was reached. Beginning on 28 May, a series of heavy aerial bombardments on Canton (modern Guangzhou), some 120 km upriver from Hong Kong, may have killed thousands of people in a two week period.¹² In the same period in Spain the towns of Alicante (25 May) and Granollers (31 May) were devastated by Italian bombers. The raid on Granollers was reportedly carried out by only five bombers, which nonetheless killed one thousand people.¹³ British merchant vessels in Republican-held ports also came under air attack on an almost daily basis.¹⁴

Taken together, the ordeals of these cities dominated the newspaper headlines in Britain for more than a week. The horrific descriptions of indiscrim-

⁹‘The agony of Barcelona’, *The Times*, 19 March 1938, 12.

¹⁰Critic, *New Statesman*, 26 March 1938, 514.

¹¹Philip Noel-Baker, *The Times*, 21 March 1938, 8. Noel-Baker had previously chosen not to hyphenate his surname.

¹²See, e.g., H. Brokenshire, ‘1,500 hit in 13th Canton raid’, *Daily Mail*, 7 June 1938, 9; also Aron Shai, *Origins of the War in the East: Britain, China and Japan 1937-39* (London: Croom Helm, 1976), 152.

¹³See ‘The only defence’, *Daily Mail*, 8 June 1938, 10.

¹⁴See, e.g., ‘More merchant ships bombed’, *The Times*, 10 June 1938, 15.

inate carnage – such as one in *The Times* of a Cantonese mother who ‘was struck by bomb fragments, which took off her head and tore her stomach’ while sparing her child¹⁵ – gave rise to fears, widespread on the left, that the bombing of cities was now an accepted part of war, whatever morality and law might dictate. In a leading article, the *Manchester Guardian* warned the government that ‘the misery of the Spanish towns, if unchecked by international agreement, is but the image of what may come upon their own’.¹⁶ The mayor of Canton appealed not to the international community’s pity but its self-interest: ‘Each protest you might voice to-day could help to forestall similar barbarous attacks on your own city and people in future’.¹⁷ The starkest warning simply read ‘Canton to-day, London to-morrow’, a banner carried in a protest rally through Whitehall organised by the China Campaign Committee.¹⁸ J. B. S. Haldane expanded on this point in a speech to a crowd of two thousand in Trafalgar Square. He told them that ‘half a dozen aeroplanes could pulp them in a few minutes’:

‘You can take it from me,’ he added, ‘the air raids in Canton and in Spain are only dress rehearsals for air raids we may expect on London. Germany is not using her main air force in Spain. Japan is not using hers against China. Japan is learning from every air raid on Canton the most efficient use that can be made of bombs, for dropping on British territory and British ships. Then she compares this information with the information her German friends have gathered in Spain.’¹⁹

The air raids in Spain and China were beginning to hit close to home.

The Committee urged that Britain impose an embargo on oil and other raw materials to Japan.²⁰ The *Manchester Guardian* instead favoured the

¹⁵‘Bombing of Canton goes on’, *The Times*, 13 June 1938, 13.

¹⁶‘Britain and the bomber’, *Manchester Guardian*, 31 May 1938, 10.

¹⁷‘Appeal to mayors of Britain’, *Manchester Guardian*, 14 June 1938, 15.

¹⁸See ‘Air raids on Chinese towns’, *The Times*, 14 June 1938, 18. The China Campaign Committee began work in 1937, initially organised by the UDC. It attracted the support of many prominent left-wing activists, including Victor Gollancz, the chairman, Norman Angell and Harold Laski.

¹⁹‘Canton bombing protest’, *The Times*, 20 June 1938, 16.

²⁰See Listowel et al., *Manchester Guardian*, 16 June 1938, 20.

British government's proposed commission of observers from neutral nations. After determining whether any given air raid was targeted at military objectives, the commission would issue a report 'for the judgement of public opinion'.²¹ Neither of these courses would help Britain directly if war came, but the hope was that by signalling the abhorrence of the international community for attacks upon civilians, a future aggressor might hesitate before attempting a knock-out blow.

On the right, the *Daily Mail* also thought that 'Besides pity, our people will feel a sharp sense of the need to do everything in their power to prevent disasters on a worse scale in Britain'. But it rejected reliance on public opinion and moral restraint, instead favouring the creation of 'an immensely powerful Air Force'.²² The following week, another leading article explained that this would consist of 'a counter-force of bombers capable of immediate equal retaliation, and a force of fighters to meet the enemy not in the gate but before he gets as far as that'.²³ The Chamberlain government evidently had little faith in its own proposal for an international commission; however, ARP was a different story. Sir Samuel Hoare, the Home Secretary, assured Commons and the public that 'the terrible experiences in Barcelona' had been carefully studied by his ministry. He called upon local authorities to draw up plans for trench systems in publicly-owned open spaces, which should be able to provide emergency shelter for up to 1.5 million people.²⁴ These plans were in fact put into effect in September, during the Sudeten crisis.²⁵

The bombardment of urban areas in Spain and China continued through to September, though less outrage was expressed in the press: for example, *The Times* reported a Japanese raid on the town of Kingshan, near Hankow (modern Hankou), in a neutral manner, despite the infliction of one thousand casualties.²⁶ This may be because the Foreign Office had now decided that it would be counterproductive to publicly criticise Japan over such incidents.²⁷

²¹'A step forward', *Manchester Guardian*, 4 June 1938, 12.

²²'Canton', *Daily Mail*, 31 May 1938, 10.

²³'The only defence', *Daily Mail*, 8 June 1938, 10.

²⁴HC Deb, 1 June 1938, vol. 336, col. 2080; *Manchester Guardian*, 2 June 1938, 14.

²⁵See p. 256.

²⁶'Closing in on Hankow', *The Times*, 31 August 1938, 10.

²⁷See Shai, *Origins of the War in the East*, 152. On the close control of foreign corre-

But more importantly, the developing crisis in central Europe was beginning to eclipse all other concerns.

Emergence

After weeks of mounting tension, and two flights by Neville Chamberlain to Germany, on 26 September Hitler threatened to annex the Sudeten regions of Czechoslovakia by force, if necessary, and it seemed very possible that Britain might itself soon be at war.²⁸ Fearing that Germany might attempt a knock-out blow in the next few days, 150,000 Londoners left the capital in a largely spontaneous exodus. The Home Office and local authorities in London and other cities activated their ARP plans, and the Territorial Army's anti-aircraft units were mobilised for duty. Thirty-eight million gas masks were distributed to the public and slit trenches dug in the Royal Parks in London.²⁹ Chamberlain famously alluded to these air raid precautions in his BBC broadcast on 27 September: 'How horrible, fantastic, incredible it is that we should be digging trenches and trying on gas-masks here because of a quarrel in a far away country between people of whom we know nothing'.³⁰ All of this is highly suggestive of a pervasive state of fear of an impending knock-out blow.

But an examination of the press in the latter half of September 1938 reveals that commentators were generally reluctant to make predictions about what would happen in the event of air raids. There was little of the speculation about the possibility of a knock-out blow which had been prevalent in earlier air panics, such as in 1922 and 1935, and little overt discussion of possible dangers such as gas or mass panic. Blunt predictions like 'War is raging in the world to-day, and may shortly ravage our own towns and cities', made

spondents exercised by the News Department of the Foreign Office, see Cockett, *Twilight of Truth*, 16-23.

²⁸On the Sudeten or Munich crisis, see Keith Robbins, *Munich 1938* (London: Cassell, 1968); R. A. C. Parker, *Chamberlain and Appeasement: British Policy and the Coming of the Second World War* (Basingstoke: Macmillan Press, 1993), chapter 8.

²⁹See Titmuss, *Problems of Social Policy*, 30; O'Brien, *Civil Defence*, 153-65.

³⁰'To the nation and Empire', *The Times*, 28 September 1938, 10.

in a letter to the *Manchester Guardian*, were relatively rare.³¹ Instead, vague statements about the character of the looming war were made, such as the *Manchester Guardian*'s London correspondent's reference to an 'undefined war' which would 'not be a matter of millions of infantry'.³² This may have been because it was believed that it would increase the likelihood of panic to discuss the results of an aerial war, given that one was quite possibly imminent: Clement Attlee, Labour's leader, was reported to have told an East End audience that 'At a time like this anyone in a responsible position must weigh his words with care', after having noted that 'the possibility of war had been in all their minds'.³³ The *Spectator* did declare that 'a country defenceless against the most dangerous form of force – attack from the air – must cease to exist as a nation', but it did not do so until after the Munich Conference had removed the immediate danger.³⁴ The public's fear of war was not itself treated as a problem, but its possible transformation into panic during or after air raids was sometimes discussed, particularly by the *Manchester Guardian*. A leading article published at the height of the crisis declared that if war came, Britain's frontier would be 'in the air' over its major cities: 'The real enemy in that case would be panic'.³⁵ The exaggerated belief in the possibility of a knock-out blow underlaid such statements.

There were two main exceptions to this relative silence on the subject of air warfare. The first was implicit in the extraordinary ARP measures being taken on the public's behalf. The government's emphasis on gas masks, for example, demonstrated that gas was to be feared. Millions of people got to handle a gas mask for the first time on 25 September, dubbed by the press 'ARP Sunday'.³⁶ Loudspeaker vans drove slowly around central London imploring, 'Will every citizen of Westminster get his gas mask fitted as soon as possible? Please do not delay'.³⁷ This was evidently a confronting

³¹G. E. Lee, *Manchester Guardian*, 13 September 1938, 20.

³²*Manchester Guardian*, 24 September 1938, 12.

³³“A militarist menace”, *The Times*, 19 September 1938, 14.

³⁴'Defence today', *Spectator*, 7 October 1938, 549.

³⁵'The civilian task', *Manchester Guardian*, 28 September 1938, 8.

³⁶See 'A.R.P. Sunday queues for gas masks', *Daily Mail*, 26 September 1938, 11; 'A.R.P. Sunday', *The Times*, 26 September 1938, 14.

³⁷See 'A.R.P. Sunday', *The Times*, 26 September 1938, 14.

experience for many, particularly women and the elderly. Mass-Observation volunteers reported symptoms ranging from a lack of appetite to a heart attack. One woman ‘went quite white’ when an ARP volunteer came to her house to fit her mask; others just slammed the door.³⁸ The press reinforced the idea that gas attack was a serious danger by its extensive coverage of the gas mask distribution: for example, reporting that 120,000 had been fitted in Hackney borough as of 23 September, with hopes that the balance of 120,000 would be completed ‘within a short time’.³⁹ There were also concerns, particularly from mothers, over the lack of suitable gas protection for infants and toddlers.⁴⁰

Trenches were another potent symbol of the threat of the bomber. These were intended to afford some protection from shrapnel and blast for civilians caught away from home during an air raid: in Cardiff, work began on nine miles of trenches, while Manchester planned to provide shelter for 40,000 people by the end of September.⁴¹ Similar schemes were hastily put into effect all over the country. Although the rushed construction and temporary nature of the trench systems clearly indicated their stopgap nature, there was little criticism of the lack of more durable shelters. Indeed, even before September the *Spectator* suggested that trenches might be more appropriate for all but the most densely-populated areas, and certainly cheaper.⁴² It continued to advocate trenches and sandbagging as the crisis mounted.⁴³ Left-wing opinion was sometimes willing to point to ARP deficiencies, but at this stage such concerns were more about whether the emergency programmes were on a sufficiently large scale or overbalanced towards protection against gas

³⁸Madge and Harrisson, *Britain by Mass-Observation*, 88-90; ‘Fitting gas masks at Stretford’, *Manchester Guardian*, 21 September 1938, 11. The latter case may represent resentment at an intrusion by officialdom into working-class domestic life, or at the supposedly undemocratic nature of ARP, an accusation sometimes levelled by the left. See, e.g., Philip F. Dyer, *New Statesman*, 24 September 1938, 453.

³⁹‘A.R.P. Sunday’, *The Times*, 26 September 1938, 14.

⁴⁰See, e.g., Therese Vogler, *Spectator*, 23 September 1938, 484.

⁴¹See ‘Nine miles of trenches’, *Manchester Guardian*, 27 September 1938, 10; ‘Public trench shelters in Manchester’, *Manchester Guardian*, 28 September 1938, 12.

⁴²‘Programmes for A.R.P.’, *Spectator*, 26 August 1938, 325.

⁴³‘Air-raid protection’, *Spectator*, 16 September 1938, 429-30.

rather than high explosive or fire.⁴⁴ Individual local authorities also came under criticism for their inadequate ARP preparation and training.⁴⁵

Of course, the seeming imminence of war provided little scope for carping. Indeed, it heightened all other fears, and was itself reinforced by the very measures taken to protect the public. On 24 September, as Chamberlain was meeting Hitler for the second time at Godesberg, the *Daily Mail* reported that the talks had broken down, that Czechoslovakia and Hungary were mobilising, that Germany and France were massing troops, and that the RAF, Britain's 'air arm, in particular, has been in a state of continual alertness since the European situation became critical'.⁴⁶ Two days later, William Astor, parliamentary private secretary to the Home Secretary, urged his Fulham constituents to construct trench shelters in their backyards without delay, for 'Hitler is speaking to-night and on that speech we may know whether it is peace or war. We may not have to wait until Saturday' [1 October, the date previously set by Hitler for the annexation of the Sudetenland].⁴⁷ The increase in press coverage devoted to the crisis was enough to indicate to even the most casual reader that danger was near: from 4 pages out of 24 in the *Daily Mail* on 21 September, to 9 pages out of 18 a week later. The ARP preparations had a similar effect: demonstration trenches dug in five Manchester parks 'brought to people's minds most sharply the present urgency for completing air-raid precautions', according to the *Manchester Guardian*.⁴⁸

The other great exception to the reluctance to speculate about the consequences of war was the widely-expressed fear that war would lead to the collapse of civilisation, a knock-out blow *in extremis*. This was a fear which became increasingly common as the crisis neared its peak, and nightmarish warnings could be found in the letter sections, especially, of newspapers of all ideological persuasions. For example, the archaeologist (and Marxist) V. Gordon Childe wrote to the *New Statesman* that war 'must, in fact, destroy all that in Britain still deserves the name civilisation'; the *Daily Mail* wrote

⁴⁴See, e.g., 'The home front', *Manchester Guardian*, 27 September 1938, 8.

⁴⁵See, e.g., Air Warden, *Manchester Guardian*, 13 September 1938, 20.

⁴⁶'Parliament will meet at once', *Daily Mail*, 24 September 1938, 9.

⁴⁷"'Build a shelter at once'", *Manchester Guardian*, 27 September 1938, 10.

⁴⁸'Trenches in Manchester parks', *Manchester Guardian*, 26 September 1938, 11.

of the 'four days which remain between civilisation and catastrophe'; and another correspondent warned in *The Times* that war in western Europe would be demographic suicide, leading to the 'overwhelming of our civilization in catastrophe' by a 'Russo-Asiatic' horde.⁴⁹ Admittedly, most of these writers failed to specify exactly how war would lead to the end of civilisation. Obviously they envisaged that it would be exceptionally bloody, even more so than the First World War, but this could equally well describe a more conventional ground war which incorporated all the advances in military technology that had accrued since 1918. However, when explanations were on occasion offered, they show that the discourse of civilisational collapse was founded upon the assumption of devastating and widespread air raids on cities. Childe, for example, went on to refer to 'the bombed ruins of London and Berlin'.⁵⁰ And after the Munich Agreement brought the assurance of peace, public figures felt more free to explain exactly what they had feared. A week after his triumphant return from Germany to Heston aerodrome, when he promised 'peace for our time', Chamberlain defended the Agreement to the House of Commons by claiming that it had 'saved Czecho-Slovakia from destruction and Europe from Armageddon'. Earlier in the speech, he had noted that:

When war starts to-day, in the very first hour, before any professional soldier, sailor, or airman has been touched, it will strike the workman, the clerk, the man-in-the-street or in the 'bus, and his wives and children in their homes [...] people burrowing underground, trying to escape from poison gas, knowing that at any hour of the day or night death or mutilation was ready to come upon them.⁵¹

This was the Armageddon the Munich Agreement had saved Europe from: the knock-out blow.

⁴⁹V. Gordon Childe, *New Statesman*, 24 September 1938, 451; 'Four days', *Daily Mail*, 27 September 1938, 10; H. Sharp, *The Times*, 20 September 1938, 13.

⁵⁰V. Gordon Childe, *New Statesman*, 24 September 1938, 452.

⁵¹HC Deb, 6 October 1938, vol. 338, col. 545; cf. *Manchester Guardian*, 7 October 1938, 4.

Reactions

As Chamberlain's speech suggests, those who employed the rhetoric of annihilation did so in order to argue that war was a suicidal response to the Sudeten crisis, thus justifying peace at any price. Prominent amongst these were people willing to argue for the appeasement of Hitler. One member of the public wrote to the *Manchester Guardian* to propose 'a general plan for European appeasement', since 'no concessions we will make will compare for one moment with the frightful losses and suffering another war would bring'.⁵² Another letter in the same issue asked critics of the Prime Minister to consider that a war over Czechoslovakia would 'devolve into aerial warfare, with wholesale bombing of all countries concerned', hence explaining Chamberlain's air diplomacy.⁵³ However, those who toed the Labour line that collective security was the answer to Europe's problems also found themselves arguing, on occasion, that war would destroy civilisation. Philip Noel-Baker, for example, believed that upholding the rule of law was the only way 'to create the collective alliance that can yet save peace in the current crisis and without which in time to come European civilisation will surely be destroyed'.⁵⁴ This was an awkward balancing act, for standing up to the dictators was arguably more likely to lead to war than any other course. Hence the chant of the fascist protesters outside the Limehouse Town Hall, where the Labour leader was giving a speech: 'We want peace; Attlee wants war'.⁵⁵

Judging from the relative lack of attention paid to the RAF in the press, there was little confidence that it would be able to protect Britain, either in defence or in offence. One of the few exceptions was a long article by the *Manchester Guardian's* regular aviation correspondent, Major Frederic Robertson, which appeared in mid-September. He argued that the theory of the knock-out blow 'was unsupported by the facts of history and least of all by the results of bombing cities in Spain and China'. He lauded the RAF's

⁵²K. A. Bennett, *Manchester Guardian*, 24 September 1938, 6.

⁵³H. C. Courtney Clarke, *Manchester Guardian*, 24 September 1938, 6.

⁵⁴'Points from week-end speeches', *Manchester Guardian*, 26 September 1938, 13.

⁵⁵See "'A militarist menace'", *The Times*, 19 September 1938, 14; 'Fascists demonstrate against Mr. Attlee', *Manchester Guardian*, 19 September 1938, 5.

new Spitfires and Hurricanes as ‘the most formidable fighters in the world’, and concluded that ‘enemy air power will never force Britain and France to admit defeat’.⁵⁶ Robertson was one of the few commentators during the Sudeten crisis who was influenced by the turn against the knock-out blow by aviation experts which was then taking place.⁵⁷ Even so, his argument did not influence the *Manchester Guardian*’s editorial line in any perceptible way. The RAF may have considered itself the nation’s first line of defence, but the press was rather more sceptical about its value.⁵⁸

This is in striking contrast to the positive portrayal of ARP in all sections of the press. Few days passed during the crisis without some reference to the good work being done by ARP organisations around the country. The right-wing *Daily Mail* and the left-wing *Manchester Guardian* both reported ARP news extensively. Only *The Times* devoted little space to ARP until the danger was nearing its peak, rarely printing leading articles on the subject. As well as reporting on the progress of gas mask distribution and so on, some editors echoed the slogan emblazoned on an illuminated tram-car in Blackpool: ‘A.R.P. dispels fear’.⁵⁹ That is, ARP would play a vital role in preventing a knock-out blow by minimising civilian panic after air raids. The *Manchester Guardian* cited J. B. S. Haldane as its authority for its conclusion that ‘we must have efficient A.R.P. or offer ourselves as a victim’.⁶⁰ *The Times* did not go quite so far, merely claiming that as long as ARP was deficient ‘in any part of this nerve centre of Empire there will remain a dangerous gap in our system of defence’.⁶¹

Beyond this, several specific elements of ARP received special attention as a possible reaction to the crisis. The most important of these was the evac-

⁵⁶F. A. de V. Robertson, ‘Air power in war-time’, *Manchester Guardian*, 19 September 1938, 11-2.

⁵⁷For the rise of knock-out blow scepticism in the late 1930s, see p. 90ff.

⁵⁸That Fighter Command did not in fact possess many Spitfires or Hurricanes during the crisis – a handful and about five dozen, respectively, numbers which were not made public at the time – does not alter the fact that an opportunity to soothe civilian anxieties was missed in not discarding the implicit assumption that the bomber would always get through. On Fighter Command’s strength in September 1938, see p. 266.

⁵⁹See *Manchester Guardian*, 27 September 1938, 7.

⁶⁰‘The home front’, *Manchester Guardian*, 27 September 1938, 8.

⁶¹‘The autumn A.R.P. campaign’, *The Times*, 24 September 1938, 11.

uation from cities of as many vulnerable people as possible. The *Manchester Guardian* called this the ‘most obvious and practical of all life-saving methods’, but warned that it must be organised well in advance, for ‘Congested roads and panic-stricken refugees are an incitement to ruthless bombing’.⁶² In the event there were two different evacuations. One was an organised evacuation of London schoolchildren, though in the event only a relatively small number from ‘special schools’ actually left the city before the end of the crisis.⁶³ This was portrayed as wholly beneficial, even aside from the obvious advantages: the *Daily Mail* reported from one seaside camp that ‘if to-day’s sunny weather continues the children will go home bronzed and far fitter than they arrived’.⁶⁴ The second evacuation was more spontaneous, but less wholesome as far as left opinion was concerned, for it involved the flight of only those who could afford to leave. The *New Statesman’s* Critic reported that while ‘poor people’ were ‘wondering where they would go in the event of an air-raid’, the rich were already leaving:

Some well-to-do districts were full of empty houses, and I heard of one comfortable householder who explained to the gardener and his wife that they were going to the country for the war and would expect their servants to remain as caretakers.⁶⁵

Later estimates put the number of those fleeing north and west at around 150,000.⁶⁶

The Communist deep shelter campaign was paid some attention by the wider press due to the publication of Haldane’s book *A.R.P.* as the September crisis began to mount.⁶⁷ Based upon his observation of the effects of air raids in Spain and the precautions taken against them, Haldane proposed that a system of tunnels be built underneath Britain’s major cities in order to protect the majority of its population. In this way, he argued – both in his book and in public speeches made during the crisis – that war might be

⁶²‘Exodus from the cities’, *Manchester Guardian*, 29 September 1938, 8.

⁶³See, e.g., ‘Evacuation of children’, *Manchester Guardian*, 30 September 1938, 4.

⁶⁴‘I visit a children’s refuge camp’, *Daily Mail*, 30 September 1938, 5.

⁶⁵Critic, *New Statesman*, 1 October 1938, 382.

⁶⁶See Titmuss, *Problems of Social Policy*, 31.

⁶⁷Haldane, *A.R.P.*.

averted entirely, because the chance of a successful knock-out blow would be minimised and so less tempting to an aggressor.⁶⁸ But even those newspapers which referred favourably to Haldane's book – most notably, the *Manchester Guardian* – did not endorse his plan, possibly because it would cost at least £400 million to implement by his own estimate. Furthermore, as the tunnels would take at least two years to build, they could be of no help in the current crisis.⁶⁹

Another important reaction to the Sudeten crisis was to call for the compilation of a national register of manpower, in order to allocate it efficiently in wartime. The latter was the initiative of Sir Edward Grigg, a former colonial administrator and currently a Conservative MP, whose book *Britain Looks at Germany* had been published in June. One of Grigg's key arguments was that civilians needed to be assigned in peacetime to the organisations needed to withstand a knock-out blow – including AA and ARP – so that they could train for their wartime roles.⁷⁰ That the crisis renewed interest in his ideas is shown by the fact that his book was reviewed at least twice during the crisis, three months after its original publication date.⁷¹ A leading article in *The Times* suggested that 'The present crisis constitutes a strong argument for carrying this movement further'. If even a start were made upon this, 'then the British effort to contribute to our own and to the world's security would be better appreciated and the emergency would be the less likely to arrive'. Furthermore, it claimed that a national register would be less offensive to left-liberal opinion than outright conscription.⁷² Indeed the Liberal historian and journalist J. L. Hammond, writing for the *Manchester Guardian*, referred to Grigg's work as a 'brilliant little book' and hoped that 'this study of a subject that has suddenly become the burning problem of the hour will

⁶⁸See 'Perils of fascist domination', *Manchester Guardian*, 21 September 1938, 11; 'Cost of tunnel shelters', *Manchester Guardian*, 24 September 1938, 9; 'Need of bomb-proof tunnels', *The Times*, 24 September 1938, 7.

⁶⁹'The home front', *Manchester Guardian*, 27 September 1938, 8; see also 'Perils of fascist domination', *Manchester Guardian*, 21 September 1938, 11; 'Cost of tunnel shelters', *Manchester Guardian*, 24 September 1938, 9.

⁷⁰Grigg, *Britain Looks at Germany*, 120-4; see also p. 112.

⁷¹*Listener*, 22 September 1938, 625; J. L. Hammond, 'The case for "citizen training"', *Manchester Guardian*, 27 September 1938, 5.

⁷²'Organizing the nation', *The Times*, 26 September 1938, 13.

be read and considered by all who want to check aggression'.⁷³

Resolution

The Sudeten crisis had a clear resolution: the Munich Agreement between Britain, Germany, France and Italy, which was reported in the press on 30 September, though not confirmed until the following day. Only then did tensions fully dissipate. The success of Chamberlain's diplomacy was greeted with relief by the press.⁷⁴ *The Times* entitled its first leading article on 1 October 'A new dawn' and called for further measures of appeasement: 'the threat of ruin to civilization will recur unless injustices are faced and removed in quieter times, instead of being left to fester'.⁷⁵ The *Daily Mail* hailed Chamberlain's 'triumph' but was especially interested in 'his plans for trying to make war in Europe an unimaginable thing'. That the four major European powers (excluding the Soviet Union) had worked together to avoid conflict raised hopes for a future 'limitation of the air armadas which hold a threat of destruction over mankind'.⁷⁶ Even the *Manchester Guardian*, which despaired at the price paid for peace, had to admit that it 'cannot be measured against the horrors that might have extinguished not only Czecho-Slovakia but the whole of Western civilisation'. Still, it could offer little hope for the future.⁷⁷ As noted above, the rhetorical destruction of civilisation through air attack necessarily led to peace at any price; but that price did not necessarily resolve the problem of the bomber.

On the other hand, to some the crisis showed that aviation was not just a menace to civilisation: it could also prevent wars. After never having traveled by air before, Chamberlain flew to Germany three times in less than a month in order to meet with Hitler personally – the last time on

⁷³J. L. Hammond, 'The case for "citizen training"', *Manchester Guardian*, 26 September 1938, 5.

⁷⁴On the tremendous pressure placed by Chamberlain and his allies on newspaper proprietors and editors to suppress criticism of the Agreement, see Cockett, *Twilight of Truth*, 79-83.

⁷⁵'A new dawn', *The Times*, 1 October 1938, 13.

⁷⁶'A new era', *Daily Mail*, 3 October 1938, 12.

⁷⁷'The peace', *Manchester Guardian*, 1 October 1938, 12.

29 September for the Munich Conference. This style of diplomacy was not entirely without precedent, but had not been used in such dramatic fashion.⁷⁸ The *Listener* thought that the aeroplane ‘improved out of all recognition the means for resolving crises if goodwill is present’.⁷⁹ This was a line of argument that particularly appealed to aviation advocates. Nigel Tangye, the aviation correspondent for the *Evening News*, wrote to the *Spectator* to argue that if it had not been for the airliner, ‘Europe by now might have been shattered by aerial bombardment’. He added that ‘The aeroplane as an instrument of peace triumphed over the aeroplane as a weapon of war. And in the future it will do likewise’.⁸⁰ The *Aeroplane*’s editor, C. G. Grey, ran three consecutive editorials entitled ‘The air way to peace’.⁸¹ One of his arguments was that because of the ‘activities of the people pushing Air Raid Precautions [...] the population of this country has been thoroughly well scared by the realisation of what war may mean’. As a consequence, they wanted peace, and the same was true of the people of France and Germany.⁸² *Flight* agreed that ‘the sheer horror of aerial bombardment has become an influence for peace in the world’.⁸³

Although to call for better ARP was a common response to the developing crisis, the various measures actually introduced did little in practice to reduce tension. But the government was quick to assure the public that the work already underway would not be abandoned. The *Daily Mail* reported that ‘the official view is that it would be a false step to slow down the great A.R.P. machine just as it is beginning to run smoothly’.⁸⁴ The trenches were to be

⁷⁸Chamberlain was well aware of his flights’ potential for good publicity. Frank McDonough has claimed that this was not the Prime Minister’s first flight in an aeroplane, but if that is the case it is surprising that nobody seemed aware of it at the time. See McDonough, *Neville Chamberlain*, 63, 126-7.

⁷⁹‘Crisis in the Machine Age’, *Listener*, 6 October 1938, 702.

⁸⁰Nigel Tangye, *Spectator*, 7 October 1938, 556.

⁸¹‘The air way to peace’, *Aeroplane*, 21 September 1938, 331-2; ‘The air way to peace’, *Aeroplane*, 28 September 1938, 334; ‘The air way to peace – III’, *Aeroplane*, 5 October 1938, 397-8.

⁸²‘The air way to peace’, *Aeroplane*, 28 September 1938, 334. Grey was an open admirer of Nazi Germany who was forced to step down as editor when the Second World War began. See Griffiths, *Fellow Travellers of the Right*, 138-40.

⁸³‘Influence of the air’, *Flight*, 6 October 1938, 291.

⁸⁴‘New A.R.P. campaign launched to-day’, *Daily Mail*, 3 October 1938, 9.

completed (though not extended) and the remaining gas-masks distributed.⁸⁵ *The Times* noted a ‘widespread’ feeling that the crisis had resulted in improved ARP because ‘experience has suggested valuable modifications and improvements’, and because of the large influx of volunteers.⁸⁶ But that same experience also resulted in unease. William Craven-Ellis, a Conservative MP who was on the Parliamentary Air-Raid Precautions Committee, pointed out that there was not enough protection for the whole population and so ‘the scramble to seek the shelter provided would have resulted in many casualties’. He therefore hoped that ‘with the terrifying possibilities of war still fresh in our minds’ he might enlist the public’s support for the construction of permanent shelters underneath public parks.⁸⁷

Still less did the nation’s air defences inspire confidence. The *Spectator*, which was critical of the Munich Agreement, accepted that Britain was ‘almost totally defenceless against the greatest danger that had to be faced’ and that ‘a country defenceless against the most dangerous form of force – attack from the air – must cease to exist as a nation’. It listed the deficiencies requiring the most urgent attention: ‘(1) anti-aircraft defence; (2) air-raid precautions; (3) evacuation; (4) food-control; (5) organising, educating and preparing the civilian population’. Air defence was not mentioned, even in passing; neither were bombers.⁸⁸ Chamberlain and Sir Thomas Inskip, the Minister for Defence Co-ordination, promised to maintain the pace of rearmament and to repair deficiencies uncovered during the crisis, but although a ‘big increase’ in the RAF was announced, there was no mention of additional fighter aircraft.⁸⁹ The myth of the Few, which was to have so much power in 1940, had none in 1938.

⁸⁵ ‘Defence units stand by, A.R.P. to go on’, *Daily Mail*, 1 October 1938, 7.

⁸⁶ ‘Completing the defences’, *The Times*, 1 October 1938, 9.

⁸⁷ W. Craven-Ellis, *The Times*, 5 October 1938, 10.

⁸⁸ ‘Defence today’, *Spectator*, 7 October 1938, 549.

⁸⁹ See Wilson Broadbent, ‘Premier decides against election’, *Daily Mail*, 4 October 1938, 11; ‘Serious gaps in defences’, *Daily Mail*, 5 October 1938, 11.

Conclusion

Britain lay more deeply under the shadow of the bomber during the Sudeten crisis than at any other time in its history, excepting only the Blitz. After Munich, critics of appeasement claimed that the abandonment of Czechoslovakia was largely a consequence of Germany's aerial strength and Britain's aerial weakness.⁹⁰ There is evidence that Britain's civilian and military leaders took the danger seriously.⁹¹ Certainly, the intelligence available to Chamberlain greatly overstated the danger: an assessment prepared in mid-September by the Foreign Office estimated that Germany possessed 1222 first-line bombers to Britain's 200. This was accurate enough, but neglected the Luftwaffe's poor serviceability rates and lack of reserves.⁹² Moreover, there were not enough aerodromes in northern Germany available to stage more than a small force against Britain.⁹³ Even these were too far away for single-engined Bf 109 fighters to be able to escort bombers to London. The twin-engined Bf 110 could have flown the distance, but was itself available only in small numbers in September 1938.

ARP and air defence were both solutions to the bomber in 1940, but in 1938 only ARP was given much credence. Fighter Command then possessed only 5 squadrons of the modern Hurricane interceptors. It also had another 5 squadrons of Gladiator biplanes which would not have been outclassed against unescorted bombers.⁹⁴ Airpower writers such as Basil Liddell Hart and J. M. Spaight had already begun to reassess the possibility of air defence earlier in 1938.⁹⁵ But these experts were practically silent during the Sudeten

⁹⁰See, e.g., Liddell Hart, *The Defence of Britain*, 74-7; Salter, *Security*, 190-2.

⁹¹See Gerald Geunwook Lee, "I see dead people": air-raid phobia and Britain's behavior in the Munich Crisis', *Security Studies* 13 (2003), 254-6.

⁹²See Williamson Murray, *The Change in the European Balance of Power, 1938-1939: The Path to Ruin* (Princeton: Princeton University Press, 1984), 247-53; Wark, *The Ultimate Enemy*, 68-9.

⁹³See Corum, *The Luftwaffe*, 256-7.

⁹⁴A further 19 squadrons consisted of obsolescent or obsolete biplane fighters: 3 of Furies, 9 of Gauntlets, 7 of Demons. There were none of Spitfires. See Basil Collier, *The Defence of the United Kingdom* (London: Her Majesty's Stationery Office, 1957), 65, although differing figures are available: cf. Terraine, *The Right of the Line*, 57-8.

⁹⁵See p. 90ff.

crisis, with Frederic Robertson being one of the few exceptions.

Instead, ARP was privileged as a defence, not against the bomber itself but against the effects of bombing. It is true that ARP was more visible than air defence (with the exception of AA guns).⁹⁶ But it was also much more participatory, something which every household could take part in. And it was true enough that even against effective fighter protection, bombers could still get through to London. Yet this is not sufficient to explain the near total absence of air defence in the press in September 1938: a serious attempt to explain the part Fighter Command had to play in protecting civilians could have minimised fear of air raids.

The reaction against the knock-out blow by aviation experts only began part-way through 1938, and was incomplete by the time of Munich. It would seem that it came too late to influence the press reactions to the prospect of war. Furthermore, even though it was evidence from the wars in Spain and China which convinced the experts of the vulnerability of the bomber, the horror stories coming out of those countries between March and September superficially seemed to conform to the knock-out blow narrative. Indeed, Barcelona and Canton seem to have primed the Sudeten crisis. The common belief that war would spell the end of civilisation, itself an idea not unknown in the knock-out blow literature, could have been an extrapolation from the small forces used in Spain and China to the much larger one possessed by Germany.

All of this is consistent with a genuine fear of bombing. But more cynical explanations are possible. Nearly all of the periodicals examined here supported appeasement to varying degrees: some for political reasons, some for patriotic reasons, some for financial reasons.⁹⁷ Strong support for ARP to calm nerves was one thing, but it still implied that civilians would pay a terrible price if war came. Successful air defence, however, could mean that a knock-out blow would be averted entirely, and thus allow war to be fought at relatively little damage on the home front. In this view, the knock-out blow theory was intended to deter the British civilian from taking a stand,

⁹⁶Barrage balloons were not deployed until just after the end of the crisis.

⁹⁷See p. 212.

as much as anything.

Either way, to talk of the end of civilisation, as so many did in September 1938, justified peace at any price, including the abandonment of Czechoslovakia to Germany. But a year later, when it was Poland's turn to be threatened by Germany, to use similar language did not imply appeasement. For example, a leading article in the *Spectator* in late August 1939 declared:

Conscious to the full of the moral humiliation and the material horrors involved in the collapse of civilisation, we shall face the ordeal, if it is forced upon us, as a united and undaunted nation defending freedom against a merciless and rapacious tyranny.⁹⁸

What had changed? Many things, including the final loss of any faith in Hitler's honesty after the occupation of Prague in March. But an article by Nigel Tangye in mid-August reveals another crucial factor: the belief that air defence was now possible, as shown by recent RAF exercises:

The dead weight of pessimism that impeded our efforts twelve months ago has given way to a stimulus provided by the assured *ultimate* defeat of heavy raids, and this encourages us to perfect our weapons of defence so that the enemy's raiding power is smashed at the earliest possible stage of the war.⁹⁹

The end of civilisation no longer appeared to be such a great risk.

⁹⁸'Britain's part', *Spectator*, 25 August 1939, 277.

⁹⁹Nigel Tangye, 'Is Britain defended?', *Spectator*, 18 August 1939, 243; emphasis in original.

Chapter 9

The battles of London, 1917 and 1940

Another type of air panic could take place, naturally enough, when British cities were actually under aerial bombardment. Attacks on London, the political and also, significantly, the press and publishing capital of the nation, were particularly liable to induce press-mediated scares about the ability of modern society to withstand the strain of modern warfare, although these were usually partially obscured by brave denials of even the possibility of defeat through airpower. For example, in January 1915, press reports of the first Zeppelin raid on British soil were at pains to deny that there had been any negative effects on public morale. The *Manchester Guardian's* Yarmouth correspondent found the morning-after atmosphere to be one of 'remarkable calm and cheerfulness'; people were 'even pleasantly excited'.¹ A leader in the same issue scoffed at the possibility of panic, since only a 'lunatic' could believe that such a raid 'would have any effect on public opinion except to stiffen it'.² Yet after the London raids in June, the coroner investigating the deaths of some of the victims said he did not want 'alarm to spread around the Metropolis' by inquiring too deeply into the nature of the deaths, even though up to now Londoners had reacted 'very quietly

¹'The air raid on Norfolk', *Manchester Guardian*, 21 January 1915, 7. The same writer also noted the 'amazing ineffectiveness of bomb-dropping as a means of destruction'.

²'The air raid', *Manchester Guardian*, 21 January 1915, 6.

and coolly'.³ Whether actually present or not, the possibility of panic was already shaping preparations for and reactions to aerial bombardment.⁴ By contrast, the physical damage from Zeppelin raids was rarely a concern raised by the press, probably because it had become apparent that airships were not capable of the accuracy required to single out specific targets.

Emergence

While the Zeppelins were widely feared by the public, press reactions to them rarely possessed the complex of characteristics which indicate the occurrence of a defence panic. The most important air panic during the First World War took place in June and July 1917, after the Zeppelin threat had largely passed. This new threat came from formations of German aeroplanes operating from bases in Belgium in daylight, large multi-engine bombers such as the Gotha and, later, the Giant. In early June these bombed towns in Kent and along the Thames estuary, causing significant civilian casualties. Then, on 13 June, the first Gotha raid on London killed 162 people and wounded 432 others, the single most damaging air raid on British soil of the war. On 7 July, a second daylight raid killed 57 and wounded 193. British air defences were oriented towards the Zeppelin night raider and were initially almost completely ineffective, but improved enough to force the Germans to switch to night bombing in September.⁵ It was the two daylight summer raids which

³'The Zeppelin raid on London', *Manchester Guardian*, 3 June 1915, 9. It is however debatable whether the anti-German riots in Shoreditch following the raid could be described as a quiet and cool reaction: 'The Zeppelin raid on London', *Manchester Guardian*, 2 June 1915, 7.

⁴A possible proxy for such fears may exist in insurance premiums. In January 1915, the *Manchester Guardian* noted with satisfaction that premiums for insurance against bomb damage had barely risen in the wake of the Norfolk raids; but several months later most insurers were refusing to offer coverage for this possibility – yet banks were insisting upon it for goods in warehouses, leading to calls by the press for government action. This suggests that the business and financial communities rated the risk of bomb damage extremely highly, despite the general ineffectiveness of the Zeppelin campaign thus far. 'Lloyd's and bomb risks', *Manchester Guardian*, 25 January 1915, 6; 'Government and aircraft damage', *Manchester Guardian*, 4 June 1915, 4; 'Insurance against air raids', *Manchester Guardian*, 9 June 1915, 9.

⁵See Fredette, *The Sky on Fire*, chapters 6 and 9.

caused the most alarm in the press, however.

Although the theory of the knock-out blow was only in its infancy by the time of the Gotha raids, it was already recognisably present in some analyses. In fact, one of the earliest uses of the term in this sense was by T. Rice Holmes, a well-known classicist, in a letter to the editor of the *Saturday Review* written shortly before the second Gotha raid. He wrote that ‘I have long believed that if the war is indeed to be bought to a finish it is the airman who will deal the knock-out blow’.⁶ However, he believed that this would require huge numbers of aircraft, as many as a hundred thousand, which in practice pushed the prospect of a victory through airpower well into the postwar period.⁷ Similarly, a leading article in the same journal averred that ‘there is little doubt that warfare of the future will be instantaneous. Within twelve hours of entering the conflict it will be decided one way or the other’, because of the impossibility of air defence.⁸ The *Spectator* also prophesied aerial wars fought with aircraft numbering in the hundreds of thousands, warning that with such power ‘An unscrupulous State such as Germany might lay a foreign capital in ruins within a few minutes by a surprise declaration of war’.⁹ All of these speculations referred to the future, and not to the present air raids. Few yet went as far as Henry de Halsalle, author of *Degenerate Germany*, who argued in the *Daily Mail* that Germany would send ever-larger formations of bombers to raid London, for which the government was not prepared: ‘It is in the air that Germany has made up her mind that she will finish and win the war – and in England’.¹⁰ A leading article from the same newspaper published after the raid on 13 June, however, asserted that ‘England will not collapse or our Government flee away (as the Berlin *Morning Post* grotesquely pretends) because some hundreds of people

⁶The phrase ‘knock-out blow’ was an echo of a famous statement by Lloyd George in September 1916, when he promised that the war would be fought ‘to a finish – to a knock-out’: see John Grigg, *Lloyd George: From Peace to War 1912-1916* (London: Methuen, 1985), 425.

⁷T. Rice Holmes, *Saturday Review*, 7 July 1917, 10.

⁸‘Airfare [sic] after the war: present and future problems’, *Saturday Review*, 28 July 1917, 63.

⁹*Spectator*, 14 July 1917, 26.

¹⁰Henry de Halsalle, ‘More aeroplanes!’, *Daily Mail*, 5 July 1917, 4.

are killed or maimed'.¹¹

As with the earlier Zeppelin raids, the major threat posed by the Gothas was their potential ability to cause panic among war-weary civilians. This is clear from the close attention paid by the press to the reactions of the bombed, even though they generally insisted that panic was unlikely or even impossible. After the first London raid, the *Spectator* thought that 'The entire absence of panic was splendid in itself. There need not be the least fear that the London crowd will ever display a want of self-control'.¹² Similarly, a leader in *The Times* confidently predicted that 'we may trust that these visitations will continue to be faced with courage by the population'.¹³ According to the *Manchester Guardian's* aviation correspondent, the German high command was misled by the ease with which their own regimented civilians could be panicked by air raids, and might therefore be willing to absorb heavy losses 'for the sake of the moral effect on the London mob'. While there was some evidence of nerves, especially among women, 'there was nothing like a panic'.¹⁴ And yet an editorial comment claimed there was a 'risk of panic at home' if nothing was done to protect civilians from bombing.¹⁵ The second raid produced a burst of anger from the public, as they had been promised by the government that London's air defences would be attended to. But according to *The Times*, 'The complaints of London do not arise from fear, and the universal testimony is that the population as a whole remained singularly calm'.¹⁶ This is despite the fact that anti-German riots took place in London Fields and Tottenham the evening after the raid, in which crowds of hundreds attacked the homes and businesses of people with German-sounding surnames; further disturbances occurred in Lambeth, Hackney and Holloway two nights later.¹⁷ Press accounts often made com-

¹¹'Again, no warning!', *Daily Mail*, 14 June 1917, 4.

¹²*Spectator*, 16 June 1917, 657.

¹³'The air attack on London', *The Times*, 14 June 1917, 7.

¹⁴'The latest raid', *Manchester Guardian*, 14 June 1917, 4.

¹⁵'The air raid on London', *Manchester Guardian*, 14 June 1917, 4.

¹⁶'The bombing of London', *The Times*, 9 July 1917, 9.

¹⁷*The Times*, 9 July 1917, 10; 'Anti-German disturbances', *The Times*, 11 July 1917, 3. See Panikos Panayi, 'Anti-German riots in London during the First World War', *German History* 7 (1989), 200-1.

parisons between the dangers faced by civilians in London and those faced by men on active service, the point being that aerial bombardment was ‘not much to endure compared with the sufferings of those who hold the tortured and blood-soaked ground on the fighting fronts’.¹⁸ The overall effect was to minimise the effect of the Gotha raids on civilian morale.

The last air raid on London in the First World War took place on the night of 19 May 1918; the first of the Second, on 24 August 1940 (albeit unintentionally). The intervening two decades had wrought many changes in air warfare. For example, bombers now had much greater speed, endurance and bombload. And there were many more of them: air raids in the Gotha era had only been sporadic, and at most comprised thirty or forty aircraft. For the Battle of Britain and the Blitz which followed, the Luftwaffe marshalled more than 1500 bombers and nearly 1100 fighters, and could repeatedly send over southern England raids numbering in the hundreds, day after day. Against this threat, Fighter Command deployed about 700 interceptors.¹⁹ In late August and early September, raids were only intermittent and generally aimed at military targets such as RAF airfields and aircraft factories. But a new phase began on the afternoon of 7 September when about 350 German bombers attacked the Port of London, followed that night by another 180 raiders. Casualties from the first day of the Blitz exceeded 2000, including 436 fatalities. Thereafter, London endured raids almost every night up until mid-November, as well as frequent daytime attacks. Night raids on London continued with varying intensity and frequency until May 1941, with other cities and towns also coming under heavy attack.²⁰

But another important change since 1918 was the widespread acceptance of the knock-out blow theory by the British press. This inevitably coloured

¹⁸‘Air raids’, *Spectator*, 14 July 1917, 28.

¹⁹See Richard Hough and Denis Richards, *The Battle of Britain: The Jubilee History* (Harmondsworth: Penguin Books, 2001 [1989]), 111-3. On the Battle of Britain generally, see Terraine, *The Right of the Line*, 169-222; Francis K. Mason, *Battle over Britain: A History of German Air Assaults on Great Britain, 1917-18 and July-December 1940, and of the Development of Britain’s Air Defences Between the World Wars* (Bourne End: Aston Publications, 1990); Overy, *The Battle*.

²⁰For the Blitz generally, see John Ray, *The Night Blitz, 1940-1941* (London: Arms and Armour Press, 1998). On the opening onslaught, see Peter Stansky, *The First Day of the Blitz: September 7, 1940* (New Haven and London: Yale University Press, 2007).

their perceptions of the unfolding Blitz. As attacks increased in severity and frequency in late August and early September, apprehension began to rise that the long-feared all-out air attack was about to begin: on the morning of 7 September, before the beginning of the Blitz proper, the *Daily Mail* even announced that ‘Here, beginning now, is the real thing’ and implored civilians to ‘Carry on’.²¹ More than two weeks later, it described the raids in terms which would have been familiar to anyone acquainted with the pre-war literature on strategic air warfare: ‘HITLER is attempting to paralyse our transport and communications, to create panic and fear among the people, to destroy the amenities of everyday life, to distract our strategists’ attention and generally to create chaos’.²² Similarly, the *Spectator* speculated that the German intention was that:

London is to be desolated, its civilian population slaughtered, ordered life made impossible, by a series of promiscuous attacks that no longer even claim to be directed at military objectives. What we expected twelve months ago is coming now, and London and other cities that suffer like it must bear it as they were prepared to bear it then.²³

But much else had happened in those twelve months. In particular, the German campaigns in Poland, Denmark, Norway, Holland, Belgium and France had introduced to the British public a new strategic doctrine: the blitzkrieg, or ‘lightning war’. This was understood to be a new and highly mobile form of combined arms warfare, in which rapid thrusts by armoured, mechanised and motorised ground forces (and sometimes airborne troops) were strongly supported by the tactical employment of aircraft in air superiority, interdiction and close air support roles. Defenders were overwhelmed and disorganised by the speed of the advance and its penetration into rear lines of communication. Civilians fled the battle area, causing even more chaos

²¹‘Carry on’, *Daily Mail*, 7 September 1940, 2.

²²‘Reprisals’, *Daily Mail*, 24 September 1940, 2.

²³‘A decisive hour’, *Spectator*, 13 September 1940, 260. For the surprising absence of an all-out aerial attack at the outbreak of war, see p. 97.

as roads became filled with refugees.²⁴ Rotterdam was a particularly horrifying example of the new warfare. Its centre was bombed heavily by the Luftwaffe on 14 May and the British press reported in July that 30,000 civilians had been killed in the space of a few hours in an attempt to knock the Netherlands out of the war.²⁵ As country after country had fallen to this overpowering strategy, it was only natural that Britons would assume that Germany would attempt a blitzkrieg against the British isles: as early as 17 August, the *New Statesman* wondered whether the heavier air attacks might mark ‘the beginning of a Blitzkrieg’, while in a BBC broadcast on 5 September, Air Marshal Sir Philip Joubert spoke of an ‘aerial blitzkrieg’.²⁶ In this context, the mounting air offensive against London was seen as an attempt to disorganise the British defences ahead of an invasion, probably around the middle of September when high tides at dawn provided conditions most suitable for the landing of troops. As the *Manchester Guardian* explained (following much the same line as Winston Churchill in his broadcast of 11 September):²⁷

By bombing London she [Germany] aims at cutting off supplies, dislocating life and shaking the individual nerve, even (if her newspapers are to be believed) at driving the population out into the countryside [...] and at diminishing the military production of the country. The comparison is rough, but Hitler is trying to do in London as a prelude to invasion what, by bombing, parachutists, and troop carriers, he succeeded in doing at Rotterdam and the Hague as a support to the attack of his army from the east.²⁸

²⁴See Karl-Heinz Frieser, *The Blitzkrieg Legend: The 1940 Campaign in the West* (Annapolis: Naval Institute Press, 2005).

²⁵‘Rotterdam a city of ruins’, *The Times*, 11 July 1940, 4; ‘Ruthless German bombing of Rotterdam’, *The Times*, 11 July 1940, 6. Similar figures were repeated throughout the war, but in fact the dead numbered about a thousand: see Davy, *Air Power and Civilization*, 129-31; cf. Lee Kennett, *A History of Strategic Bombing* (New York: Charles Scribner’s Sons, 1982), 112.

²⁶‘The two blockades’, *New Statesman*, 17 August 1940, 149; Philip Joubert, ‘Blitzkrieg bulletin’, *Listener*, 12 September 1940, 368.

²⁷Winston Churchill, ‘Every man to his post’, *Listener*, 19 September 1940, 403.

²⁸‘The joint attack’, *Manchester Guardian*, 18 September 1940, 4.

In this way, the knock-out blow gave way to the blitzkrieg as the gravest strategic threat to British civilians, at least as elaborated by the press. But in practice there was not much difference, as the effects of the two forms of warfare were much the same.²⁹

Panic was one of the most striking features of blitzkrieg, especially during the collapse of France and the Low Countries in May and June 1940; and as it was already part of the knock-out blow paradigm it was easy to assimilate into the developing understanding of the Blitz. However, just as in the Gotha panic in 1917, the possibility of panic was explicitly denied. As *Flight* succinctly put it, 'Of panic there is not the least sign'.³⁰ The editor of the *Manchester Guardian* explained that 'In London the Germans are using the weapons of terrorism, dropping their bombs indiscriminately and seeking to break moral. They have failed and will fail'.³¹ On occasion, the knock-out blow proper resurfaced, as when *The Times* noted a speech delivered by Churchill in a secret parliamentary session:

The enemy has made no progress towards intimidating the people of London, as is presumably his intention, and the idea that by so doing he can induce them to put pressure on the Government to make peace was curtly dismissed by MR. CHURCHILL as silly.³²

The confidence expressed by the press in the psychological endurance of London's civilians was of course greatly at odds with the predictions of widespread panic made before the war in many of the same publications. Of course, it is true that there was no such panic in London during the Blitz: the *Daily Mail* was right to point out, for example, that 'There are no armies of refugees streaming out into the fields' as might have been expected.³³ But there were minor instances which could have been seized upon as signs of weak morale, had journalists and editors been so inclined. That they were not was due in part to a natural desire to avoid alarmist or even defeatist

²⁹See William J. Fanning, 'The origin of the term "Blitzkrieg": another view', *Journal of Military History* 61 (1997), 291-2.

³⁰'Dual-purpose attacks', *Flight*, 12 September 1940, 198.

³¹"The crux of the war", *Manchester Guardian*, 11 September 1940, 4.

³²'Plain facts', *The Times*, 18 September 1940, 5.

³³'The King's reply', *Daily Mail*, 14 September 1940, 2.

language which in itself might lend a hand to panic. The Blitz spirit had to be created if Londoners were to survive the ordeal: it was a necessary counter to the knock-out blow.³⁴

Another threat common to both the knock-out blow and the blitzkrieg was the disorganisation caused by the disruption of essential services such as communications, transportation, and public utilities. It was envisaged that this would further undermine morale by making daily life difficult or impossible to sustain, and it would also unbalance the defences by undermining the government's ability to function. Thus it was often assumed that part of the German plan was to cause a general breakdown in civil functions ahead of the invasion. To the *Manchester Guardian*, the Luftwaffe's targeting strategy appeared to confirm that Germany was planning for a short war, unlike Britain which needed time to harness the greater resources of the Empire:

If Germany thought of a long war she would choose industrial targets with what care she could muster. Instead, her aim seems to be to throw the huge population of London into a turmoil which will occupy our Government's mind even when invasion is tried.³⁵

But disorganisation could also result from inept British responses to the crisis. For example, Strategicus, the *Spectator*'s commentator on the war, noted that post offices closed the moment an air raid siren sounded, and so were abdicating their 'role as the central nervous system of the nation. Without a properly functioning Post Office business is impossible, and unless business can be carried on, the whole economic foundation of the war lapses'.³⁶

³⁴See also Angus Calder, *The Myth of the Blitz* (London: Jonathan Cape, 1991), 128-31; Smith, *Britain and 1940*, 75; Mackay, *Half the Battle*, 74-87.

³⁵'Towards climax', *Manchester Guardian*, 14 September 1940, 6.

³⁶Strategicus, 'The war surveyed: the German offensive', *Spectator*, 20 September 1940, 286. Strategicus was the pseudonym of journalist Herbert Charles O'Neill, who had written extensively for the Ministry of Information in the First World War. Strategicus' language here is highly reminiscent of Montagu of Beaulieu's nerve centre concept of 1909: see p. 45.

Reactions

In 1917, newspapers – along with parliamentary debates and public meetings – became the forum for a lengthy debate on how to diminish or eliminate the danger of bombing altogether. The most contentious question was whether or not to bomb German cities in reprisal for the attacks on British civilians, usually in reference to air raids but also sometimes U-boat attacks. A public meeting was held at Tower Hill the day after the first Gotha raid: one speaker called for Berlin to be bombed by a force of 500 aeroplanes, and the meeting carried a resolution calling for the enemy to be ‘paid back in the same way as he has treated this country’.³⁷ Similar conclusions were reached by an even bigger meeting held at the London Opera House on 17 June, attended by the Lord Mayor and several MPs for London constituencies.³⁸ *The Times* did not like the word ‘reprisals’, and denied that most people calling for them wanted simple revenge. Rather, they were impressed by airpower’s ability to deliver a knock-out blow:

the real origin of the intense interest now being shown in air warfare is the instinctive recognition that aircraft are rapidly becoming a primary means of gaining ultimate victory. It is widely felt that, while our authorities continue to regard the Air Services as a valuable secondary arm, the Germans have been quicker to recognize the possibility of gaining in the air the success they have failed to obtain on land and under the sea.

To this end, more raids into Germany should be undertaken, but only upon legitimate military targets – a constraint which avoided the difficult moral questions involved.³⁹ Some of the newspaper’s readers made the same distinction, such as Charles Bright, a telegraph engineer who had served on the Bailhache inquiry into the Royal Aircraft Factory the previous year. He called for ‘a far more extensive military attack on the enemy’s munition factories, harbours, docks, railway stations, and general communications’, adding

³⁷‘The air attack on London’, *The Times*, 15 June 1917, 3.

³⁸‘Air raid warnings for the City’, *The Times*, 18 June 1917, 10.

³⁹‘The bombing of London’, *The Times*, 9 July 1917, 9.

that this would ‘increase the chances of striking terror into the German mind in a way that would tend to produce definite internal revolution’.⁴⁰ The *Saturday Review* advocated the idea in a leading article published after the first Gotha raid, cautiously suggesting that if Berlin were to be bombed heavily after each raid on London, German civilians would be thrown ‘into a state of rage and consternation’ and would learn that the English were a more dangerous enemy than they had assumed. Hopefully this would prevent the German bombers from ‘joyfully’ raiding British cities.⁴¹

Those who supported reprisals sometimes did so reluctantly, but many found sufficient justification in the Old Testament law of an eye for an eye. The response of J. Stephens Roose, President of the Metropolitan Free Church Federation, can stand for many. He explicitly rejected the later Christian injunction to turn the other cheek. For his own sake he would probably do so, ‘But if a man attacked my children, I should knock down the brute without the slightest hesitation’.⁴² The *Saturday Review*’s own military expert, Brigadier-General F. G. Stone, agreed that since Germany was the first to resort to the immoral bombing of civilians there was no lack of ethical justification for reprisals, but added that the real question was whether or not they would be expedient: that is, whether bombing German cities would be the best use of aircraft currently supporting the troops in France. His own suggestion was that the home defence squadrons could be converted for bombing duties without prejudice to the needs of the front.⁴³ The *Daily Mail* was in no doubt that ‘The cure for air raids’ was to ‘Attack the Huns at home’, adding that the question of reprisals on German cities was purely a military question, not a moral one: ‘Either we attack the Germans in their own country or they will attack us here’.⁴⁴

As vociferous as the demands for reprisals were, there was also strong resistance from many newspaper readers and community leaders to the idea. The *Manchester Guardian* rejected a reprisal strategy, for it assumed that the

⁴⁰Charles Bright, *The Times*, 10 July 1917, 5.

⁴¹‘The raid on London; and reprisals’, *Saturday Review*, 23 June 1917, 564.

⁴²J. Stephens Roose, *The Times*, 19 June 1917, 7.

⁴³‘Air raids and the question of reprisals’, *Saturday Review*, 30 June 1917, 591.

⁴⁴‘The cure for air raids’, *Daily Mail*, 4 July 1917, 2.

only defence against wickedness was more wickedness.⁴⁵ Similarly, the civil engineer Bradford Leslie asked whether another correspondent of *The Times*, an advocate of reprisals, thought ‘that the slaughter of any number of German women and children, even if British airmen could be induced to undertake it, would make the Kaiser forgo the pleasure of strafing England?’⁴⁶ As the emotive language used by Leslie suggests, for some the ethical questions surrounding the bombing of civilians loomed large. One bereaved mother, who had lost both her sons to the war, used her personal sacrifice not as a reason for revenge but for humanity: ‘should I live to see Englishmen sent to murder in cold blood German women and children and harmless civilians, then indeed I should begin to ask, “Have my sons died in vain?”’⁴⁷ Overtly pacifist arguments were rarely published; one was put forward by the theologian W. B. Selbie who argued that Christians should not ‘stain our hands with methods of barbarism which are as futile as they are wicked’, in the hope that they could work for the ‘mitigation [of war] or even for its entire abandonment in the future’.⁴⁸

Other strategies for preventing further Gotha raids were proposed in addition, or as alternatives to, reprisals, though none was quite so popular or as controversial. Perhaps the most obvious was to improve the effectiveness of Britain’s air defences, but this would require the diversion of aircraft from the crucial sector of the war, the Western Front. A lengthy letter to the editor of *The Times*, signed ‘Watchman’, argued that ‘a panic at “the nerve centre of the British Empire,” which may induce us to sue for peace’ was only a secondary objective for the German airmen. Their main intent was to cause:

the people of London [to] allow their minds to be confused as to the main issues, and thereupon proceed to bring the wrong kind of pressure to bear upon the Cabinet and the War Office through leading articles and speeches in Parliament. If either Ministers

⁴⁵‘The air raid’, *Manchester Guardian*, 9 July 1917, 4.

⁴⁶Bradford Leslie, *The Times*, 18 June 1917, 10.

⁴⁷A Mother, *The Times*, 18 June 1917, 10.

⁴⁸W. B. Selbie, *The Times*, 12 July 1917, 4.

or military commanders were to yield to a clamour of this kind, if they were to weaken our air forces in France in order to defend London, they would simply be playing the German game, and would accordingly deserve to be shot.

He applied the same analysis to a reprisal strategy, and concluded that London could surely withstand the occasional air raid, if securing its safety would endanger the war effort.⁴⁹ Other readers reacted angrily to what they saw as Watchman's condescension. For example, Julie C. Chance, who had previously campaigned for women's suffrage and war economies, rejected the implication that ordinary citizens should endure bombing just because their betters told them to. She pointed out that the same argument had been used by the "darkness and composure" school against attempting defence against Zeppelins, and if it had been listened to we should now not only be bombed in the streets by day, but also in our beds by night'.⁵⁰ Furthermore, a great increase in aircraft production would ensure an ample supply of aircraft for both home defence and the Western Front, a position also favoured by the *Manchester Guardian*:

If the Government wants to do the easy thing, it will announce its intention to resort to reprisals [...] but it will not save lives and property in that way. The only way in which it can tackle the problem with certainty of success is by giving the country an Air Service not equal to that of Germany but many times its superior.⁵¹

Set against this were the arguments of those who believed that the ease with which the German raiders penetrated British airspace merely reflected the impossibility of effective air defence altogether, such as the naval historian John Leyland, who wrote to *The Times* that 'it is useless to talk of "command of the air." There can be no such thing, in any sense analogous to command of the sea', since the air has no geography.⁵² The *Spectator* informed its

⁴⁹Watchman, *The Times*, 9 July 1917, 6.

⁵⁰Julie C. Chance, *The Times*, 11 July 1917, 7. Chance also favoured reprisals.

⁵¹'The air raid', *Manchester Guardian*, 9 July 1917, 4.

⁵²John Leyland, *The Times*, 11 July 1917, 7.

readers that ‘Air raids cannot be entirely prevented’, a sentiment echoed by Stanley Baldwin fifteen years later.⁵³

Leyland instead proposed:

acting in the spirit of Drake, and Raleigh, and Nelson, and striking at the enemy, at his aircraft bases, driving them back farther and farther from the coasts, and destroying his flying craft, whenever possible, as they issue from their lairs.⁵⁴

This form of forward air defence was a compromise between the competing demands of the home front and the Western Front. If it was true, as the *Spectator* claimed, that ‘The German aerodromes in Belgium, or places not far from them, are the true defensive lines of London’, then ‘the further away [...] we place our defensive patrols the more ground, or rather the more air, we shall have to cover’. This would leave large numbers of aircraft sitting idle: a victory for the Germans. By contrast, interception of Gothas near their bases meant that the short-ranged British fighters would in turn need to be based in Flanders, where they could also support the Army as required.⁵⁵ A variant on this idea was simply to urge that the Army itself occupy the German airfields in Belgium: ‘On the day that we sweep the invaders from Flanders we shall also be conferring immunity on London’, as *The Times* explained.⁵⁶ As the reoccupation of Flanders had already been the general objective of the Army for nearly three years – and, coincidentally, was the specific objective of the British offensive launched at the end of July⁵⁷ – this suggestion was simply another argument for avoiding any distractions from a purely military strategy.

Another debate concerned the question of whether raid warnings should be issued to the populace. None were given before the first raid in June, which angered some members of the public who asked why this was, given

⁵³‘Air raids’, *Spectator*, 14 July 1917, 28. On Baldwin, see p. 70.

⁵⁴John Leyland, *The Times*, 11 July 1917, 7.

⁵⁵‘Air raids’, *Spectator*, 14 July 1917, 28.

⁵⁶‘The bombing of London’, *The Times*, 9 July 1917, 9.

⁵⁷See Robin Prior and Trevor Wilson, *Passchendaele: The Untold Story* (New Haven and London: Yale Nota Bene, 2002), 31-3.

that warning systems were already in place in provincial towns. Similar measures ‘might have considerably lessened the number of street fatalities in to-day’s and previous air raids’.⁵⁸ Even angrier was the *Daily Mail*, which claimed after the July raid that Londoners were ‘left to the tender mercy of the Hun airmen by authorities who were unable to protect them and unwilling to warn them’.⁵⁹ Coronial inquests into the deaths of air-raid victims also called for warnings, and the Lord Mayor was cheered by a large meeting at the London Opera House when he promised to pass on to the public any warnings he received.⁶⁰ But there were two major objections, as a leading article in *The Times* explained. One was the risk of false alarms if enemy aircraft neared London but did not attack it, as happened the day after the initial Gotha raid: ‘then we should have had a wholesale interruption of daily vocations for a threat from the air which never became real’. The other was the risk that warnings might in fact cause people to rush outside in order to watch the spectacle and thereby endanger themselves, as indeed happened on 13 June: ‘women swarmed out into the streets, and we fear that in numberless cases the men showed no better sense’. *The Times* admitted that warnings would never prevent all deaths from air raids, but still hoped that ‘Warnings wisely conceived and duly standardized may, however, act as a palliative and lessen the casualties’.⁶¹

Of the proposed solutions to the Gotha crisis, reprisals and air defence both required more aircraft than were currently available, and hence relied on either an increase in aircraft and aero engine production or the redeployment of units currently fighting at the front. The latter was strongly resisted by Field Marshal Sir Douglas Haig, commander of the BEF. Despite this, several squadrons were diverted to home defence duties, but only temporarily as all combat aircraft were needed for the planned offensive in the Ypres sector.⁶² Aircraft production was already being expanded, but a surplus over the re-

⁵⁸H. W. Sullivan, *The Times*, 14 June 1917, 8.

⁵⁹‘Disgraceful’, *Daily Mail*, 9 July 1917, 4.

⁶⁰‘Child victims of the enemy’, *The Times*, 16 June 1917, 4; ‘Air raid warnings for the City’, *The Times*, 18 June 1917, 10.

⁶¹‘Air attack warnings’, *The Times*, 16 June 1917, 7.

⁶²See Powers, *Strategy Without Slide-Rule*, 64.

quirements of the RFC was not expected until 1918.⁶³ The public was not privy to these developments, and was allowed only hints. As Lloyd George assured a deputation of MPs a week after the second Gotha raid, ‘Every reasonable precaution has been taken, and whatever practicable steps can be taken along the lines of improving the defence of London are being taken’. He also announced that he and General Jan Smuts, the South African statesman, had been appointed by the Cabinet to inquire into London’s defences.⁶⁴ The two reports which resulted are crucial documents in the history of British air policy. The first was issued on 19 July and dealt with the question of air defence. It recommended that a unified command be set up to encompass fighters and anti-aircraft guns. This was quickly implemented as LADA, formed on 5 August under the command of Major-General E. B. Ashmore.⁶⁵ Smuts’ second report, on the strategic employment of airpower, followed on 17 August. He argued strongly for the necessity of an independent air force for the purpose of strategic bombing, since the full potential of airpower – including something very like a knock-out blow – was unlikely to be realised by tying it to traditional military and naval roles.⁶⁶ Once again his recommendations were soon accepted by the Cabinet. This eventually led to the formation of the Air Ministry and the RAF. To this extent the RAF owes its existence to the Gotha raids.⁶⁷ But as Barry Powers shows, after its initial acceptance of Smuts’ recommendations, the Cabinet began to lose interest in an independent air force and the reason for this is clear: the air panic over the daylight Gotha raids had subsided, and that over the night-time Gotha raids had yet to begin, for the first of these did not take place until the end of September. It took a memorandum from Admiral Mark Kerr claiming that Germany would soon have the capability to destroy Britain’s industrial

⁶³See Jones, *The Origins of Strategic Bombing*, 138-9.

⁶⁴‘Defence of London’, *The Times*, 14 July 1917, 10. See also ‘Gen. Smuts and air defence’, *Daily Mail*, 13 July 1917, 5.

⁶⁵See Powers, *Strategy Without Slide-Rule*, 69-70. Ashmore’s memoir of LADA was later published as Ashmore, *Air Defence*. LADA was the forerunner of HDAF, Fighting Area and Fighter Command: see Ferris, ‘Fighter defence’, 853-4.

⁶⁶See Powers, *Strategy Without Slide-Rule*, 90-3.

⁶⁷For a dissenting view, see Ash, *Sir Frederick Sykes*, 205, who argues that the unified air service was created to resolve the question of how to allocate aircraft production between the RFC and RNAS. See also Morrow, *Great War in the Air*, 246-58.

capacity through bombing to force the issue.⁶⁸ 246-58

In 1940, as in 1917, there was a prolonged controversy over the question of whether civilian targets in Germany should be bombed in retaliation for the raids on London and other British cities.⁶⁹ *The Times* published letters on the topic almost daily from mid-September. The first of these was from the Conservative MP Victor Cazalet, who proposed that a list of twelve German cities be drawn up, followed by an announcement ‘that unless this indiscriminate bombing ceases we intend to wipe out each night one of these German cities’.⁷⁰ Several writers agreed with him, including one who suggested that ‘An indiscriminate attack upon 12 cities is the kindest thing in the long run to the German people, because it will shorten the war and curtail their losses’.⁷¹ Likewise, George E. Leon, a prominent stockbroker, averred that ‘a good dose of their own Nazi medicine would cause the German civilian nerves to crack in such a manner as to shorten the war and put a quicker end to all its horrors’.⁷² Most participants in the debate similarly framed the desirability of reprisals in terms of their ultimate military utility. For example, R. G. Bury, a Cambridge classicist, believed that the Germans had recognised the fact that civilians were now part of the war effort, whereas the British sentimentally clung to outmoded attitudes. He therefore suggested that ‘the situation seems to call for a less closely limited offensive, not by way of reprisal but as part of the general strategy necessary for speedy victory’.⁷³ By contrast, there were those who believed that the German people simply deserved to be bombed – since, in the opinion of one correspondent, ‘the whole German nation has associated itself with its leader’s policy and

⁶⁸Powers, *Strategy Without Slide-Rule*, 96-9.

⁶⁹In fact, Bomber Command was already engaged in bombing German cities, but as the press routinely reported that only precision attacks upon military objectives such as railways and factories were being carried out, this did not appear at all comparable to the Luftwaffe’s area bombing tactics.

⁷⁰Victor Cazalet, *The Times*, 12 September 1940, 5. Cazalet’s hostility to German civilians and his faith in bombers may, in different ways, be connected to his support of appeasement until after Munich. See Crowson, *Facing Fascism*, 20-1.

⁷¹Claude H. Hornby, *The Times*, 14 September 1940, 5.

⁷²George E. Leon, *The Times*, 27 September 1940, 9.

⁷³R. G. Bury, *The Times*, 30 September 1940, 5.

methods'.⁷⁴ Opinion in letters written to the *Daily Mail* was usually blunter: one claimed that the idea of bombing only military objectives 'nonsense', and hoped that Churchill would 'order some of the German cities to be wiped out'.⁷⁵ According to one woman, the phrase "'Bomb Berlin. Raze it to the ground.'" is on everybody's lips'.⁷⁶

At this time, the *Daily Mail* was receiving hundreds of letters per day on all topics with 75% in favour of reprisals and only 1 in 80 opposing the idea.⁷⁷ Two days later, the proportion in favour remained the same, but now 9% of all letters opposed reprisals.⁷⁸ By 1 October, this figure had climbed to 30%.⁷⁹ But outside of the Rothermere press, the idea of reprisals was probably opposed more than proposed. The editorial position of *The Times* itself was that 'it would be a serious mistake to allow the new policy of terrorism to dictate our own tactics'.⁸⁰ Three letters published on 18 September capture the reasoning behind this opposition, variously diplomatic, religious or strategic. A former headmaster of Haileybury, Edward Lyttelton, wrote that 'bombing of civilians knowingly is murder'. He approvingly quoted the *Christian News Letter*, which was worried about the reception of such acts in neutral countries, for 'if we are not standing for ideals of humanity and justice which our enemies have repudiated what grounds are there for expecting world opinion to rally to our cause?'.⁸¹ A second letter was claimed by its author to be representative of 'a large body of opinion' in believing that 'Britain must keep her hands clean if she is to experience the blessing of Almighty God, and His deliverance in the hour of danger'.⁸² More pragmatically, A. Nelson Heaver (formerly of the RNAS and RAF) argued that reprisals were a futile distraction:

Retaliation is a temptation to diffuse our energy when it should

⁷⁴A. L. Kennedy, *The Times*, 26 September 1940, 7.

⁷⁵William H. Foster, *Daily Mail*, 20 September 1940, 3.

⁷⁶A. Penington, *Daily Mail*, 24 September 1940, 3.

⁷⁷*Daily Mail*, 25 September 1940, 3.

⁷⁸*Daily Mail*, 27 September 1940, 3.

⁷⁹*Daily Mail*, 1 October 1940, 3.

⁸⁰'Air war in perspective', *The Times*, 12 September 1940, 5.

⁸¹Edward Lyttelton, *The Times*, 18 September 1940, 5.

⁸²R. E. A. Lloyd, *The Times*, 18 September 1940, 5.

be concentrated on the single object of destroying the means by which the enemy is interfering with our own war production. All our force should be directed towards destroying enemy aircraft, aerodromes, and aircraft factories. After that the rest is simple.⁸³

These arguments were the same ones used in 1917 against the initiation of reprisals.

The other major reaction to the devastation wrought by the Blitz was a call for a thorough reconsideration of air-raid shelter policy. A lack of sufficient or safe shelter spaces, especially in the crowded working-class areas of the East End, caused a large number of people to take refuge in Underground stations, despite official disapproval.⁸⁴ This led to a revival of the pre-war campaign for a comprehensive system of deep shelters, which would be far enough underground to be proof against any but the most improbable bomb hit, as opposed to cheaper but more vulnerable surface shelters. The Communist Party had failed then to convince a suspicious, largely Conservative government to embark on such a hugely expensive undertaking.⁸⁵ It now revived its agitation, supported mainly by left-wing opinion. Already, at the end of August, the *New Statesman* warned that a failure to provide adequate shelters, including deep ones near key factories, might produce ‘a mood of defeatism’.⁸⁶ Several weeks into the Blitz proper, as the few deep shelters filled to overflowing while nearby surface shelters remained practically empty, the *Manchester Guardian* lent its support to the agitation. It regretted that deep shelters had not been constructed on a large scale two years ago ‘after the first trials of city bombing in Spain’, but since the government was planning for a three-year war, it was not too late to start: ‘if we are to prepare against several years more of war every encouragement should be given to the construction of deep bombproof shelters wherever the nature

⁸³A. Nelson Heaver, *The Times*, 18 September 1940, 5.

⁸⁴See, e.g., ‘Using Tubes as shelters’, *Manchester Guardian*, 19 September 1940, 5. It must be noted that despite their prominence in both the postwar, and to a lesser extent, the contemporary literature, only a small proportion of London’s population sought shelter in the Tube, never exceeding 5%. See Harrison, *Living Through The Blitz*, 111.

⁸⁵See p. 134.

⁸⁶‘The war in the air’, *New Statesman*, 31 August 1940, 197.

of the soil makes it reasonably easy'.⁸⁷ On the right, the *Daily Mail* was also urging the Home Secretary, Sir John Anderson, to reconsider his opposition to deep shelters, as well as calling for empty cellars under West End houses to be 'thrown open, so that people could bring their mattresses and get some sleep' during air raids.⁸⁸ By now, politicians and technical experts were pressing their views upon the government. Lloyd George pointed out that it was not too late to act, since 'In Spain – in Barcelona and Madrid they built all their shelters after the [civil] war began', while Labour MP Richard Stokes estimated that a system of tunnels could be built to shelter the entire population of London for only £120 million.⁸⁹ At month's end, the *Manchester Guardian* was somewhat mollified by the government's new acceptance of Tube shelterers, but was still certain that 'The need for a big deep-shelter building programme remains'.⁹⁰

Not everyone was convinced of the need for deep shelters, however. With few exceptions, conservative publications tended to be sceptical, arguing that it was easier to improve shelter conditions and make more use of existing cellars.⁹¹ In particular there was a consensus that since people were staying in public shelters for longer than the government had anticipated, especially at night, arrangements had to be made for rest and sanitation. The *Spectator* called for a thorough survey to be undertaken of potential shelters in London, if necessary using compulsion to force their owners to open them to the public. While it was pleased with plans to install bunks in all forms of public shelter, it added that 'Heating, ventilation, and sanitary arrangements must not be neglected. Rest at night is an indispensable condition of good work during the day'.⁹² Other suggestions aimed at providing increased protection for the working class included internal shelters (for example, strengthening the front rooms of tenement housing), the opening of works shelters to the public, and

⁸⁷'Shelters', *Manchester Guardian*, 21 September 1940, 6. But the *Manchester Guardian* itself had not supported deep shelters in 1938: see p. 262.

⁸⁸'Questions for Sir John', *Daily Mail*, 17 September 1940, 2.

⁸⁹'Comfortable shelters, deep underground', *Manchester Guardian*, 25 September 1940, 4; *Manchester Guardian*, 23 September 1940, 4.

⁹⁰'The long view', *Manchester Guardian*, 30 September 1940, 4.

⁹¹See, e.g., 'The shelter problem', *The Times*, 25 September 1940, 5.

⁹²'The situation in London', *Spectator*, 27 September 1940, 308.

the provision of something very much like the later Morrison shelter.⁹³

There were of course many other reactions to the threat of bombing. Though they did not attract as much attention as reprisals or shelter policy, two deserve mention. The first is evacuation. The voluntary flow of people, mainly children, from vulnerable areas to the countryside in September 1939 had to a large extent reversed by the time the German air offensive finally began a year later.⁹⁴ There was widespread agreement in the press that the whole process had to start again: ‘Concentration suits Hitler’s book too well. The tide of school-children should flow back to the country’, as the *Spectator* wrote immediately after the Blitz began.⁹⁵ Two weeks later, it urged that the evacuation then underway be accelerated and expanded: ‘It is time to think of London as a front-line area where front-line work goes on all the time, housing only those whose occupation demands their presence’.⁹⁶ Lord Strabolgi had gone further in calling for the compulsory evacuation of ‘old people and those not actually working’.⁹⁷ Other far-reaching evacuation schemes were sometimes proposed. The *Manchester Guardian* predicted that wives would not evacuate unless their husbands were looked after, and so foresaw that the latter would have to be ‘maintained as a bachelor population and given communal feeding and safe shelters to sleep in’.⁹⁸

The other notable reaction was the demand for a reorganisation of post-raid welfare services. Under the devolved ARP system set up from 1935, these were the responsibility of local authorities.⁹⁹ The Blitz exposed the shortcomings of this arrangement, especially when it came to providing emergency accommodation for bombed-out families, or even repairs to damaged houses, particularly in poorer boroughs. Some on the right, like Paul Bewsher of the *Daily Mail*, wanted the government to ‘reorganise the whole life of the

⁹³Harry Eaves, *Manchester Guardian*, 12 September 1940, 8; ‘Shelters’, *Manchester Guardian*, 17 September 1940, 4; H. L. Pritchard, *The Times*, 27 September 1940, 5.

⁹⁴See Gardiner, *Wartime*, 14-44, 344-50.

⁹⁵‘A decisive hour’, *Spectator*, 13 September 1940, 260.

⁹⁶‘The situation in London’, *Spectator*, 27 September 1940, 308.

⁹⁷Strabolgi, *The Times*, 11 September 1940, 5. Before succeeding to his title, Strabolgi was known as J. M. Kenworthy.

⁹⁸‘The long view’, *Manchester Guardian*, 30 September 1940, 4.

⁹⁹See Titmuss, *Problems of Social Policy*, chapter 4.

community, if necessary' to help the victims of bombing.¹⁰⁰ But overall this was, predictably, of greatest concern to periodicals on the left, which argued that sufficient housing, labour and materials existed in London to help raid victims – if only wealthy boroughs could be compelled to share resources with poorer ones.¹⁰¹ There was therefore some enthusiasm for a degree of central control. The *Manchester Guardian* called for someone of ministerial rank – Herbert Morrison was suggested as a point of comparison – to co-ordinate between the relevant ministries and boroughs, the police and so on: 'Such a man could handle the rescue and disposal of dispossessed Londoners as Admiral Ramsay handled the rescue of the B.E.F. from Dunkirk'.¹⁰² The *New Statesman*, following the lead of its journalist, Ritchie Calder, campaigned for a welfare board. The many post-raid fumbles catalogued by Calder were, he asserted, the result of the government's refusal to award the London City Council the powers to compel incompetent boroughs. He called for reform and hinted darkly at the consequences of failure to act:

I suggest that a Welfare Board for London should be immediately appointed to supersede the overlapping and antiquated system of authorities which, with the best will in the world, are quite incompetent to deal with a Blitzkrieg situation. Mistakes now will be unforgivable.¹⁰³

Letters of support came from doctors, social workers and Tom Harrisson, the anthropologist founder of Mass-Observation.¹⁰⁴ Kenneth Lindsay, a National Labour MP for a Scottish constituency, favoured nothing less than the creation of a regional government for London, 'not because Whitehall has broken down, but to release it for higher strategy. On the other hand local councils cannot be expected to cope with the results of bombardment, but they can carry out clear instructions'.¹⁰⁵ The Blitz, though ostensibly a

¹⁰⁰Paul Bewsher, 'A plan to find shelter for the homeless', *Daily Mail*, 27 September 1940, 2.

¹⁰¹See p. 131.

¹⁰²'After-care of raid victims', *Manchester Guardian*, 17 September 1940, 4.

¹⁰³Ritchie Calder, 'The war in East London', *New Statesman*, 21 September 1940, 278.

¹⁰⁴T. Harrisson, 'War adjustment', *New Statesman*, 28 September 1940, 300-1.

¹⁰⁵Kenneth Lindsay, 'Leaderless London', *Spectator*, 11 October 1940, 360.

military campaign, was evidently best defeated with bureaucracy.

Resolution

Since the formation of LADA in early August 1917 was not announced to the public, the reason for the ebbing that month of alarm over the Gotha raids is not entirely clear. It would seem to be largely due to the authorities' experimentation with and adoption of air-raid warnings in July, combined with the absence of further attacks. The *Daily Mail* reported the announcement on 12 July by the Home Secretary, Sir George Cave, that London was to be ringed by a 'wide circle of observation posts [in] rapid telephonic communication with the central office, from which the public warnings will be issued'.¹⁰⁶ Authorities then carried out a series of experiments into the most effective form of warning: signs carried by police cyclists; sirens; or smoke and sound bombs.¹⁰⁷ By the end of July a warning system had been developed which embraced the Home Office, fire brigades, police forces, and local government.¹⁰⁸ The aviation correspondent of the *Manchester Guardian* thought that 'the new system of air-raid warnings in London worked excellently on Sunday morning, and that casualties in any future raid are likely to be small'.¹⁰⁹ The effectiveness of these measures in calming nerves suggests that surprise was the most feared characteristic of the Gotha raids.

The Blitz on London did not end until May 1941, though it became much more variable in intensity after the end October 1940 when the Luftwaffe began to bomb provincial cities in strength, starting with Coventry on the night of 14 November. But as far as the national press was concerned, a more significant turning point seems to be late September and early October. During that period, the London Blitz began to be treated less as an urgent

¹⁰⁶'Warnings decided on', *Daily Mail*, 13 July 1917, 6.

¹⁰⁷'Raid warnings', *The Times*, 14 July 1917, 7; 'Air raid warnings', *The Times*, 18 July 1917, 3; 'The first warning', *The Times*, 23 July 1917, 3.

¹⁰⁸'Ajr raid warnings', *The Times*, 27 July 1917, 7.

¹⁰⁹'The German air raid system', *Manchester Guardian*, 27 July 1917, 10. The reference is to a trial of sound bombs, set off in London on 22 July as German bombers attacked Harwich and Felixstowe.

crisis and more as an uncomfortable but bearable fact of domestic life, rather than an existential threat to British society.¹¹⁰ In other words, the defence panic over the Blitz ended when the issues which had appeared so critical earlier in September were brought under control, thanks largely to belated government responses to the crisis.

The most important of these was the improvement in shelter conditions and assistance for those made homeless by bombs. Just as the *Manchester Guardian* showed the most concern about the government's failings in this area, so too did it display the greatest interest in the new measures – but also the greatest scepticism. So on 17 September, in response to news that people in bombed-out areas were now getting one hot meal per day, the London correspondent judged this to be 'hardly a tremendous achievement'. They rejected the government's excuse that far more homeless people turned up at the rest centres than had been anticipated, since:

even the Government's own air-raid defence literature should have taught it to expect such a thing, seeing that it envisaged very heavy casualties, far heavier than we have yet had, from intense bombing, and you cannot have heavy casualties without much destruction of property.¹¹¹

But over time the note of reservation began to fade. By 28 September, while still complaining of official lethargy, the same writer lauded the example of 'Stoke Newington, one of London's most progressive boroughs in providing A.R.P. shelter for its population'.¹¹² On 2 October, Lord Woolton told the press that the Ministry of Food had succeeded in fulfilling its duty to make sure every part of London had enough food, even 'though it had become an entirely new problem since the Blitzkrieg began'.¹¹³ The turning point was perhaps the announcement that a million bunks were to be procured to turn shelters into dormitories, along with the construction of new shelters

¹¹⁰A similar trend is evident in weekly morale reports produced by the Ministry of Information: see Calder, *The Myth of the Blitz*, 126-8; Mackay, *Half the Battle*, 79-81.

¹¹¹*Manchester Guardian*, 17 September 1940, 4.

¹¹²*Manchester Guardian*, 28 September 1940, 6.

¹¹³See 'Feeding centres in bombed districts', *Manchester Guardian*, 2 October 1940, 7.

and the opening to the public of shelters belonging to businesses. Moreover, the principle that Underground stations could be used as deep shelters was finally accepted by the government, long after this had occurred in practice. A *Manchester Guardian* leading article on 24 September declared that the ‘shelter plans are excellent’, though characteristically warned that plans in and of themselves would not be enough.¹¹⁴

Another important factor in domesticating the Blitz was the appointment by the government of two regional commissioners for London. One of these, Henry Willink, a Conservative MP, was charged with co-ordinating the care and rehousing of bombing victims. Sir Warren Fisher, recently retired as the Treasury’s senior civil servant and head of the Civil Service, was to oversee post-raid repair and salvage work. ‘Central control at last’ was how the *Manchester Guardian* greeted this news.¹¹⁵ Two days later, its leading article explained how most of the failures of the post-raid welfare system were mainly a result of a lack of co-ordination. Already ‘There has been great improvement, and the appointment of the two new Regional Commissioners [...] is an instalment of the central direction for which everyone has been clamouring. Whether the instalment is big enough we soon shall see’.¹¹⁶ For its part, *The Times* called the appointments a ‘response to the irresistible argument that a large number of local authorities are not the only or the best agents to deal with problems which far transcend the area of administration of any one of them’.¹¹⁷ The press also noted other signs that essential services were adapting to the Blitz. For example, the *Manchester Guardian* sympathetically reported a General Post Office account of the difficulties caused by bombing to the delivery of mail. The last fortnight had witnessed successes which, ‘if they could be told, would reassure the public as to the soundness of the Post Office organisation [...] and of the failure of the enemy to break the essential scheme of communications’.¹¹⁸

The renewal and expansion of the evacuation programme was also wel-

¹¹⁴‘New shelter policy’, *Manchester Guardian*, 24 September 1940, 4.

¹¹⁵*Manchester Guardian*, 28 September 1940, 6.

¹¹⁶‘The long view’, *Manchester Guardian*, 30 September 1940, 4.

¹¹⁷‘Two new commissioners’, *The Times*, 30 September 1940, 5.

¹¹⁸‘P.O. and air raids’, *Manchester Guardian*, 27 September 1940, 8.

comed. The *Manchester Guardian* devoted nearly an entire column of newsprint to the Ministry of Health's explanation of new rules regarding who could receive assistance under the official scheme. At the start of the Blitz, school children had been evacuated by themselves, but as mothers continued to resist being parted from their children they were soon allowed to accompany them if they had been bombed out; after two weeks of bombing, those with homes intact were being allowed to evacuate as a precautionary measure, if they were in the hardest-hit areas. The reason was stated to be the 'real risk of the spread of infection' in overcrowded shelters. Although half of all children in the Greater London, Thameside and Medway areas were reported to have been evacuated to reception areas, a determination to increase this proportion was evident.¹¹⁹ In early October, the same newspaper's London correspondent reported that an average of two thousand mothers and children a day were being evacuated: 'pretty good, but not as good as expected'. To encourage a greater uptake of the government offer, parents were assured that, unlike the first evacuation in September 1939, 'Reports from reception areas show that things are going smoothly. The people there realise what the London children have been going through and, generally speaking, are treating them with the greatest kindness and consideration'.¹²⁰

The final element in the resolution of the early Blitz was the progress of the war itself. During September and early October, it became possible to declare that the German assault had been defeated, or at least forestalled, on the basis of three distinct measures. The first was the success of daylight air defence in the Battle of Britain.¹²¹ After Fighter Command's great success on 15 September, when 185 German aircraft were reported to have been shot down, a leading article in *The Times* noted that these figures,

¹¹⁹'New invitation to leave London', *Manchester Guardian*, 25 September 1940, 5.

¹²⁰*Manchester Guardian*, 4 October 1940, 4.

¹²¹The later tendency to neatly divide the 1940 air war over Britain into the Battle of Britain on the one hand, and the Blitz on the other, is artificial and to some degree unhelpful, at least from a strategic perspective, for it obscures the fact the bombing of London in September, both by day and by night, was an attempted knock-out blow by way of the destruction of infrastructure, and as such qualitatively different from the attrition of the later Blitz. The Luftwaffe's objectives changed once Sealion was postponed. See Overy, *The Battle*, 80-1, 88-9.

when added to those of the preceding weeks, 'reflect the strategic failure of the German offensive, which has not succeeded in driving the R.A.F. either from the skies or from their aerodromes'.¹²² Secondly, the RAF's successes in both defence and offence (in particular, against the German-held ports across the Channel) were credited with preventing the invasion. As the *New Statesman* wrote on 21 September, harking back to the days of Drake, 'If invasion now looks unlikely this autumn, it is partly that once again an Armada has been buffeted by gales, but more that a British fleet, this time of aeroplanes, has forestalled the threatened attack'.¹²³ Thirdly, after three or four weeks of heavy raids on London, it became clear that if a knock-out blow was being attempted by Germany, as a prelude or an alternative to an invasion, it had failed. At the end of September, the *New Statesman* noted that 'Three weeks of intensive bombing have not terrorised the population of London and they have not been successful in seriously dislocating communications or destroying military objectives'.¹²⁴ Similarly, a leading article of the *Manchester Guardian* declared that:

London has now had three weeks of serious bombing. From the bombardment of London the Germans hoped to produce widespread panic, to divert soldiers from the coastal defences, to destroy supplies, disturb production, and dislocate the national life. These aims, if secured, would have made invasion much easier. They have not been secured, nor will they be. There is no reason to suppose that, battered and damaged though she may be, London will be any less firm in spirit six or twelve months hence, provided we adapt ourselves deliberately and ruthlessly to new defensive ways of living.¹²⁵

Probably not coincidentally, this period of three or so weeks roughly coincides with the length of time pre-war airpower theorists had declared it would take

¹²²'The biggest day', *The Times*, 17 September 1940, 5. In fact, these figures were roughly three times the actual losses incurred by the Luftwaffe on 15 September.

¹²³'The battle of London', *New Statesman*, 21 September 1940, 273.

¹²⁴'After three weeks', *New Statesman*, 28 September 1940, 297.

¹²⁵'The long view', *Manchester Guardian*, 30 September 1940, 4.

for a knock-out blow to cause a British collapse.¹²⁶ The end of major daylight raids, wrote the *Spectator's* Strategicus, marked 'the end of a phase of the air-war', adding that 'The conviction that we have defeated the Germans and passed through a very dangerous crisis seems inevitable' in light of evidence that Germany was now preparing for a long war.¹²⁷ The blitzkrieg – and the knock-out blow – had clearly failed, and the press largely turned its attention to other matters: for example, as the *Daily Mail* noted that the Luftwaffe had just suffered its 'most humiliating reverse' of the Blitz, it also reported that the RAF was 'preparing the knock-out' against Germany itself.¹²⁸ As winter neared and the problem of the night bomber grew ever more acute, press concern over the conduct of the air war was to rise again, but for the moment, the panic was over.

Conclusion

London's experience of bombing in 1917 and in 1940 was in both cases the occasion of a defence panic. This is hardly unexpected, for there could be no doubt that a threat to the nation's safety existed while it was actually under attack. But during wartime, consciousness of the need to avoid alarming the public meant that press discussions of bombing had to actually downplay the danger to an extent, particularly on the subject of panic.¹²⁹ The apparent editorial confidence in the impossibility of panic is belied by the very frequency with which the subject was discussed. However, this was also in part relief at the continuing absence of the panic and exodus which had been predicted before the war. The theory of the knock-out blow had been formulated by

¹²⁶See p. 63. Some observers even felt able to declare the offensive a failure after as few as three days, such as one doctor working in an East End hospital, since the only effect of bombing on morale was 'to increase our determination': H.D.S.V., *New Statesman*, 28 September 1940, 308. Similarly, a period of three days roughly corresponds to the time taken for the knock-out blow to have effect in its more extreme forms.

¹²⁷Strategicus, 'The war surveyed: Hitler's set-back', *Spectator*, 4 October 1940, 334.

¹²⁸'RAF on top, preparing the knock-out', *Daily Mail*, 1 October 1940, 1. A major exception to the waning of the panic was the continuing left-wing campaign for deep shelters.

¹²⁹See Mackay, *Half the Battle*, 145-7.

the time of the Gotha raids in 1917, but was not yet an orthodoxy. And during the summer of 1940, it was joined, and to some extent replaced, by the related concept of blitzkrieg. But it is clearly the case that most elements of the knock-out blow found their way into the press scares. Panic was one such element; in 1940, disorganisation was another. In part this may have been the legacy of L. E. O. Charlton and other airpower writers, but it was also a reaction to the actual chaos on the ground.

The possibility of reprisal raids against Germany was the subject of much discussion in both wars, particularly among conservatives. Yet as attractive as the idea was to a segment of the letter-writing public, it was repugnant to an almost equal number of their compatriots who objected on both moral and pragmatic grounds. But of more interest are the differences. In 1917, most reactions involved some form of resistance: air defence, forward defence, reprisals. In 1940, by contrast, the possibilities on offer were nearly all about adaptation: shelters, evacuation, welfare. This would seem to contradict the myth of 'The Few'. It is possible that Baldwin's dictum that 'the bomber will always get through' had been internalised, and so the necessity seemed to be to minimise the damage to morale. But it may also be that the successes of Fighter Command, while not completely allaying fears, showed that Britain's air defences were strong, and that it was elsewhere that deficiencies needed to be made up.

Resistive and adaptative reactions are often treated separately by historians, at least for the Blitz.¹³⁰ But calls for reprisals and for post-raid welfare were both reactions to the threat of a knock-out blow, and both derived ultimately from a particular, but now very personal, understanding of aerial strategy: reprisals from anger and the belief that hitting back harder was key to victory, post-raid welfare from fear and the need to protect civilians and their morale.¹³¹

¹³⁰See, e.g., Connelly, *Reaching for the Stars*, 32-4 and Titmuss, *Problems of Social Policy*, chapter 14. For 1917, there exists a more integrated account: see Powers, *Strategy Without Slide-Rule*, 55-63.

¹³¹Interestingly, the dehousing strategy of Bomber Command from mid-1941 struck at just the vulnerability revealed by the Blitz, although there seems to be no evidence that it was particularly influenced by this. See Connelly, *Reaching for the Stars*, 43-4.

The defence panics of both 1917 and 1940 were not resolved by a resort to reprisals, as so many called for, but by two factors. The first was a change in the nature of the air war – in both cases, the end of daylight raids and the beginning of night raids – which was interpreted as evidence that the threat had receded. The second was the steps taken by the government to directly ensure the safety of civilians: the institution of air-raid warnings in 1917, and the provision of better shelters and the co-ordination of post-raid welfare in 1940. Domesticating the war was a key to victory on the home front.

The air panics echoed many of the themes of the knock-out blow, deviating significantly only in the Edwardian period, before the concept had been developed. They divide into three types, defined by the perceived proximity to danger. All took place when the international situation gave cause for concern: there were no air panics in the late 1920s and early 1930s, when the ‘spirit of Locarno’ was still abroad. In 1913, 1922 and 1935, the international climate was unsettled: war was a possibility but still a distant one. The air menaces of those years reflect concerns about the future: the possibility that Britain’s air force might be greatly outnumbered by a hostile air force, leading to the destruction of London in wartime. This being a somewhat theoretical prospect, simply expanding the air force in response was the only reaction to receive much attention. The other two types of air panic took place either under the threat of bombing, in 1938, or during bombing itself, in 1917 and 1940. Increasing the RAF was not an effective solution to such an imminent danger. Instead, the press primarily placed its trust in ARP, which could be implemented much more quickly. In 1917 and 1940, more so than in 1938, more ARP was demanded, such as raid warnings and better post-raid services. This is unsurprising, since panic, gas and disorganisation were variously considered the main threats in these panics. Analysis of the potential damage to be expected in an air war tended to be more circumspect

than in the air menace panics, and arguably more realistic. It seems that it was felt unnecessary to rehearse the knock-out blow idea for readers. Perhaps it was thought to be already familiar, or else the events in Spain and China earlier in 1938 had adequately prepared minds for the danger in September. The great exception to this was the stated belief of many writers in 1938 that the next war would end civilisation: if true, a tremendous argument for appeasement. Such rhetoric was absent in 1917 and 1940, when it would have been deemed defeatist and unpatriotic. Taken together, the panics of 1917 and 1922 seem to have contributed most to the public understanding of the knock-out blow, reinforced by the panics of 1935 and 1938.

The correlation between the perceived proximity of danger and the observed type of reaction is highly suggestive. When danger seemed near, only defensive or offensive reactions – roughly, adaptive or resistive responses, in the terminology of Part II – had any hold on the discourse about what should be done. Such fight-or-flight reactions were short term solutions, ones which had some chance of being implemented before it was too late. By contrast, internationalist solutions could only be contemplated when the threat of bombing was distant, for they took too long to come to fruition and were too fraught to be agreed to in times of international crisis.

In nearly all panics, reprisals (in war) or deterrence (in peace) was the favoured use of Britain's air force. The feared destruction of civilisation was born of a similar belief in the primacy of the bomber. This consistency across time does suggest that the more apocalyptic visions of the world's end were genuinely held and thus helped motivate a desire for appeasement, rather than the other way around. It could also lead to support for internationalist solutions, such as disarmament or collective security in its various forms. That these do not feature very strongly in this study may be due to the primary sources used, which are skewed towards the airminded right. But it also may be that in the longer term, after a particular panic had died down and the immediate danger ended it, that its legacy was in fact increased support for collective security and other internationalist responses.

Air defence was barely mentioned, which conforms to the knock-out blow paradigm, but also to the requirements of appeasement. This underestima-

tion of the fighter long predated Stanley Baldwin, or even P. R. C. Groves, which suggests that it had deep roots. It was still evident even in 1940, after the Battle of Britain, at least to an extent. This suggests that Fighter Command's sustained successes over the Luftwaffe in August did not necessarily lead to confidence that the air war would be won. The bombers were still getting through, and from 7 September were for the first time directing their full attention against London. Britons would have to pass a stern test before victory over the bomber could be proclaimed. Hence the domestication of the Blitz in the press: this part of the war could only be won on the home front, not in the air. The origins of the postwar welfare state lay here as much as in the 1942 Beveridge Report.¹³²

The role of experts in air panics tended to decrease over time. In 1922, Groves was almost single-handedly responsible for starting an air panic; in 1935 and 1938, the opinions of experts were generally only invoked if they had recently published a book on a relevant topic – for example, L. E. O. Charlton in 1935, or J. B. S. Haldane in 1938. It may be that once the knock-out blow narrative was formulated, as was the case by the mid-1920s, the opinions of experts did not matter so much, since everyone 'knew' what the next air war was supposed to be like. This could explain why the professional strategists' scepticism of the knock-out blow which began to appear in 1938 did not alter the opinions about airpower expressed during the Sudeten crisis, or even, to an extent, during the Blitz.

It has been suggested that the public's fear of the bomber could have been used to gather support for a less timid rearmament programme.¹³³ Indeed, the early rearmament programme of 1934 was partly designed to calm the 'semi-panic conditions which existed about the air', as Baldwin explained to the Cabinet Disarmament Committee in July 1934.¹³⁴ In the General Election of November 1935, Baldwin won on a platform of strong support for the League of Nations and only such rearmament as was needed to support collective security. But the subsequent RAF expansion was much more heavily

¹³²Cf. Smith, *Britain and 1940*, 103-4.

¹³³See, e.g., Ruggiero, *Neville Chamberlain and British Rearmament*, 24.

¹³⁴Cabinet Disarmament Committee minutes, 2 July 1934, CAB 16/110; quoted in Bialer, *The Shadow of the Bomber*, 51.

weighted towards bombers than fighters, which remained the case right up until 1938.¹³⁵ Expansion centred on air defence and not offence would have been much cheaper, but there was no constituency for this in the mid-1930s. Conversely, a large-scale deep shelter system would likely have proved popular, had the government chosen that option. But while it might have helped avoid defeat, it would not have helped bring victory, and its great cost would have come at the expense of the offensive weapons which could.

The concept of defence panics, as developed here, permits a focus on periods of crisis, exposing the ideas held about air attack by the press. The value of this is that it helps us understand what the public was told they should think about air attack, and how this changed in response to the international situation. It cannot be assumed that the public simply accepted what they were told at face value. But, by and large, politicians believed that they did, particularly in the absence of opinion polls. If there was a mismatch between *actual* public opinion and *perceived* public opinion, then that had consequences for the chosen defence and foreign policies, particularly under the Baldwin and Chamberlain governments in the late 1930s. It is understandable that most historians of airpower in Britain before the Second World War have previously concentrated on strategic, political and institutional studies, which are certainly of primary importance for understanding how the RAF evolved, and permit relatively straightforward analysis of the activities and interactions of well-known personalities and organisations (for example, Trenchard or the CID). But an understanding of the perceptions of airpower in the more confused and confusing public sphere is also vitally important for a democracy such as Britain, not least because politicians were influenced intellectually, culturally and politically by the views of the electorate. The reverse is also true, of course, and some scaremongering by politicians may have been engaged in order to further their own agendas, but in general panics did not start this way. The public were most influenced by the media and other unofficial sources, which is why the defence panic idea

¹³⁵Since press opinion was even more heavily weighted towards bombers before 1938, and since politicians commonly took press opinion to reflect public opinion, this is not surprising from a political point of view.

is useful.

The defence panic model is not without weaknesses. It is not predictive. Even as description, in long crises (such as the Sudeten crisis or the 1935 air panic) it can be difficult to distinguish between emergence and resolution, particularly when it comes to government actions. For example, was the distribution of gas masks in September 1938 a resolution of fears, or did it cause them to emerge? The latter seems a better fit to the evidence, yet as a government response to a threat in the late stages of panic, it should otherwise be calming. Primarily, the defence panic concept is a descriptive framework, around which an analysis of the influence of the mass media on defence issues can be constructed. It is only one part of the solution to the problem of public opinion and defence policy.

Conclusion

The bomber was not a constant presence in the British consciousness: the degree to which it threatened varied over time. And its threat first had to be constructed by airpower writers. The early imaginings of novelists in the 1890s bore little resemblance to later predictions of the impact of airpower: their solitary airships were feeble in comparison. But beginning in the late 1900s, various writers – most importantly, H. G. Wells and Montagu of Beaulieu – began to assemble most of the crucial components of what later became the knock-out blow. Some of them foresaw surprise attacks by large aerial fleets, which would terrorise civilians, destroy key nerve centres, or simply turn cities into rubble. Other key ideas which began to form before the First World War included the belief that London was an especially vulnerable target, that civilians were prone to panic, and that there was no defence against air attack. But there was little consistency or consensus: nobody possessed a coherent theory of the knock-out blow, and, after all, aerial warfare was itself merely a theoretical proposition. There was little idea that airpower could win wars by itself.

That changed after 1914, when Europe went to war. The fledging air forces of all the combatants learned quickly to use their aircraft for offensive purposes, including strategic bombardment. Britain itself was bombed by German airships and aeroplanes, albeit on a small scale. But even more important to the emergence of the knock-out blow than the accumulating experience of aerial warfare was the unexpectedly bloody and protracted struggle on the Western Front and elsewhere. In 1916, Claude Grahame-White and Harry Harper envisaged a different way of war, one which would start and end in the air, all in the space of a few hours. Aircraft could

simply fly over armies and trenches and deliver their bombs directly to enemy cities, destroying the civilian population's will to fight and winning a decisive victory. This was the first articulation of the knock-out blow theory: in a strange way, a message of hope, for it promised that the next war would be far shorter and less deadly overall, even if civilians would now suffer more than soldiers. But it was civilians, not soldiers, who first created this vision of the next war in the air.

By the end of the First World War, airpower had played only a minor part in the Allied victory. This did not deter writers from forecasting that it would become the decisive arm in the next war. They extrapolated from limited evidence: German air raids on Britain, especially the Gotha raids in the summer of 1917, seemed to support the idea that air defence was ineffective; the revolutions in Russia and Germany in 1917 and 1918 showed that a weakening of civilian morale could be critical. The rapid retrenchment of the RAF, the world's first independent air force and, by war's end, the largest, also encouraged exaggerated claims for the power of aircraft by its partisans. In 1922, P. R. C. Groves published a series of articles in *The Times* about Britain's aerial weakness which were widely discussed and brought the idea of a knock-out blow to a wider audience. Groves also added to the discourse the idea of the convertibility of civilian aircraft into bombers, which he used to portray Germany as a mortal threat to Britain, even though forbidden from the possession of military aircraft by the Versailles Treaty.

Groves became the interwar period's most influential military intellectual on aerial warfare, and he set the pattern for those who followed in his footsteps. There were many of these, and few dissenters from the knock-out blow. The airpower writers were able to turn the knock-out blow into a near-orthodoxy by the early 1930s. But their warnings were detached from geopolitical reality: there was no plausible enemy within striking range of Britain, especially after the signing of the Locarno Treaties in 1925 seemed to cement Europe's peace. Novelists were free to imagine elaborate scenarios where, for example, Germany was under the secret control of the Soviet Union, to be used as a forward base for attacks on London. But more serious commentators could only point to the rapid progress in aviation technology,

and warn of some future period when a new aerial enemy might emerge on the Continent.

They did not have long to wait. After 1933, it was obvious that the Nazi assumption of power would mean, sooner or later, the revival of German airpower as part of its revision of the Versailles settlement. War began to seem likely rather than unthinkable, and an increasing torrent of books and novels attempted to predict what would happen when it came. Fear of the knock-out blow spread during the mid-1930s, aided by the government's ARP campaign which focused on gas protection and the assumption that 'the bomber will always get through', as Stanley Baldwin proclaimed in 1932. Even more disturbing was the involvement of several great powers in conflicts in Abyssinia, Spain and China, which the instruments of collective security pieced together in the decade following the First World War did little to prevent. At first, these wars were interpreted as providing evidence for the knock-out blow, since aircraft were used in all three to indiscriminately attack civilian populations. But by 1938 it was becoming clear to most airpower writers – if not to the RAF itself, or to the press – that in fact these attacks had not been decisive, and that bombers were actually highly vulnerable to air defences. This caused the first major re-evaluation about the validity of the knock-out blow theory since the early 1920s, and scepticism then prevailed among airpower writers until the end of the Blitz. Strategic bombardment was then one of the few ways of striking back at Germany, and the bomber again resumed its theoretical place as the arbiter of war.

The range of possible responses to the threat of the bomber was explored in a parallel process. Many of the same originators were involved, but there was in addition a larger group of popularisers with diverse agendas and influences, who accepted their advice that the danger of a knock-out blow was real, but had their own opinions about what to do about it. Consequently, there was much more variation in the construction of the responses – broadly, adaptive, resistive and internationalist – than there was in the construction of the threat itself. An advantage of this schema is that it is non-teleological: it does not prejudge the evidence by focusing on those solutions which were actually used, whether successfully or not. So the international air force

concept is rescued from obscurity and placed in its proper context alongside the counter-offensive. Air defence is not given special attention just because it did defend Britain in 1940, since it was nearly always undervalued in the public sphere before then. And Bomber Command becomes just one possible response to the Luftwaffe, instead of an apparently inevitable one. This new perspective is overdue: the air force view of history has dominated the historiography of the knock-out blow for far too long.¹

The most characteristic form of adaptation, protection, was favoured mainly by the left, particularly in the form of deep shelters, since working-class homes were ill-suited for the types of defence advised by the government. However, the need for ARP measures more generally was widely supported as a necessary support to civilian morale or to at least minimise the damage caused by bombing, although some on the left feared the possible anti-democratic effects of organising the working classes to monitor each other for breaches of ARP regulations. Indeed, on the right there was some support for the imposition of more authoritarian measures, including the regimentation of the civilian population by training it so that it could withstand the psychological pressure of bombing. On the other hand, left-wing writers were quite comfortable with the idea of making those who could afford it pay for shelters they themselves did not need. Other advice preferred to stress the cultivation of self-discipline. The fear of panic was the root of such deliberations, as it was of proposals to evacuate as many civilians as possible from London and other large cities. Their crowded slums were thought to be key targets for any enemy air force, and evacuation in time of crisis was easier, and cheaper, than a large-scale programme of slum clearances. Liberalism and authoritarianism, individualism and compulsion, conflicted in the attempt to mitigate the effects of the knock-out blow.

The mirror-image of the knock-out blow was the counter-offensive, the most popular resistive response on the right. This contended that the best defence against the bomber was another bomber. But few supported the idea that Britain should bomb enemy civilians as ruthlessly as, it was feared, the enemy was prepared to bomb British civilians. In fact, detailed discussion

¹Cf. D. C. Watt, 'The air force view of history', *Quarterly Review* 300 (1962), 428-37.

of the most suitable targets was usually avoided, other than to specify air raids on strictly military objectives such as aerodromes and aircraft factories. Instead, it was hoped that the mere possession of a bomber force, one at least at parity with any potential enemy's, would deter attack altogether, although the possible convertibility of civilian aircraft complicated such calculations. Air defence always had some support but never achieved any sort of popularity until the end of the 1930s: 'the bomber will always get through' was a lesson taken too much to heart. The same was true of anti-aircraft defences, although here there was always some hope that some technological miracle would provide a reliable way to shoot down enemy raiders.

The final set of responses were internationalist in nature. These had the advantage of being in sympathy with the public desire for an end to war. The postwar years saw persistent attempts to limit warfare to the battlefield by legal means: it is a measure of the futility of these attempts that some were prepared to argue instead that the more barbarous aerial warfare was, the shorter it would be and the less destructive overall. Disarmament was widely discussed, and it seemed realistic to hope that it might be achieved at the World Disarmament Conference in 1932-4. But it was not, partly because of the convertibility problem: the abolition of military aircraft would only have exposed cities to attack by converted airliners. Internationalists attempted to resolve these issues by proposing new forms of collective security, such as an air Locarno, or stronger mechanisms for concerted military action by the League of Nations. But the most important internationalist response to the knock-out blow was undoubtedly the international air force, which found wide and strong support across the political spectrum by the mid-1930s. Its advocates hoped that such a force, coupled with the internationalisation of civil aviation and the abolition of national air forces, would harness airpower for collective security and an end to war. It was never given the chance.

These debates were carried out in the public sphere, but the public was only sporadically aware of them. It was really only when the press took a sustained interest in the dangers of air attack that the nation as a whole learned about the knock-out blow and what might be done about it. And this in turn usually happened during periods of crisis, real or apparent, when the

aerial threat to Britain loomed particularly large. These air panics recurred at intervals from the Edwardian period to the Second World War, and continued a pattern of defence panics going back to at least the mid-Victorian era. Their significance is that they were an important influence upon public opinion in defence and foreign policy matters, which is notoriously difficult to uncover. There were three kinds of air panics, corresponding to periods when war seemed remote, when war seemed imminent, and during wartime itself. When British cities were under attack, as in 1917 and 1940, only short-term responses had much support, such as reprisals or improvements to the air raid warning system. When a knock-out blow seemed imminent, as was the case during the Sudeten crisis, a similar short-term focus is apparent, but advocates took the opportunity to argue for medium-term solutions, such as deep shelter systems, in case war was delayed. It was only in times of relative peace, for example in 1922 and 1935, that long-term responses were given much publicity, particularly internationalist ones such as disarmament or the air Locarno. (The 1913 air panic took place before the knock-out blow concept and the responses to it had been fully articulated.) Flight or fight predominated when danger was near; co-operation was considered only in safer times.

The responses to the knock-out blow proposed by airpower writers provided, in general, the reactions canvassed during the various air panics. In 1913, the clamour was for a bigger air force to guard against phantom airships, just as Montagu and others had been calling for since 1909. In 1917 it was for reprisals to punish Germany for the Gotha raids: not yet an orthodox position but still compatible with the emerging knock-out blow theory of Grahame-White and Harper. In 1922, again, the conservative press called for an expansion of the RAF, which Groves accepted as a second-best alternative to airpower founded upon convertibility. In 1935, the rise of the Luftwaffe prompted renewed agitation for a bigger RAF striking force, again in conformity with the standard counter-attack strategy favoured by Groves and others. In 1938, ARP was on everybody's minds during the Sudeten crisis, and it had been a hot topic of discussion among airpower writers since the mid-1930s. In 1940, ARP was again a favoured response. But not all

reactions came from the airpower writers. In particular, the appeasement which featured so strongly in 1938 is practically absent from the airpower literature. It came not from there but from Neville Chamberlain's National Government. And not all responses favoured by airpower writers turned up in air panics. For example, the international air force was rarely advanced, even in 1935 when it was at the peak of its popularity. It may be that it was just too utopian to ever be seriously considered in times of crisis.

In this view, the press was the medium which carried ideas from experts about airpower to the public. But it was not a transparent medium: it could filter out or delay views with which it did not sympathise. The best example of this is during the Sudeten crisis in September 1938. As chapter 2 showed, books on airpower published in that year show evidence of a sea-change in their beliefs about the likelihood of a knock-out blow. But this new scepticism was not reflected in the air panic of September, with very few exceptions. The possibility of air defence was generally ignored. A year later, there was no air panic over the possibility of war with Germany, and by this time the press had come around to the view that fighters could stop bombers.

Of course, airpower writers themselves had many biases, political, cognitive and otherwise. But it is noticeable that the theory of the knock-out blow itself was largely non-ideological. Support for it can be found across the spectrum from the extreme left to the extreme right, among pacifists and militarists alike. The only sustained dissent came from navalists, who had a particular vested interest in discrediting it. The knock-out blow was practically paradigmatic in interwar Britain, at least among those writers most interested in the problems that it created. It was in the solutions that those same intellectuals proposed that ideology played a role. At the risk of gross oversimplification, conservatives favoured a counter-offensive, the left favoured ARP, and liberals favoured an international air force.

Britain was never struck by a knock-out blow. Not even the Blitz came close to the prewar fears of what would happen when the bombers returned. But this fact did not invalidate the idea of the knock-out blow. The architects of Bomber Command's nightly raids against German cities certainly hoped that they could end the war without the necessity of an invasion of the Continent. The government's reaction to the V-1 and V-2 attacks in late 1944 and early 1945 were a replay of its earlier concerns about aerial bombardment in the 1930s, with the added problem of a war-weary population which had felt itself to be safe at last.² And if the threat of nuclear warfare after 1945 had been realised, the worst fears of the prewar airpower prophets would have been vastly exceeded. Even so, there were many conceptual continuities between the pre- and post-Hiroshima periods. The opening narration of a 1984 BBC film about the effect of a nuclear strike on Britain, *Threads*, informed its viewers that 'In an urban society, everything connects. Each person's needs are fed by the skills of many others. Our lives are woven together in a fabric, but the connections that make society strong also make it vulnerable'.³ This is reminiscent of nothing so much as Montagu's nerve centre theory, which he first presented in public fully three-quarters of a century before.

More generally, there are other existential threats which societies have had to face: two which are often held to endanger us today are terrorism and climate change. Whether or not these threats are as exaggerated as the knock-out blow was in Britain between the wars – and both face more scepticism – its study may have much to tell us about how we can survive our own future. Will we wait until extreme danger is upon us, when it will be too late to enact any but the most short-term solutions, or will we be able to set aside complacency and co-operate as a planet, before it is too late?

²See O'Brien, *Civil Defence*, 645-52.

³Quoted in Sean O'Sullivan, 'No such thing as society: television and the apocalypse', in: Lester D. Friedman, editor, *Fires Were Started: British Cinema and Thatcherism*, 2nd edition (London: Wallflower, 2006), 234.

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