

The First Battle of Britain

British Response to German Strategic Bombing in the First World War

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In a June 14, 1917 letter to the editor of London-based newspaper *The Times*, a reader expressed his anger at the latest German bombing of the city. In what was undoubtedly an opinion felt by many residents, he wrote that now was the time for immediate retaliation against the Germans. Britain “must be ruthless and strike without mercy” he demanded. The writer called on British authorities to defend London’s women and children against the barbarous brutality of Germany. “Have they seen” he wrote, “a little boy’s body in the road with his head severed close to a woman without any legs? Other mothers, too, with dead babies in their lifeless arms!” The anguished commentator condemned what he perceived to be three years of inaction by the British government and demanded retribution for German bombing of civilians which “have justified every hellish invention which the mind of man can conceive.”

The emotion with which the writer penned his outrage is understandable. The First World War introduced not only weapons of mass destruction such as poison gas, but for the first time in recorded history, cities, industry, and civilians hundreds of miles from the front lines could be targeted. Death could rain down from the sky with little to no warning. The residents of London bore the brunt of the German strategic bombing campaign, although other areas of England were also subjected to aerial attack.

Protected for centuries by the Royal Navy and the natural defenses of the English Channel and North Sea, German efforts to attack the British people on the home front caused panic and outrage among the masses. Politicians and the public pressured military leaders to use British aircraft to target German industry and cities in retaliation for the bombing of Britain. Some government and military leaders argued that strategic bombing of German industrial targets would shorten the war by slowing down or stopping needed supplies to the Central Powers. Targeting industry, they claimed, would restrict German aerial operations, thus protecting English civilians, and divert needed resources to defend Germany and away from the western front.

Damaging the German war machine, however, was not the only reason British leaders began advocating for a strategic bombing campaign against the Germans. Almost from the advent of aerial bombing strategists theorized that this new form of warfare could directly affect the civilian population of a country by damaging their morale and lessening their will to fight. Subjecting a civilian population to the constant anxiety and fear of aerial bombardment, some believed, would cause panic and chaos at home and thus force political leaders to sue for peace or face constant devastation of the domestic population. Throughout the war, for all sides, the morale of the citizens played an increasingly greater role in aerial operations. British morale in particular was deeply influenced by this new form of warfare. After all, Great Britain was among the first countries to experience the devastating effects of aerial bombardment to its towns, villages, and greatest city. In response the British high command conducted a strategic offensive bombing campaign of their own. Of debatable military necessity, this campaign was primarily in response to British public demand for reprisal attacks on German cities in retaliation for aerial raids against England.

The Fear of Aerial Bombardment

“The strategic air offensive is a means of direct attack on the enemy state with the object of depriving it of the means or the will to continue the war.” This definition of strategic bombing, supplied by Sir Charles Webster and Noble Frankland writing about the Second World War, is no doubt applicable to the Great War as well. Deprivation of the means, i.e. war material and supplies, and the will, i.e. specifically targeting civilians in an attempt to damage public morale was legitimized during the First World War. Although the Napoleonic Wars are often cited as the first example of “total war,” the Great War from 1914-1918 was truly the first war where civilians located hundreds of miles from the warring armies came under attack.

Strategic bombing of cities and civilians by aerial means was not a new concept in 1914. Beginning with the Montgolfier experiments with manned flight in 1783, the possibility of using balloons and eventually heavier than air machines for military use was envisioned. Initially used as observation posts and artillery spotters, the idea of using airships and aircraft offensively soon found enthusiasts. It was not until the advent of the internal combustion engine, however, that the potential of aerial bombardment from a controlled platform became realistic. In an 1893 letter to the chief of staff of the German Army, Count Ferdinand von Zeppelin, developer of the rigid airship that would bear his name and theorist on strategic bombing, wrote that his machine could perform not only observation and transport roles, but also “bombard enemy fortifications and troop formations with projectiles.”

In popular literature and science fiction, the inevitability of airships cruising over cities and dominating future warfare was a popular topic by the late nineteenth century. Jules Verne, no stranger to prescient fiction, wrote in his 1887 story *Clipper in the Clouds* about an aerial battle between two airships loosely resembling the German dirigibles of the First World War. However it was H.G. Wells who envisioned the strategic bombing of population centers in the future. In his 1908 novel *The War in the Air*, Wells described a scene in which a fleet of German airships bombed New York City, eerily predicting the fear and terror felt by the public in London and Paris during the Great War. As the historian Lee Kennett argued, so profound and persuasive at capturing public attention was this type of futuristic literature around the turn of the century, that by the time reliable airships and aircraft finally appeared en masse, “extravagant and impossible things would sometimes be expected of them.” During the war, dirigibles and aircraft were seen as an extension of scientific advancement akin to other innovations such as submarines, machine guns, tanks, and poison gas.

So profound were the concerns over the possibility of airborne bombardment, even before the technology to accomplish such a task was near ready, politicians throughout Europe and the United States attempted to regulate aerial warfare. The 1899 Hague Convention, proposed by Russian Tsar Nicholas II in an attempt to regulate armaments and warfare, passed a resolution “agree[ing] to prohibit, for a term of five years, the launching of projectiles and explosives from balloons, or by other new methods of similar nature.”

By the time of the second Hague Convention in 1907, flight technology had changed the possibility and increased the danger of destruction from the air. In 1903 Wilbur and Orville Wright had proved that controlled, powered, heavier-than-air flight was possible with their flight at Kitty Hawk, North Carolina. By the second convention many nations had expressed interest in aviation’s military capabilities, though curiously the United States was at first lukewarm to the idea. Foreshadowing aerial bombardment as a means of “total war,” the 1907 Hague Convention attempted to outlaw strategic bombing of undefended cities and populations.

Because many at the 1907 conference believed it would be easier to restrict bombing to legitimate military targets rather than outlaw it altogether, the Hague agreements concerning land warfare were extended to cover aerial bombardment as well. Since bombing of undefended cities by traditional artillery was already prohibited under article 25 of the Convention on Land

Warfare, conference participants simply changed the article to state “the attack or bombardment, *by whatever means*, of towns, villages, dwellings, or buildings which are undefended is prohibited.” The insertion of “by whatever means” into the article was an attempt to extend the prohibition to include aerial bombardment.

Despite its intentions, the language of the article was too vague to be effective and left many questions unanswered. For instance, what was the definition of an undefended town? Did that mean military members were not within town limits or just the absence of soldiers specifically tasked to guard against invasion or bombardment? How could an attacker tell the difference? Should a city without traditional defenses but housing an arsenal, a military storehouse, or a weapons manufacturing plant really be considered “undefended?” These issues and many others rendered the treaty useless and were routinely cited as justification for strategic bombing of cities when the First World War began.

Although tactical aerial bombing in support of combat operations was employed as far back as 1911 when Italian airplanes dropped the first bombs in combat on Turkish forces in Libya, 1914 saw the first strategic use of bomber aircraft to “strike at the very foundation of the enemy’s war effort—the production of war material, the economy as a whole, [and] the morale of a civilian population.” A few days after the beginning of the First World War, German pilots dropped a few small bombs on Paris in August 1914. In October of that year the British achieved the first substantial strategic success when one airplane destroyed a zeppelin airship in its shed at Dusseldorf, Germany. By December 1914 the Germans were dropping bombs directly on England.

Perception versus Reality

A flaw in the definition of strategic bombing was the assumption that aircraft and pilots were capable of accurately hitting strategic targets. In reality military planners realized very early in the war that current aeronautical and armament technology, anti-aircraft defenses, and weather so affected aircraft and pilot performance that actually hitting the intended target was nearly impossible and had more to do with luck than skill. Indeed it was not until the integration of the Norden bombsight in the Second World War that bomber crews had a reasonable (if exaggerated) expectation of targeting success.

With so little chance of success in destruction of German war material, an outcome which quickly became apparent during the war, why did the British government expend valuable resources and manpower on strategic bombing? Why were aircraft diverted away from the more critical missions of ground support, artillery spotting, and observation along the western front for speculative and widely unsuccessful bombing missions in enemy territory? The answer lies more with British public influence, political pressure, and even collective psychology than with military necessity.

Sigmund Freud, for one, believed in a type of collective psychology that could overcome individual rational thought. By the beginning of the war Freud, a resident of Vienna in the Austro-Hungarian Empire, had already established an international reputation as the founder of psychoanalysis. Freud believed that although humans obviously had the capacity for rational thought, the subconscious mind was constantly bombarded with passions and desires in conflict with civilized behavior. These subconscious desires and passions constantly pressured the more rational instincts to suppress them, and eventually spread from individuals to entire communities. During the war Freud argued that the “the distinction between civil and military sections of the population” were now ignored, and populations were disillusioned because the “brutality shown by individuals [and collectively by states]...one would not have thought capable of such behavior.” Freud wrote in a 1915 article that the war allowed the public and the state to disregard all restrictions, ignore international treaties, and advocate military action that would be abhorrent in peacetime.

Agreeing with Freud was Gustave Le Bon, another leading intellectual of the day who wrote about collective psychology and the Great War. Le Bon, a Frenchman well known for his study of crowd psychology, argued that the collective mind of the crowd can subordinate an individual's will. In particular, he wrote in 1916, the war had a distinct psychological effect on both individual and collective behavior. War, he argued, can create a collective, national will that is more powerful than an individual's wants, needs, and desires. He claimed that perception had a greater influence on collective psychology than fact. In writing about the development of public opinion and collective psychology during the war he wrote that "whether the struggle is to stop or be carried on will be decided in great part by the development of public opinion in the different countries involved, for what things really are is a much less important matter than what one thinks about them..."

The collective psychology that both Freud and Le Bon addressed is demonstrably present in the British public throughout the war. It was created by the continual threat of German airship and aircraft bombardment. Londoners in particular were under constant stress and fear of being targeted for destruction, first by German dirigibles and eventually by aircraft appearing in the sky with little or no warning, day or night. The actual chances of being hit by a German bomb were small. As mathematically remote as the chances of dying in an air raid were, however, the effect on British morale and the demands for retribution were significant.

From the beginning of the war there were plans by the German high command to conduct bombing raids on mainland England. As early as 1914 German Rear Admiral Paul Behncke advocated for the bombing of civilians when he advised Admiral von Pohl, the commander-in-chief of the Imperial Navy, to use navy dirigibles to attack England in order to "cause panic and confusion among its citizens." Major Wilhelm Siegert, commander of a German bomber unit, believed the strategic bombing of London would provoke a crisis in the British government and quickly draw the war to a close. In addition, once the German Army invaded Belgium and France, geography became their ally. The German military quickly established forward operating airfields enabling their dirigible airships and fixed-winged aircraft to easily reach London on bombing runs. Conversely British aircraft flying from domestic English airfields had a difficult time reaching deep into German soil. Because of this lack of range, no Allied aircraft ever successfully bombed the German capital of Berlin during the war, although one intrepid French pilot did succeed in dropping leaflets.

Aerial Bombardment Begins

The first zeppelin bombings took place in August 1914 with separate attacks on Antwerp and Liège, Belgium. The German military wanted to immediately begin a strategic bombing campaign on London. The Kaiser initially refused to authorize raids on the city, possibly concerned with alienating neutral countries or dropping munitions on his royal cousins. For a short time, restraint was attempted by both sides even if the primitive targeting technology made precision bombing impossible. Eventually though attacks on civilians, perpetrated by the Germans, British, French, Italians, Austro-Hungarians, and Americans would occur without restriction and intentionally target the "innocent" public.

Zeppelins were used throughout 1914 to attack parts of Belgium and France. The Allies engaged in bombings as well with a series of raids into Germany. The British Royal Naval Air Service flew out of Antwerp on September 22 and October 8 and successfully destroyed a grounded German zeppelin in its maintenance shed. On December 4, French aircraft attacked Freiburg, Germany attempting to destroy the railroad station but instead killed civilians due to faulty targeting. The bombing of "innocents" by the French infuriated many Germans. General Ernst Wilhelm von Hoeppner, the commanding general of the German Air Service during the war

actually blamed France for being the “first power to introduce the horrors of the air war to a peaceable community.”

In January 1915, in response to another French raid on Freiburg, Kaiser Wilhelm authorized attacks on portions of England, excluding London. By February he acquiesced and allowed raids on London with the exception of palaces and residential areas. By July, after more aerial attacks on German cities, the Kaiser relented to his military advisers and authorized the bombing of any legitimate military objective throughout the whole of London. Knowing the inaccuracy of airship bombing, this decision by Wilhelm was a de facto sanction to target the civilian population.

The first attack on England occurred on January 19, 1915 and the first raid on London came on May 31. These zeppelin attacks were very different than what had been experienced in previous wars. Civilians, far away from the front lines, now could be casualties of war with little or no warning. One English witness describing an airship attack wrote in her diary:

I wondered what was going on, and whether destruction and suffering & loss of life were really & truly taking place so near at hand. Things in the paper always seem so far away, it's only when one sees and hears *for oneself*, that the real horrors of war becomes apparent...the air seemed alive with horrid weird uncanny sounds, and there is something terrifying in the thought that two miles up above one in space there is a merciless enemy dropping incendiary bombs promiscuously on whatever comes handy!!

The anxiety and fear which the witness described is not surprising. Much of the literature produced before the war anticipated the devastating impact aerial warfare had on home-front morale. Zeppelin attacks continued for the first two years of the war until improved defenses appeared such as incendiary and explosive bullets used by British aircraft to set the hydrogen-filled balloons on fire. In addition, advanced anti-aircraft artillery using explosive shells and a more robust communications network to warn defenders of airship attacks took an increasingly heavy toll on German aerial operations.

Although strategic bombing by zeppelin caused relatively minimal material destruction and loss of life, their appearance caused the British public considerable anxiety. Appalled at being targeted, civilians and their political leaders used vengeful language and demanded retaliatory strikes on German cities. For the first time since the days of the Spanish Armada, the island of Great Britain was vulnerable to attack. Leaders reacted with a variety of schemes to combat the German threat. Some suggestions were reasonable, such as First Lord of the Admiralty Winston Churchill's idea to conduct preemptive strikes on zeppelin sheds inside Germany; while other ideas were more reactionary, such as First Sea Lord Baron Fisher's proposal to execute a captured German civilian for each British citizen killed by German bombing.

As the German attacks continued throughout 1915 and into early 1916, British public outrage grew. At a minimum, German raids slowed worker productivity and caused increased absenteeism. In some instances reaction turned violent as people released their frustrations by attacking shops and homes allegedly owned by German nationals. However this response by the British public was not only a reaction against German aerial bombardment. Britons were expressing a growing sense of anger and frustration at the apparent lack of British defenses to German bombing. So great was public outrage and so influential was this pressure that many British leaders, Capt. B.H. Liddell Hart among them, were concerned that the public now had an increasingly influential role in determining military strategy. As pressure mounted, authorities in the British government were forced to assuage popular calls for revenge.

Pressured to conduct their own strategic bombing campaign the Royal Naval Air Service took the lead, attempting to conduct a “vigorous offensive” inside Germany. The purpose of this offensive, according to the British Admiralty's director of Air Services, was to “restore the initiative to the British, restrict zeppelin operations, divert German forces from the western front, and batter German morale.” This diversion of critical manpower and resources for a speculative bombing campaign, however, was not universally popular with military leadership. Seeing the

reallocation of aircraft away from ground support on the western front, Hugh Trenchard, commander of the Royal Flying Corps (RFC), “father” of the Royal Air Force (RAF), and later a strong advocate of strategic air power, labeled the strategic bombing campaign a “great waste,” stating that observation was aviation’s primary mission. The British ground commander in France went so far as to argue that strategic bombing was a “very serious interference with British Land Forces, and may compromise the success of my operations.”

The Bomber Gets Through

Despite the resistance of military leadership, 1917 saw an increasing public outcry for retaliatory raids inside Germany. This was due to the German introduction of the first fixed-wing aircraft built specifically for strategic bombing, the twin-engine Gotha bomber. Although these aircraft had a smaller bomb-carrying capacity than dirigibles, multiple Gothas conducted bombardment missions and caused a substantial amount of damage while adding to British public anxiety and anger. May 25, 1917 saw the first Gotha bombers sent to attack Great Britain killing 95 people and injuring 195 more. London came under attack on June 13 when fourteen Gotha bombers killed 162 with an additional 432 injured. On July 7, London was hit again this time with 65 dead and 245 wounded. The Gotha bombers badly damaged British morale. Where the British defenses against dirigibles were eventually adequate, there appeared to be no defense at all against German fixed-wing bombers attacking in broad daylight. Once again the British military was unable to defend the homeland and these attacks initiated an intense public campaign for retaliatory attacks on Germany.

The press took the lead in calling for reprisals. Articles, editorials, and letters to the editor expressed both outrage at the acts committed by the Germans and pride at the coolness with which Britons conducted themselves during the raids. A June 15th, 1917 edition of *The Daily Mail* included pictures of child victims of the German bombing and a “Reprisal Map” outlining German towns for targeting in retaliation. Public meetings passed resolutions demanding that the British government conduct retaliatory raids on German cities. Letters in many newspapers demanded aerial bombing of German towns and lamented the slow pace of reprisal attacks in response to German atrocities. Opinions hardened, with one gathering of citizens petitioning King George V to “instruct your Ministers at once to make rigorous and continual air attacks on German towns and cities as reprisals for the murder of civilians—men, women, [and] even children at their school desks...” Public pressure worked and the government was forced to implement significant changes, including increasing the strategic bombing campaign on German cities.

It was during the summer of 1917 that the British military reluctantly embraced strategic bombing. From a tactical standpoint, strategic bombing remained an inappropriate allocation of resources, but pressure was at an apex and neither political nor military leaders could ignore the public outcry. Forty new squadrons were allocated for reprisal attacks on German towns. In addition, against the advice of RFC commander Hugh Trenchard, pursuit squadrons with more advanced aircraft such as the famed Sopwith Camel, were sent back from the western front to defend Great Britain against German bombers.

The ethical dilemma of attacking German towns did not escape the notice of military leadership. Trenchard, who after the war established strategic bombing as the RAF’s fundamental mission, initially was resistant to bombing civilians. In testimony before a special session of the British cabinet in response to the Gotha raids, Trenchard expressed concern about the consequences of initiating a wide-spread campaign on German cities when he stated:

Reprisals on open towns, although we may be forced to adopt them, are repugnant to British ideas. It would be worse than useless to do so, however, unless we are determined that, once adopted, they will be carried through to the end. The enemy would almost certainly reply in kind—and unless we are resolved and prepared to go one better than the Germans, whatever they

may do and whether their reply is in the air or against prisoners or otherwise, it will be infinitely wiser not to attempt reprisals at all.

Trenchard speculated that the real reason government leadership was clamoring for strikes on German towns was to “give the newspapers copy to say how wonderful we are, though it really does not affect the enemy so much as it affects our own people.” As concerned as Trenchard was, the British public demanded increased raids on German cities and it was up to British decision-makers to find the moral justification for an enhanced bombing campaign on Germany.

Aerial bombing was not new to British pilots. Even in the early years of the war, military and industrial facilities were targeted. Due to the primitive state of aerial targeting, German civilians were killed and wounded but the British believed their intention to avoid civilian casualties made their bombing campaign morally justified. However, because of the increased public pressure throughout the country, British leadership “exploited ambiguities in the ethical and legal prohibitions on the bombardment of civilian towns and villages as legitimate acts of reprisal” and authorized retaliatory attacks on cities and towns to specifically damage German morale. The “legitimate act of reprisal” justification was used by the Germans as well and thus each side could claim to be adhering to the letter of pre-war treaties and prohibitions against aerial bombardment of open towns, while at the same time intentionally targeting civilians.

Strategic bombing by Germany, Great Britain, and France continued throughout the war. Eventually the Germans began conducting night bombings using incendiary munitions and introduced an even larger bomber, the four-engine *Riesenflugzeug* Giant, comparable in wingspan to a World War II era Boeing B-29 Superfortress. In time, British advances in pursuit aircraft, anti-aircraft artillery, communications, and tactics forced the German military to end their raids on London and focus on Paris. For all the emphasis Germany placed on bringing the war directly to England, material results were negligible compared to the tragedy on the western front. By the end of the war, the German air campaign against Great Britain, primarily conducted by zeppelin airships and Gotha and Giant bombers, dropped approximately 300 tons of bombs, killed 1,400 civilians, wounded 3,400 to 4,800 others, and caused a little over \$15 million in damage. Examining the ineffectiveness of aerial bombardment in the First World War, historian Lee Kennett critiqued that the number of British killed and wounded by strategic bombing during the entire war “are the kinds of totals one would find reported for a single ‘quiet’ day on the western front.” For their part, the British bombing campaign killed 750 Germans with an additional 1,300 injured, and caused approximately \$6 million in damage.

Clearly destruction of war-making material was of secondary importance to German and British decision-makers. The real impact of the first aerial bombing campaigns is found in the amount of resources each side committed to offensive raids and homeland defense as well as the effect of bombardment on civilian morale. Both the British and the Germans had to divert valuable pursuit aircraft away from the western front to combat bombing raids on their territory. In addition, manpower was redirected to man anti-aircraft artillery sites and communication equipment away from the trenches. In the first “total war” of the twentieth century, this reallocation of resources had a significant if not deciding effect on the outcome of the war.

Although not robust enough to truly damage the British defense industry, German strategic bombing was a partial success because of the anxiety it caused and the negative effect on British morale. Popular demand to increase English defenses and retaliate in kind against German cities forced politicians and military leaders to change military tactics and divert valuable aircraft and personnel away from the western front, where victory and defeat was truly determined. Against military advice and with little hope of seriously damaging German war industry, the British strategic air campaign was conducted primarily in response to public demand for reprisal attacks against the German people. It would take another world war, twenty-one years after the end of “war to end all wars”, for strategic bombing to achieve its potential. In that war targeting towns, cities, and villages caused even less concern. By 1942, using strategic bombing to damage civilian

morale and pressure enemy civilians to capitulate was a legitimate and often enthusiastic goal of military planners. Like many other unfortunate “firsts,” this morally ambiguous tactic birthed during the Great War came of age on the backs of German V-2 rockets in 1944, and reached its terrifying zenith over the skies of Hiroshima and Nagasaki. □

Notes

1. Letter to the Editor, *The Times*, June 14, 1917, page number unlisted.
2. Lee Kennett, *A History of Strategic Bombing: From the First Hot-Air Balloons to Hiroshima and Nagasaki* (New York: Charles Scribner's Sons, 1982), p. ix.
3. David A. Bell, *The First Total War: Napoleon's Europe and the Birth of Warfare as We Know It* (New York: Houghton Mifflin Harcourt, 2007).
4. Kennett, *A History of Strategic Bombing*, p. 9; Letter of September 14, 1893, reproduced in the work of the “Kriegswissenschaftliche Abteilung der Luftwaffe,” *Die Militärluftfahrt bis zum Beginn des Weltkrieges 1914* (Berlin: E.S. Mittler, 1941), Vol. 2, p. 13.
5. Jules Verne, *The Clipper of the Clouds* (London: Sampson, Low, Marston, Searle, & Rivington, 1887).
6. H.G. Wells, *The War in the Air* (New York: Macmillan, 1908).
7. Kennett, *A History of Strategic Bombing*, p. 8.
8. James Brown Scott, ed. *The Hague Conventions of 1899 and 1907* (London: Oxford University Press, 1915), p. xviii; “Prohibiting Launching of Projectiles and Explosives from Balloons,” July 29, 1899, *The Avalon Project, Yale Law School*, http://avalon.law.yale.edu/19th_century/hague994.asp (accessed October 10, 2012).
9. “Laws and Customs of War on Land,” October 18, 1907, *The Avalon Project, Yale Law School*, http://avalon.law.yale.edu/20th_century/hague04.asp#art25 (accessed October 10, 2012); Scott, *The Hague Conventions of 1899 and 1907*, p. 117.
10. Kenneth P. Werrell, *Death from the Heavens: A History of Strategic Bombing* (Annapolis: Naval Institute Press, 2009), pp. 1-2.
11. *Ibid*; Alan J. Levine, *The Strategic Bombing of Germany, 1940-1945* (Westport: Praeger, 1992), p. 1.
12. The Norden bombsight was a device for accurately dropping bombs from aircraft and was one of the United States' most closely guarded secrets of World War II. The device used a mechanical analog computer comprised of motors, gyros, mirrors, levels, gears, and a small telescope. The bombardier input the necessary information (airspeed, altitude, etc.) and the bombsight would calculate the trajectory of the bomb being dropped. Near the target the aircraft would fly on autopilot to the precise position calculated by the bombsight and release the ordnance. Using this device, it was possible for bombardiers to drop their bombs within a 100-foot circle from an altitude of over 20,000 feet. John T. Correll, “Daylight Precision Bombing,” *Air Force Magazine* (October 2008), pp. 60-64; Hill Air Force Base, “World War II Norden Bombsight,” United States Air Force, <http://www.hill.af.mil/library/factsheets/factsheet.asp?id=5664> (accessed October 1, 2012); National Museum of the U.S. Air Force, “Norden M-9 Bombsight,” United States Air Force, <http://www.nationalmuseum.af.mil/factsheets/factsheet.asp?id=8056> (accessed October 1, 2012).
13. Sigmund Freud, “Thoughts for the Times on War and Death,” in *The Standard Edition of the Complete Psychological Works of Sigmund Freud*, ed. and trans. James Strachey (London: Hogarth Press, 1957), 14:275-80
14. Gutave Le Bon, *The Psychology of the Great War*, trans. E. Andrews (New York: Macmillan, 1916), pp. 311-12.
15. Herman Knell, *To Destroy a City: Strategic Bombing and Its Human Consequences in World War II* (Cambridge: Da Capo Press, 2003), p. 66.
16. Lee Kennett, *The First Air War* (New York: The Free Press, 1991), p. 57.
17. Werrell, *Death from the Heavens*, 4; Andrew Barros, “Strategic Bombing and Restraint in ‘Total War’, 1915-1918,” *The Historical Journal* 52, no. 2 (2009), pp. 413-431.
18. Kennett, *A History of Strategic Bombing*, 21-22; Ernst Wilhelm von Hoepfner, *Germany's War in the Air: The Development and Operations of German Military Aviation in the World War* (Nashville: Battery Press, 1994), p. 21.
19. Kennett, *A History of Strategic Bombing*, pp. 22-23.
20. Susan R. Grayzel, *The First World War: A Brief History with Documents* (Boston: Bedford/St. Martin's, 2013), pp. 103-106.
21. John Horne, ed., *A Companion to World War I* (Oxford: Wiley-Blackwell, 2012), p. 157.
22. During the war, German zeppelins dropped approximately 6,000 bombs (weighing approximately 500,000 pounds) on Britain with 556 killed and 1,357 wounded.
23. Tami Davis Biddle, *Rhetoric and Reality in Air Warfare: The Evolution of British and American Ideas About Strategic Bombing, 1914-1945* (Princeton: Princeton University Press, 2002), p. 21.
24. Biddle, *Rhetoric and Reality in Air Warfare*, p. 24.
25. errell, *Death from the Heavens*, pp. 12-14.
26. Levine, *The Strategic Bombing of Germany*, p. 3; Biddle, *Rhetoric and Reality in Air Warfare*, pp. 29-30.
27. “Air Raid on London,” *The Times*, July 9, 1917, page number unlisted.
28. *The Daily Mail*, June 15, 1917, page number unlisted.

29. *The Times*, June 18, 1917, page number unlisted.
30. *The Daily Mail*, June 15, 1917, page number unlisted.
31. Biddle, *Rhetoric and Reality in Air Warfare*, p. 30-32.
32. Aaron Norman, *The Great Air War: The Men, The Planes, The Saga of Military Aviation 1914-1918* (New York: The Macmillan Company, 1968), p. 421; Biddle, *Rhetoric and Reality in Air Warfare*, p. 32.
33. Neville Parton, "The Development of Early RAF Doctrine," *The Journal of Military History* 72, no. 4 (October 2008): p. 1158.
34. Norman, *The Great Air War*, p. 420.
35. Biddle, *Rhetoric and Reality in Air Warfare*, p. 45.
36. Joel Hayward, "Air Power, Ethics, and Civilian Immunity during the First World War and its Aftermath," *Global War Studies* 7, no. 2 (2010), p. 102.
37. George W. Haddow and Peter M. Grosz, *The German Giants: The Story of the R-Planes 1914-1919*, (New York, Putnam & Company Limited, 1962).
38. The 1917-1918 Gotha and Giant raids killed 836 people and injured 1,982 in Great Britain.
39. Kennett, *A History of Strategic Bombing*, p. 25; Werrell, *Death from the Heavens*, p. 19.

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