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AGAINST ALL ODDS  
BRITISH GOVERNMENT POLICIES AND CIVIL DEFENSE  
DURING THE BLITZ

A Thesis  
Presented to the  
Graduate Faculty of the History Department  
and the  
Faculty of the Graduate College  
University of Nebraska


In Partial Fulfillment  
of the Requirements for the Degree  
Master of Arts  
University of Nebraska at Kearney

By  
Shawna Kozisek  
May 2021

THESIS ACCEPTANCE

Acceptance for the faculty of the Graduate College, University of Nebraska, in partial fulfillment of the requirements for the degree of Master of Arts in History, University of Nebraska at Kearney.

Supervisory Committee

Name	Department
Torsler Howard	History
Vernon L. Volpe	HISTORY
	History

  
Supervisory Committee Chair

March 8, 2021  
Date

## **Thesis Abstract**

During World War I, technological advances in air power expanded the field of battle beyond the front lines and British civilians previously insulated from the realities of war experienced a new threat from the air. This experience highlighted the impact of modern warfare on citizens and the need for greater home defense measures. Bombing attacks in Europe, Asia, and Africa during the 1930s further demonstrated this type of conflict, making British civil defense more critical. After nine months between September 7, 1940 and May 10, 1941, over 40,000 civilians perished from the bombs dropped by the German air force on Britain's largest industrial cities. Much of the scholarship written post World War II attaches government failures to these deaths.

Using government documents, newspapers, photos, opinion polls, books, and articles, this thesis will examine civilian aerial warfare philosophies established after World War I and the resulting casualty projections prior to the Blitz. It will also describe several programs implemented by the British government as well as its communication tactics to increase public awareness and preparation in the event of an attack. Furthermore, it will evaluate how civil defense strategies adapted in response to the bombings. By comparing the number of actual deaths to pre-Blitz projections and statistics from other bombing attacks, this thesis will demonstrate that the government's civil defense efforts successfully saved countless lives.

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## Chapter 1 – Introduction

For most people, World War II is an event of the past, included in our history books, and belonging to an earlier generation of people who have come and gone. This horrific war, during which more than 70 million people died including at least 50 million civilians, left a mark on many parts of the world including the destruction of communities, the death or dislocation of populations, and massive political and social upheaval. For Americans, the fighting administratively at least, began with the declaration of war following the bombing of Pearl Harbor in 1941. For the British, the war commenced after the German invasion of Poland in September 1939. For Western European states, still weary from the Great War, the conflict in which they found themselves embroiled in the autumn of 1939 was far to exceed the devastation of the First World War.

Walking down the streets of London today, one is struck by the mixture of both old and new architecture, yet for most, it is not easily recognized that over sixty percent of Greater London was damaged or destroyed by German bombs. A small shrapnel hole in an old building, an air raid shelter made into a garden shed, a medical stretcher used as fencing, or a memorial to victims may be the only visible signs of what today seems like a long ago era of constant bombardment and suffering. Often what is forgotten, and unknown, is what the city looked like before the war.

After unsuccessfully winning air supremacy during the Battle of Britain and the Royal Air Force Bomber Command's nearly useless nighttime raid on Berlin August 25-26, 1940, the Germans changed their strategy and began to focus on civilian targets.

Between September 7, 1940 and May 10, 1941, the Luftwaffe bombed Britain's largest cities with a goal to destroy its factories, demoralize its population, and force a surrender. From the onset of the attacks, images of burning buildings, brave citizens who pulled together, and a strong government response permeated the news. During a nine-month period known as Blitz from the word Blitzkrieg or lightning war, London experienced 71 attacks and over one million homes were destroyed or damaged. Other industrial cities including Portsmouth, Liverpool, South Hampton, Birmingham, Belfast, Hull, and Coventry were also bombed. After the final all clear was sounded on the last day of the Blitz, with approximately 40,000 civilian deaths and another 51,000 seriously injured, no one could know the worst was over.



Figure 1-1. View of Wood Street at the Cheapside end showing bomb damage 1940. Collage, London Picture Archive, Arthur Cross and Fred Tibbs Collection, <https://collage.cityoflondon.gov.uk/>.

Scholars have conducted a significant amount of research on the Blitz, its causes, and actions by those involved. However, since the first documented account, the story

has evolved and been reinterpreted by historians. As early as November 1940, “instant history” was being written about the Blitz based upon eyewitness accounts of the events as they occurred. After spending two weeks in London at the onset of the bombing, American Socialist and anti-Nazi editor and publisher Ralph Ingersoll published a series of articles for his newly launched New York magazine PM. This compilation, the *Report on England* sensationalized the events that occurred at the beginning of the Blitz and the social revolution he saw as people came together during the bombing. “It was the university of effort that I met everywhere that made the government seem to me somehow, and curiously, unimportant. It is as if it were not guiding events, but being pushed by them... I felt a sense of men being pushed from below, of trying to keep up with the demands of the people.”<sup>1</sup> When writing these words Ingersoll conveyed his personal view on the social change he experienced.

In 1942, the Ministry of Home Security published *Front Line 1940-41: The Official Story of the Civil Defence of Britain*. This book, mass marketed to British consumers at 2 shillings per copy, sought to recognize the losses endured during the Blitz but also maintain morale during a period of uncertainty and fear. Written in cooperation with multiple government agencies, this work describes each bombing attack, the casualties sustained, civil defense efforts, and civilian experiences. The use of photos adds depth and personalizes the experience for the reader many of which had survived

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<sup>1</sup> Ralph, Ingersoll, *Report on England* (New York: Simon and Schuster, 1940), 189, accessed January 20, 2021, <https://babel.hathitrust.org/cgi/pt?id=mdp.39015027338212;view=1up;seq=9>.

nine months of terror. It also augments the Ministry of Home Security's goal of depicting British resilience and spirit.<sup>2</sup>

Since the war, new studies and increasingly unclassified documents have resulted in instant historical interpretations being replaced by more complex theories. A number of scholars have highlighted the failure of the Luftwaffe bombing campaign to bring a quick end to the conflict, described the social impacts of the Blitz, or provided first-hand accounts of those who experienced it. Furthermore, many of their works are either apologetic or openly critical of the British government's preparation and actions during the Blitz.

In 1949, former British Prime Minister Winston Churchill published his six-volume series *The Second World War*. In Volume II, *Their Finest Hour*, he devotes several chapters to the Blitz focusing on the bombing strategy of the Germans and the counter measures deployed by the British. Churchill describes the types of shelters utilized, use of radar and other techniques to confuse German bombers, and the resilience of civilians as they withstood almost a year of attacks. Churchill's work utilizes his written correspondence while Prime Minister to highlight government efforts made during the Blitz. These communications depict an anxious leader determined to save Great Britain and provide the reader with a unique perspective of the war. *Their Finest Hour* provides an interesting but biased history of the Blitz.<sup>3</sup>

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<sup>2</sup> Ministry of Home Security, *Front Line 1940-41: The Official Story of The Civil Defense of Britain*. (London: HMSO, 1942).

<sup>3</sup> Winston Churchill, *The Second World War. Volume II, Their Finest Hour* (Boston: Houghton Mifflin, 1949).

During the 1950s, Her Majesty's Stationary Office (HMSO) published the official history of the British experience in World War II, *The History of the Second World War*.

This series, which includes some primary source evidence provided by the British government, like Churchill's prior work offers a sympathetic and patriotic viewpoint.

These historians writing during the early Cold War era approached their history as survivors of the attacks with pride in Great Britain and its success during the war.<sup>4</sup>

*History of the Second World War: Problems of Social Policy* authored by sociologist

Richard Titmuss contends that during 1940, Britain overcame political infighting and class conflict to battle a common enemy. As evidence he outlines British government efforts around civilian evacuation, homelessness, and healthcare during World War II and how these efforts translated into more inclusive social policies by the end of the war.<sup>5</sup>

Terence O'Brien's *History of the Second World War: Civil Defence* details the planning and actions taken by the British government during the war to counter air raid attacks on British cities. His analysis, which all succeeding scholars on the Blitz have used as a foundation for their own research includes several key civil defense tactics including civilian evacuations, shelters, the Air Raid Precautions organization, and use of fire brigades. O'Brien acknowledges the government was not fully prepared for a civilian attack and attributes it to the lack of financial resources post-World War I and

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<sup>4</sup> The *History of the Second World War* is the official history of Britain's contribution to the Second World War and was published by Her Majesty's Stationery Office (HMSO). It is comprised of multiple volumes within five categories written from 1950-1990. For a complete list of books included see <http://generalstab.org/links/official-histories-of-ww2/the-british-official-history-of-the-second-world-war/>.

<sup>5</sup> Richard Titmuss, *History of The Second World War Problems of Social Policy* (London: HMSO, 1950), accessed January 30, 2021, <http://www.ibiblio.org/hyperwar/UN/UK/UK-Civil-Social/UK-Civil-Social-25.html>.



continuing economic hardships of the 1930s. He also asserts the British people were emotionally exhausted and unwilling to prepare for war, yet ultimately civil defense actions were successful. O'Brien utilizes metrics from British government records including casualty projections and budget numbers as supporting evidence.<sup>6</sup>

Basil Collier's military history *The Defence of the United Kingdom: History of the Second World War* has several chapters devoted to the Blitz and the defensive tactics used by the military in response to the bombing. He asserts air defense was limited during the Blitz of 1940-1941 but did improve over time. Collier states, "The prediction of some publicists that subjection of air attack would soon lead ordinary men and women to urge their governments to sue for peace at any price was completely falsified. Much was due, no doubt, to confidence in the growing power of the air defences to hold the threat in check."<sup>7</sup> Collier concludes the efforts by the government, home guard, and Bomber Command reduced the damage inflicted by the Germans and helped bolster people's spirits. His work like that of Titmuss and O'Brien serves as a foundation for later scholars and is a significant study of the Blitz.

In 1957, historian and novelist Constantine Fitzgibbon added a personal dimension to the historiography written about the Blitz in his work *The Winter of the Bombs: The Story of the Blitz of London*. His text introduces the Blitz through a brief

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<sup>6</sup> Terence O'Brien, *History of the Second World War: Civil Defence* (London: HMSO, 1955), accessed January 30, 2021, <https://ia800603.us.archive.org/21/items/HistoryOfTheSecondWorldWarCivilSeriesCivilDefence/obrien-civil-defence.pdf>.

<sup>7</sup> Basil Collier, *Defence of the United Kingdom: History of the Second World War: United Kingdom Military Series: Official Campaign History*, 1957. (United Kingdom: Naval & Military Press, 2004), 8390, Kindle.

overview of the civilian aerial bombings during World War I and the potential impact of a German attack on civilian morale. Using eyewitness accounts FitzGibbon's narrative provides insights into the preparations for the Blitz as well as how people lived daily. He concludes the Germans failed in their efforts to win the war through civilian terror, yet the resulting loss of lives and homes was horrific. As he states, "When we look back across this half a generation, at the dead of that terrible winter, it is perhaps the women and the children whom we still mourn most vividly."<sup>8</sup> However, FitzGibbon contends people adapted to the bombings and showed a tremendous amount of resilience.

In the years following these publications, historians expanded upon or reintroduced the key themes offered by early scholars. Many revisionists also argued against the idea of social resilience and highlighted government failures during the Blitz. In 1976, Tom Harrisson, founder of Mass-Observation applied his principle of social observation to public wartime experiences. In *Living Through the Blitz*, he counters Richard Titmuss's earlier assertion of a unified public and argues the citizens of Great Britain were not united even though it appeared that way during the war and has since been perpetuated by historians. Harrisson asserts "There has, in particular, been a massive, largely unconscious cover-up of the more disagreeable facts of 1940-1941...It amounts to a form of intellectual pollution: but pollution by perfume."<sup>9</sup> Harrisson's

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<sup>8</sup> Constantine FitzGibbon, *The Winter of the Bombs: The Story of the Blitz of London*. (New York: W.W. Norton & Company, Inc., 1957), 267-268, accessed January 30, 2021, <https://ia902704.us.archive.org/13/items/winterofthebombs010956mbp/winterofthebombs010956mbp.pdf>.

<sup>9</sup> Tom Harrisson, *Living through the Blitz*. (London: Collins, 1976): 13; other texts that explore the perceived social equality and unity of the people during the Blitz include Angus Calder, *The Myth of the Blitz*

evidence of interviews and eyewitness accounts written by Mass-Observation volunteers during the Blitz provides a compelling argument.

Clive Ponting's 1993 revisionist history *1940: Myth and Reality* re-examines British government policy from the perspective of its capability to withstand a long-term air attack. He concludes that the British Empire was not capable of fighting the Germans and was near collapse both economically and militarily. Ponting argues that it was not British valor that saved the country but its geography and the support of the Americans.<sup>10</sup>

Military historian Mark Connelly in *We Can Take It!* examines the perceptions British people have about World War II based upon the images provided about the war. His 2004 work contends the collective memory is based upon Great Britain as the underdog who came together to fight a common enemy. Connelly asserts this history is vastly different than reality and often ignores the difficult events that occurred including British aerial attacks and the invasions of Italy and Germany. He dedicates a specific chapter to the Blitz and argues local and national government shortcomings and mismanagement were highlighted during the bombing attacks. Connelly notes "Contingency planning had often been unbalanced or mismanaged...Once disaster struck, some authorities revealed little reactive power or initiative."<sup>11</sup> He also concludes despite

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(London: Cape, 1991); Malcom Smith, *Britain and 1940: History, Myth, and Popular Memory* (Hoboken: Taylor and Francis, 2014).

<sup>10</sup> Clive Ponting, *1940: Myth and Reality* (Chicago: Ivan R. Dee, 1993).

<sup>11</sup> Mark Connelly, *We Can Take It!* (Hoboken: Routledge, 2014), 65. eBook Academic Collection (EBSCOhost), EBSCOhost.

this, most people continued with their daily lives and cared for one another during this disaster.

In the 2011 journal article “The Blitz: Sorting the Myth from the Reality.” James Richards provides an alternative perception of social comradery and argues the image of British people pulling together to fight the Nazis is a myth. Focusing on one aspect of civil defense, the air raid shelter, Richard contends that the wealthy and middle classes had access to basements or country homes whereas ordinary people lacked adequate protection. He claims “It was a time of terror, confusion and anger. Government incompetence – almost criminal in its extent – displayed what was almost a contempt for ordinary people.”<sup>12</sup> He argues the inadequacy of the shelters provided by the government led to a “class war” and a resulting change in government policy. Richards uses examples of civil disturbances and the forceful seizures of basements and subway stations as evidence to support his claim.

*In Half the Battle: Civilian Morale in Britain During the Second World War,*

Robert Mackay asserts that revisionist historians have overcorrected traditional ideas

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<sup>12</sup> James Richards, “The Blitz: Sorting the Myth from the Reality,” (BBC. Last modified February 2, 2011), 3, accessed September 11, 2017, [http://www.bbc.co.uk/history/british/britain\\_wwtwo/blitz\\_01.shtml](http://www.bbc.co.uk/history/british/britain_wwtwo/blitz_01.shtml); for additional reading on the shelter experiences see Geoffrey Field, “Nights Underground in Darkest London: The Blitz, 1940-1941,” *International Labor and Working Class History*, No. 62, *Class and Catastrophe: September 11 and Other Working Class Disasters* (Fall, 2002), pp. 11-49, accessed October 2, 2017, <http://www.jstor.org/stable/27672803>; Nick Cooper, “The Underground at War,” [nickcooper.org](http://www.nickcooper.org). Last updated 2010, accessed February 6, 2021, <http://www.nickcooper.org.uk/subterra/lu/tuaw.htm>; Joseph S. Meisel, “Air Raid Shelter Policy and its Critics in Britain before the Second World War,” *Twentieth Century British History*, Volume 5, Issue 3, 1 (January 1994), pages 300–319, <https://doi.org/10.1093/tcbh/5.3.300>; *Military History Monthly*, “Air Raid Shelters: A short history of British air-raid shelters WW1 and WW2,” (October 1, 2010); Royal Air Force Museum, “Air Raid Shelter Protection,” (2016), accessed January 30, 2021, <https://www.rafmuseum.org.uk/research/online-exhibitions/history-of-the-battle-of-britain/air-raid-shelter-protection.aspx>.

about civilian morale and government effectiveness to form a negative perception. This important work analyzes government public morale policies and the patriotism that existed. Mackay argues the instances of panic and defeatism, strikes, absenteeism, and looting impacted a small percentage of the population, not the general public. He concludes there was positive morale and while government actions were not solely responsible for it, the actions taken by those in power were important. “Everyone who lived through this time would readily have understood this idea that there was more to morale than what the Government and its agents said or did...Most felt to some degree assisted in it by the measures the leaders of that community – the Government – took to create an environment helpful to adjustment and commitment, one that afforded protection and reassurance and which eased the burdens of war.”<sup>13</sup>

Peter Stansky in *The First Day of the Blitz* reinforces Mackay’s perspective in his study of the first twelve hours of the German raids on London. Using archival materials and first-hand accounts, he provides a compelling story of the events that occurred on September 7, 1940. Stansky contends the Blitz inspired courage, stoicism, and solidarity and led to the lasting transformation of British society. He also links the bombings of the Blitz to present day terrorism and explains why it will ultimately fail.<sup>14</sup>

In her social history *The Blitz: The British Under Attack* written in 2011, Juliet Gardiner explores the lives of the people who lived and worked in London and concludes there was a spirit of cooperation that existed as people resolved to survive the German

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<sup>13</sup> Robert Mackay, *Half the Battle Civilian Morale in Britain During the Second World War* (Manchester: Manchester University Press, 2003), 263.

<sup>14</sup> Peter Stansky, *The First day of the Blitz* (Carlton North, Vic: Scribe, 2007).

attacks. Her analysis also explores the complexity of the Blitz experience as citizens responded in a multitude of ways both positive and negative. Moreover, she argues the Blitz led to a sense of entitlement by those who “endured” it. By the end of the war people expected more – better jobs, housing, and a better life. Furthermore, Gardiner contends the Blitz highlighted the incompetence of those in power as they failed to understand aerial warfare and the needs of the people. However, she acknowledges that while often late in its response the government did learn and adapt this new type of warfare.<sup>15</sup>

“The Bombing of Britain, 1940-1945 Exhibition at the University of Exeter” facilitated by Richard Overy in 2017 echoes Gardiner. He asserts that while solidarity existed, social response to the Blitz was more multidimensional than typically acknowledged as people from different social classes, political beliefs, and cultural backgrounds had different experiences (i.e., shelter options, evacuation, etc.). The Exhibition provides a high-level overview of the Blitz and notes the bombing attacks forced the state to effectively respond to civilian needs. While there was some panic and social dislocation, these issues were overcome and not long lasting. The Exhibition concludes home front sacrifices ultimately led to greater post-war reliance on the government.<sup>16</sup>

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<sup>15</sup> Juliet Gardiner, *Blitz: The British Under Attack* (London: HarperCollins Publishers, 2011).

<sup>16</sup> “The Bombing of Britain, 1940-1945 Exhibition,” (University of Exeter), accessed September 5, 2018, [http://humanities.exeter.ac.uk/media/universityofexeter/collegeofhumanities/history/researchcentres/centreforthestudyofwarstateandsociety/bombing/THE\\_BOMBING\\_OF\\_BRITAIN.pdf](http://humanities.exeter.ac.uk/media/universityofexeter/collegeofhumanities/history/researchcentres/centreforthestudyofwarstateandsociety/bombing/THE_BOMBING_OF_BRITAIN.pdf).

Susan Grayzel's *At Home and Under Fire: Air Raids and Culture in Britain from the Great War to the Blitz* revisits the impact of the bombing raids during World War I and further defines how this experience shaped government planning and policy after the war. Her 2014 scholarship provides an overview of the air raids during World War I, preparation during the interwar years, and the impacts during World War II. Grayzel addresses the importance of gender and how the air raid led to evolving ideas of citizenship regardless of gender, age, or class. She argues that this type of warfare required the involvement and support of all members of society. This led to increased government control and intervention in the home in the name of national security. Grayzel also details counter efforts made by women's organizations to promote peace and disarm prior to World War II. Grayzel's work provides insight into the changing cultural perceptions of women during this period.<sup>17</sup>

Social historians have also produced several works about the Blitz written from a civilian perspective. These narratives, based upon personal records and interviews, provide an intimate look into the lives of the Blitz survivors. Margaret Gaskin's 2005 *Blitz: The Story of December 29, 1940* presents a compelling account of the night remembered as "The Second Great Fire of London." Her study focusing on a single square mile radius of London, offers a dramatic narrative from the perspective of those who lived through the December 29, 1940, bombing raid. Using first-hand accounts, diaries, letters, and newspaper reports, Gaskin describes the efforts made by ordinary

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<sup>17</sup> Susan R. Grayzel, *At Home and under Fire: Air Raids and Culture in Britain from the Great War to the Blitz* (Cambridge: Cambridge University Press, 2014).

people to find shelter, fight fires, and rescue survivors. Her goal is to highlight the importance of the Blitz and remember those who experienced it.<sup>18</sup>



Figure 1-2. Iconic photo of St. Paul's Cathedral surrounded by fire on December 29, 1940. Herbert Mason photographer, *The Daily Mail*, December 31, 1940, Imperial War Museum, HU36220A, . [10 Incredible Stories Of Bravery During The Blitz | Imperial War Museums \(iwm.org.uk\)](#).

*Amy Bell's London Was Ours: Diaries and Memoirs of the London Blitz*

provides a broader look at London's nine months of aerial attacks from the perspective of those who lived through it. She contends the use of personal information offers insights into the private world of individuals and their daily struggle and uses diaries, letters, and memoirs as source materials. Bell's scholarship serves to fill a void in the historiography of the Blitz by examining how its participants saw themselves, their experiences, and

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<sup>18</sup> Margaret Gaskin, *Blitz: The Story of December 29, 1940* (Orlando: Harcourt, Inc., 2005).



their roles within a national struggle. Her goal is not to find fault in what took place but to instead to identify with those who survived it.<sup>19</sup>

In 2006, Joshua Levine utilized the Imperial War Museum's sound archive to create a narrative history of the bombing attacks during World War II in *Forgotten Voices of the Blitz and the Battle for Britain*. His work draws upon the personal experiences of pilots, soldiers, fire-fighters, air-raid wardens, and civilians to provide a comprehensive view of the war. Levine's analysis echoes that of early scholars when he concludes the common events of the Blitz led to social change and establishment of a welfare state. Furthermore, he counters Ponting stating prior to the United States joining the war, Great Britain was able to repulse Germany's attack on its own.<sup>20</sup>

Since World War II, the public has been fascinated by images and memorabilia from the war. Scholars have utilized the vast amount of visual information available to help reinforce civilian experiences. Photographer and author Martin Brayley's *The British Home Front* is an introductory study about the everyday lives of British citizens. His 2005 work includes topics such as food rationing, bombing attacks, and wartime romances. It also provides an overview of the organizations that supported home front efforts including the home guard, civil defense workers, and fire service. His use of civil

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<sup>19</sup> Amy Helen Bell, *London Was Ours: Diaries and Memoirs of the London Blitz* (London: I.B. Tauris & Co Ltd., 2008).

<sup>20</sup> Joshua Levine, *Forgotten Voices of the Blitz and the Battle of Britain* (UK: Ebury Press, 2006); for additional scholarship on British civilian wartime experiences see Phillip Ziegler, *London at War 1939-1945* (London: Sinclair-Stevenson, 1995); Norman Longmate, editor *The Homefront: An Anthology of Personal Experience, 1938-1945* (London: Chatto & Windus, 1981); Amy Bell, "Landscapes of Fear: Wartime London, 1939-1945," *Journal Of British Studies* 48, no. 1 (January 2009): 153-175, Academic Search Premier, EBSCOhost; Angus Calder, *The People's War: Britain 1939-1945* (Random House, 1969).

defense posters, photos, and other visual examples, helps the reader gain a clear understanding of the subject matter.<sup>21</sup>

Peter Doyle's 2010 *ARP and Civil Defence in the Second World War* uses a similar approach as Brayley in his examination of the Air Raid Precautions (ARP) organization and the services performed by the men and women who comprised it. Doyle, a military historian, and material culture of war specialist describes the various civil defense roles employed during the Blitz. His book provides information on the training, uniforms, and functions performed by ARP workers and includes pictorial examples of the helmets and uniforms worn for each job. Doyle also provides a high-level overview of the history, structure, and growth of the ARP as the war with Germany intensified. His goal is not to analyze their successes or failures but to provide the novice Blitz scholar with a greater understanding of the important efforts made by these men and women.<sup>22</sup>

In 1981, Neil Wallington wrote *Firemen at War* expanding upon the civil defense role of firefighting and its importance during the Blitz. The 30-year firefighting veteran argues that the London firefighter's war is still relatively unknown compared to other important battles of World War II, yet these men and women performed acts of bravery that should be recognized and commended. His scholarship details the horrific

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<sup>21</sup> Martin Brayley, *The British Home Front 1939–45* (London: Bloomsbury Publishing, Jan 1, 2006).

<sup>22</sup> Peter Doyle, *ARP and Civil Defence in the Second World War* (Oxford: Shire Publications, 2011); for another high level of overview of civil defense preparations see John Christopher, ed. *Air Raids What You Must Know What You Must Do!: The Wartime Guide to Surviving the Blitz* (Boston: Gloucestershire: Amberley Publishing, 2014); for additional reading on ARP civil defense services see Mike Brown, *Put that light out! Britain's Civil Defence Services at War 1939-1945* (Stroud: Sutton, 1999).

challenges experienced by the London Fire Brigade and Auxiliary Fire Services as night after night German airplanes bombed London. Wallington's work provides the reader with an understanding of the role of the fire service against the dramatic backdrop of bombing attacks and massive fires. He also pays tribute to those who served and establishes the bravery, achievements, and sacrifices made by the London's firefighters.<sup>23</sup>



Figure 1-3. Members of the London Fire Brigade work on putting out burning buildings in Queen Victoria Street, EC4, 11 May 1941. New Times Paris Bureau Collection/USIA/NARA, [www.britannica.com/event/the-Blitz](http://www.britannica.com/event/the-Blitz).

Sheldon Garon's "Defending Civilians against Aerial Bombardment; A  
Comparative/Transnational History of Japanese, German, and British Home Fronts,

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<sup>23</sup> Neil Wallington, *Firemen at War: The Work of London's Fire-fighters in the Second World War* (Huddersfield UK: Jeremy Milles Publishing, 2005); for an additional works on fire service see Shane Ewen, "Preparing the British Fire Service for War: Local Government, Nationalisation and Evolutionary Reform, 1935-41," *Contemporary British History*, 20:2, (2006): 209-231; G. V. Blackstone, *A History of the British Fire Service* (Routledge & Kegan Paul, 1957); Mosely, Leonard. *London Under Fire, 1939-45* (London: Pan Books, 1972).

1918-1945” expands civil defense beyond the borders of Great Britain to link the efforts made by three different regimes. While acknowledging the different governing structures in Imperial Japan, Nazi Germany, and democratic Britain, his 2016 article establishes the air defense similarities between the three countries including the use of civilians as air wardens, fire watchers, and as members of civil defense. Garon acknowledges the major distinction between the three was the Nazi use of forced labor to rebuild its cities as well as its punishment of those who violated civil defense rules. He asserts the similarities between the nations was due to the examination of each other’s tactics both prior to and during World War II. Garon’s intertwining of sources from all three countries forms a unique comparative study of the civil defense tactics deployed during the war.<sup>24</sup>

In addition to studies focused on civilian morale and unity, and the specific actions taken during the Blitz, historians continue to examine the use of aerial bombing as a method of conducting warfare. Military historian Lee Kennett’s *A History of Strategic Bombing* analyzes the use of strategic bombing from its beginnings in the 19th century through World War II. His research published in 1982, highlights the importance of civilian bombing during the early twentieth century and its perceived use as a means to surrender. Through the analysis of philosophies perpetuated by aerial warfare “prophets,” Kennett provides insight into the beliefs that led to World War II strategic bombing tactics. He concludes that civilian aerial warfare assumed quick victories

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<sup>24</sup> Sheldon Garon, “Defending Civilians against Aerial Bombardment: A Comparative/Transnational History of Japanese, German, and British Home Fronts, 1918-1945” *Asia-Pacific Journal: Japan Focus*, Vol. 14, Issue 23, (December 1, 2016): pp. 1-19, accessed February 18, 2019, <https://unk.idm.oclc.org/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=poh&AN=119933628&site=eds-live>, <https://apjif.org/2016/23/Garon.html>.

through the destruction and demoralization of citizens. However, as shown during the war, despite the high cost of civilian lives and property it failed to achieve its objective. Kennett's text provides enough details to give the reader an understanding of the technical aspects of bombing attacks but avoids getting lost in the minutia.<sup>25</sup>

Alfred Price, a former crew officer in the Royal Air Force (RAF), examines the specific bombing attacks initiated by the Germans during World War II on Great Britain in *Blitz on Britain*. His study written in 1977, evaluates the pre-war fears of German air power and describes the bombing attacks on Britain during the war and the defenses used in response. He agrees with Basil Collier's earlier conclusion that the British defenses improved by the end of the war. However, Price argues they did not stop the night raids conducted during the Blitz. This text offers a comprehensive overview of the aerial attacks on Great Britain and the successful military response.<sup>26</sup>

Uri Bialer's 1980 book *The Shadow of the Bomber: The Fear of Air Attack and British Politics, 1932-1939* focuses specifically on how government policy was influenced by the fear of a bombing attack. He examines events during the 1930s including the failed Disarmament Conference in Geneva (1932-1934), the bombing attacks during the Spanish Civil War (1936-1939), and German re-armament, and asserts they led to an overwhelming fear of a German aerial war. He contends, this resulted in

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<sup>25</sup> Lee B. Kennett, *A History of Strategic Bombing: From the First Hot-Air Balloon to Hiroshima and Nagasaki* (New York: Scribner, 1982); for casualty statistics see Michael Clodfelter, *Warfare and Armed Conflict: A Statistical Reference of Casualty and Other Figures, 1618-1991* (Jefferson, North Carolina: McFarland and Company Publishers, 2017).

<sup>26</sup> Alfred Price, *Blitz on Britain 1939-45*. 2<sup>nd</sup> ed. (1977) (U.K.: Sutton Publishing, 2000).

poor policy decisions based upon the fear of London's destruction by air. Bialer's work helps establish the motivations behind government actions prior to the war.<sup>27</sup>

*The Night Blitz: 1940-1941* written by John Ray in 1996, portrays the Blitz as a battle between the German Airforce and the civilians of Great Britain. Ray, who personally experienced the bombing raids, argues that Germany's goal was to destroy the morale of those attacked. He also contends the conflict evolved through the use of science and describes technological changes that took place during the Blitz. Ray also provides details about the bombing attacks including the cities hit and resulting civilian casualties. He concludes that Germany failed to achieve its purpose and that Great Britain's actions during the Blitz and throughout the war are important to future generations.<sup>28</sup>

Military historian Richard Overy echoes the work of other scholars and argues assumptions made about civilian bombings at the onset of World War II were inaccurate. Based upon a comprehensive analysis of bombing attacks throughout Europe, *The Bombing War Europe 1939-1945* written in 2014, concludes aerial bombing failed to knock out the economic backbones of both Germany and Great Britain, gas was not used (although available), and civilians did not revolt to end the war. Overy details the

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<sup>27</sup> Uri Bialer, *The Shadow of the Bomber: The Fear of Air Attack and British Politics, 1932-1939* (London: Royal Historical Society, 1980).

<sup>28</sup> John Philip Ray, *The Night Blitz 1940-1941* (Cassell Military, 1996); for additional reading on bombing attacks see Charles Whiting, *Britain Under Fire: The Bombing of Britain's cities, 1940-1945* (London: Century, 1986); Yelton, David K. "British Public Opinion, the Home Guard, and the Defense of Great Britain, 1940-1944," *The Journal of Military History* 58, no. 3 (1994): 461-480, [www.http://jstor.org/stable/2944135](http://www.jstor.org/stable/2944135); Christopher Cole and E.F. Cheeseman, E. F. *The Air Defence of Britain, 1914-1918* (London: Putnam, 1984); Matthew Dallek, "London Burning: The Blitz of England and the Origins of "Home Defense" in Twentieth-Century America," *Journal of Policy History* 27, no. 2 (April 2015): 197-219, Academic Search Premier, EBSCOhost.

inefficiency of air attacks due to such challenges as mechanical failures, poor equipment, and inaccurate targeting, and argues civilian bombing as a weapon failed during the war.<sup>29</sup>

In 2015, *The London County Council Bomb Damage Maps: 1939-1945* with a forward by Lawrence Ward was published for the first time to the public. This compilation of 110 hand colored maps documents the level of damage done to London and represents a visual picture of the massive loss experienced by those who endured the Blitz. Ward, principal archivist of the London Metropolitan Archives provides the reader with a narrative of the Blitz as background to the images displayed throughout the book. The inclusion of details about each attack, including each raid, bomb damage, and its coinciding map provides a significant graphical history of the strategic bombing inflicted on Britain during World War II. This work also includes a series of photos taken by police constables Arthur Cross and Free Tibbs showing the horrific damage done throughout the city.<sup>30</sup>

While London's Blitz experience is the most documented, there are a growing number of studies on the experiences of other British cities bombed during the war. These accounts mostly written by local authors provide important insights into the hardships encountered by smaller communities. *The Belfast Blitz: The City in the War Years* written in 2015 by Brian Barton, offers a detailed account of the impact of the Blitz on Belfast and its residents. Using primary sources including archival research and

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<sup>29</sup> Richard Overy, *The Bombing War Europe 1939-1945* (London: Penguin, 2014).

<sup>30</sup> Laurence Ward, *The London County Council: Bomb Damage Maps 1939-1945* (London: Thames and Hudson LTD, 2015).

personal interviews, he explains how citizens worked together after the bombing attacks. *Bombs on Belfast, The Blitz 1941* written in 1984, former Belfast Lord Mayor Ian Adamson examines the four German bombing attacks on Belfast that resulted in 1,000 deaths and 2,500 more injured. He notes that due to the remoteness of the city, it was left unprotected and unprepared and as a result its Civil Defenses Services were understaffed and ill-equipped to deal with the raids. Using photos taken by the *Belfast Telegraph*, Adamson provides an important study of the Belfast Blitz experience.<sup>31</sup>

In his 1982 work *Birmingham At War* Alton Douglas creates a photographic historical account of Birmingham during World War II while Gordon Cherry's more recent narrative *Birmingham: A Study in Geography, History, and Planning* explores the impacts of the Blitz on Birmingham as part of its larger history. Cherry explores the growth, structure, and evolution of the city since its founding. He then looks at the impact of World War II on the city and its post-war role. Tom Geraghty and Trevor Whitehead in *The Dublin Fire Brigade* provide the first complete history of the Dublin Fire Brigade since its inception in 1862. Their book written in 2004, dedicates a chapter to the bombing of both Belfast and Dublin and the efforts made by the fire service during these attacks. Geraghty and Whitehead provide the reader with important key historical moments in the history of the fire service as well as a series of moving photos.<sup>32</sup>

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<sup>31</sup> Brian Barton, *The Belfast Blitz: The City in the War Years* (Belfast: Ulster Historical Foundation, 2015); Ian Adamson *Bombs on Belfast, The Blitz 1941* (Belfast: Pretani Press, 1984).

<sup>32</sup> Douglas Alton, *Birmingham At War, A Pictorial Account* (Birmingham: Birmingham Post and Mail, 1982); Gordon Cherry, *Birmingham: A Study in Geography, History, and Planning* (Milton, Australia: John Wiley & Sons Australia LTD, 1994); Tom Geraghty and Trevor Whitehead, *The Dublin Fire Brigade* (Dublin: Four Courts Press, 2004).



Although Coventry was bombed fewer times than other cities throughout Great Britain, the destructiveness of the attacks and their lasting legacy have resulted in a larger historiography about its Blitz experience. In 1978, social and military historian Norman Longmate provided the first comprehensive work on Coventry's bombing experience in *Air raid: The Bombing of Coventry, 1940*. In 2015, military historian Karen Farrington wrote *The Blitzed City: The Destruction of Coventry, 1940*. Her analysis utilizes poignant interviews from veterans of the bombing raid on Coventry's city center in November 1940. These first-hand accounts add to the historiography about the most destructive and tragic raid in the Blitz. Frederick Taylor's *Coventry: 14 November 1940* published in 2015, highlights the importance of the city as a bombing target. His study also describes the destructive technology of aerial bombing and the limitations of British defenses in intercepting night bombers. Taylor dispels myths about the level of knowledge the British government had prior to the attack and explains why "Remember Coventry" was used as a rallying cry during bombing attacks on Germany later in the war. Taylor utilizes sources including eye-witness interviews from the BBC archives. It also references Longmate's prior research.<sup>33</sup>

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<sup>33</sup> Norman Longmate, *Air raid: The Bombing of Coventry, 1940* (New York: D. McKay, 1978); Karen Farrington, *The Blitzed City: The Destruction of Coventry, 1940* (London: Aurum Press, 2015); Frederick Taylor, *Coventry; 14 November 1940* (London: Bloomsbury Publishing PLC, 2015); for additional readings on the Blitz experiences of British cities see Richard Whittington-Egan, *The Great Liverpool Blitz* (United Kingdom: The Gallery Press, 1987); Anthony Kemp, *Southampton at War* (Southampton: Ensign Publications, 1989); P. Jenkins, *Battle over Portsmouth: A City at War in 1940* (Midhurst: Middleton Press, 1986); Dennis Morgan, *Cardiff – a City at War* (UK: Dennis Morgan, 1998); John Macleod, *River of Fire: The Clydebank Blitz* (Edinburgh: Birlinn Ltd, 2010); Philip Graystone, *The Blitz on Hull: 1940–45* (Great Britain: Lampada Press, 1991).

Although there is extensive historiography written about the Blitz, scholars continue to reinterpret and revisit the impact of this significant event. Historians have analyzed bombing strategies, civilian experiences, and the specific actions taken by the government and local communities. They have also highlighted the economic and class challenges exposed by the Blitz and the lasting impacts on Britain today. This historiography, while comprehensive, remains focused on the historical perspective of the author with minimal crossover between genres. Furthermore, comparisons between the Blitz and other strategic bombing attacks remain limited.

Utilizing empirical evidence, this thesis will connect multiple historical disciplines (i.e., political, social, and military) together to create a cohesive understanding of the actions, assumptions, and events leading up to the Blitz. It will also evaluate how well prepared the civilian population was for the bombing attacks by examining government communication tactics and subsequent surveys. This thesis will contend that any failure to prepare for an attack was a result of civilian apathy rather than a lack of effort from leaders. Furthermore, it will explore the adjustments made to civil defense policies during the Blitz in response to the realities of nightly bombing raids. Finally, a comparison will be made between the preparations and casualties of multiple countries impacted by raids during this period. The goal is to understand pre-war British casualty assumptions versus actuals and to establish the success of its government in reducing the number of civilian deaths. The following analysis contends that the loss of life was expected yet mitigated when possible.

Chapter 2 will trace Britain's bombing casualty projections from the end of World War I until the beginning of the Blitz in 1940. It will also discuss the assumptions made about the types of weapons to be used, including incendiary bombs and gas. Chapter 3 will focus on the British civil defense efforts prior to the Blitz, highlighting key legislation and the programs implemented. This chapter will also identify various policy challenges during the interwar years such as budget constraints, conflicting priorities between the military and the home front, and the burden placed upon businesses and local communities. Critical to the success of British civil defense programs was the dissemination of information to civilians and local communities. Chapter 4 will describe the methods used to prepare citizens for an attack including brochures, signs, radio, films, and newspaper advertisements and articles. Furthermore, this chapter will evaluate the effectiveness of the government in communicating information prior to the war and the response by civilians to these efforts.

Chapter 5 will focus on the Blitz itself and provide a brief overview of the bombing attacks and casualties sustained and describe how government policies evolved in response. Chapter 6 will compare actual casualties to initial estimates and evaluate the most impactful government programs. It will also discuss civilian bombing attacks on other countries from 1937 to 1940 and highlight the tactics and civilian casualty differences. This analysis will be used to evaluate the accuracy of initial British government projections and to validate the success of its civil defense policies.

## **Chapter 2 – Assumptions and Armageddon Civilian Aerial Attacks, World War I, and The Interwar Period**

The emergence of aerial warfare during World War I shaped how leaders envisioned future conflicts. Air attacks against non-combatants and the post-war ideologies that emerged significantly influenced British civil defense policies leading up to the Blitz. This chapter will discuss the development of air power, impact on British civilians during the Great War, and highlight post-war events that confirmed its destructive nature. Furthermore, it will outline assumptions made about the future of civilian bombing raids including the types of weapons used and potential casualties.

Although aerial bombing was not widely used until 1915, the writers envisioned the possibility in the eighteenth century. In 1784, Prussian lieutenant of engineers J.C.G. Hayne wrote a book on military aeronautics and the potential use of grenades and cannon on enemy troops. During the 1800s, scientists experimented with air balloon fleets for use in reconnaissance and as weapons, and by 1906, France, Germany, and Italy all possessed airships. In 1903, the Wright brothers flew the first powered aircraft and in 1911 an Italian aviator dropped four grenades on Turkish targets during the Italian-Turkish War.

By the late 1800s, the devastating nature of aerial warfare became a subject for science fiction writers. Albert Robida's *War in the Twentieth Century* written in 1883, depicted a conflict between Australia and Mozambique during which Australia launched a rocket attack from its six hundred balloon air fleet. In 1908, author H.G. Wells wrote *War in the Air*, which demonstrated the impact of an aerial world war and the destruction

of modern civilization. His fictional account portrayed a German air fleet attack on the city of New York and the terror inflicted on the civilians as bombs destroyed the city. “As the airships sailed along, they smashed up the city as a child will shatter its cities of brick and card. Below, they left ruins and blazing conflagrations and heaped and scattered dead; men, women, and children...Lower New York was soon a furnace of crimson flames, from which there was no escape.”<sup>1</sup>



Figure 2-1. The airship "Nulli Secundis" in flight over the Crystal Palace 1909, Imperial War Museum, Q 112052, <https://www.iwm.org.uk/collections/item/object/205039589>.

Additionally, aerial warfare theorists described the potential devastation of future wars. In 1898, Ivan S. Bliokh, a Polish lawyer wrote a treatise on warfare and highlighted the idea of airships dropping explosives. “It seems that we are very close to

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<sup>1</sup> H.G. Wells, *The War In The Air: And Particularly How Mr. Bert Smallways Fared While It Lasted*. (London: George Bell and Sons, 1908), 208, accessed June 29, 2020, <https://library.si.edu/digital-library/book/warair00wella>.

facing a danger to which our world cannot remain indifferent.”<sup>2</sup> Lord Montagu of Beaulieu’s 1909 work, illustrated the potential impact of a massive air strike on London. He argued that the modern state could not survive damage to its capitol and the loss of Parliament, ministries, post and telegraph offices would destroy the heart of the country.<sup>3</sup>

As warfare capabilities continued to advance, world leaders sought ways of limiting armaments via formal peace conferences. In 1898, Czar Nicholas II of Russia, proposed a conference of world powers “with the objective of seeking the most effective means of ensuring to all peoples the benefits of a real and lasting peace, and, above all, of limiting the progressive development of existing armaments.”<sup>4</sup> In 1899, twenty-six countries met at The Hague, Netherlands to discuss rules of war. During the convention, they introduced regulations to limit warfare from the air. The Hague Declaration of 1899, signed and ratified by all attendees excluding Great Britain states “The contracting Powers agree to prohibit, for a term of five years, the launching of projectiles and explosives from balloons, or by other new methods of similar nature.”<sup>5</sup> In 1907, forty-four nations including Latin American countries excluded from the prior conference, met again at The Hague and extended the prohibition of projectiles “for a period extending to

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<sup>2</sup> Lee B. Kennett, *A History of Strategic Bombing: From the First Hot-Air Balloon to Hiroshima and Nagasaki* (New York: Scribner, 1982), 9.

<sup>3</sup> Kennett, *A History of Strategic Bombing*, 43.

<sup>4</sup> James Brown Scott (edt), *The Hague Conventions and Declarations of 1899 and 1907*, (New York: Oxford University Press, 1915), v, accessed July 21, 2020, <https://archive.org/details/hagueconventions00inteuoft/page/n1/mode/2up>.

<sup>5</sup> Scott (edt). *The Hague Conventions*, 220.

the close of the Third Peace Conference”<sup>6</sup> Germany never ratified this agreement and World War I precluded a Third Peace Conference from taking place.

In 1914, prior to the outbreak of war, James Molony Spaight wrote *Aircraft in War* describing the reality of aerial warfare in future battles. “The science of war and the science of flight have in our days formed an alliance which will outlast our generation and will in all probability endure as long as war itself.”<sup>7</sup> He argued that although the wholesale destruction of undefended cities is unlikely, it is probable that civilians in partially defended cities will be attacked. “One is justified in assuming that aircraft will be within their war rights in dropping dynamite even on the non-defended parts – the civilian quarters – of cities which are defended at other points.”<sup>8</sup> Spaight also outlined the deficiencies of the existing Hague rules, which limited the dropping of bombs to those Powers who signed the agreement. In addition, he created a series of recommended rules aimed at controlling the use of aircraft in war.

On July 28, 1914, World War I erupted and for the next four years countries raced to create newer weapons including the tank, flame thrower, mustard gas, and Paris Gun. Leaders intent on winning the war deemed soldiers expendable and ordered frontal assaults, killing thousands at a time. They also authorized violence against local populations including shootings, bombings, and mass starvation. Moreover, the political and economic structure of much of Europe, Asia, and the Middle East transformed as the

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<sup>6</sup> Scott (edt). *The Hague Conventions*, 220.

<sup>7</sup> J.M. Spaight, *Aircraft in War* (London: Macmillan, 1914), 1, accessed July 6, 2020, [https://archive.org/details/BombingVindicated\\_201711/page/n3/mode/2up?q=civilian](https://archive.org/details/BombingVindicated_201711/page/n3/mode/2up?q=civilian).

<sup>8</sup> J.M. Spaight, *Aircraft in War*, 10.

Russian, German, Austro-Hungarian, and the Ottoman empires were dismantled and their rulers either executed or exiled. With over 37 million casualties worldwide including 17 million deaths (10 million military and 7 million civilian) the war haunted the survivors and shaped their beliefs about the future of war.



Figure 2-2. A British airman dropping a bomb, Imperial War Museum, Q 67698, <https://www.iwm.org.uk/collections/item/object/205314988>

When the war began, aerial bombing was still in its infancy but as the conflict continued combatants made technological advances in the air. By 1918, airships and heavy bomber aircraft had struck a series of both military and non-military targets. For example, 300 bombs were dropped on Venice in one night and by the end of the war, the city was bombed forty-two times.<sup>9</sup>

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<sup>9</sup> Kennett, *A History of Strategic Bombing*, 31.



From 1915 to 1918, British civilians endured hundreds of German bombing attacks. As the war progressed, raids evolved from the use of Zeppelin airships to Gotha G.V.s and Zeppelin-Staaken R-series Heavy Bombers. Although Zeppelin airships carried a larger payload of bombs, their slow speeds and limited maneuverability made them easy targets during a counter-attack. According to H.A. Jones in *In War In the Air: The Part Played in the Great War by the Royal AirForce*, “It was the production of the twin-engine Gotha (type G.IV) in the autumn of 1916, when the limitations of the Zeppelin as a raiding weapon were becoming clear, which brought the question of bombing England by aeroplane within the realm of practical discussion.”<sup>10</sup> Zeppelin raids conducted mainly at night to avoid British fighters and anti-aircraft continued until August 5, 1918.

Bomb types also advanced to larger 300 lb. bombs and incendiary devices, which produced mixed results. According to German Major Freiherr von Bülow, “during two-night raids on England, on the 31<sup>st</sup> of October and the 6<sup>th</sup> of December 1917, large numbers of these bombs were dropped both times with no success. The sound ideas of creating panic and disorder by numbers of fires came to nothing owing to the inadequacy of the material employed.”<sup>11</sup> Other raids however were more successful. For instance,

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<sup>10</sup> H.A. Jones, *The War In the Air: The Part Played in the Great War by the Royal AirForce Vol. 5* (Oxford: University Press, 1935), 19, accessed July 8, 2020, <https://ia801604.us.archive.org/29/items/warinairbeingsto05rale/warinairbeingsto05rale.pdf>.

<sup>11</sup> Jones, *The War In the Air*, 105.

on May 25, 1917, seventy-two men, women, and children perished and an additional ninety-one were injured in a raid over the town of Folkestone, Kent.<sup>12</sup>



Figure 2-3. The shops in Folkestone after the May 1917 bombing, Matt LeClere, “Folkestone Air Raid: 100 years one town remembers Tontine Street disaster.” Kent Online, May 24, 2017, <https://www.kentonline.co.uk/folkestone/news/a-quiet-spring-day-then-126206/>.

On May 15, 1915, Germany conducted its first air raid on London and over the course of the war, bombed the city twenty-five times with more than 922 bombs and incendiary devices dropped. These primarily night attacks utilizing both airships and planes resulted in 524 civilian deaths and 1,788 casualties.

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<sup>12</sup> Jones, *The War In the Air*, 21.

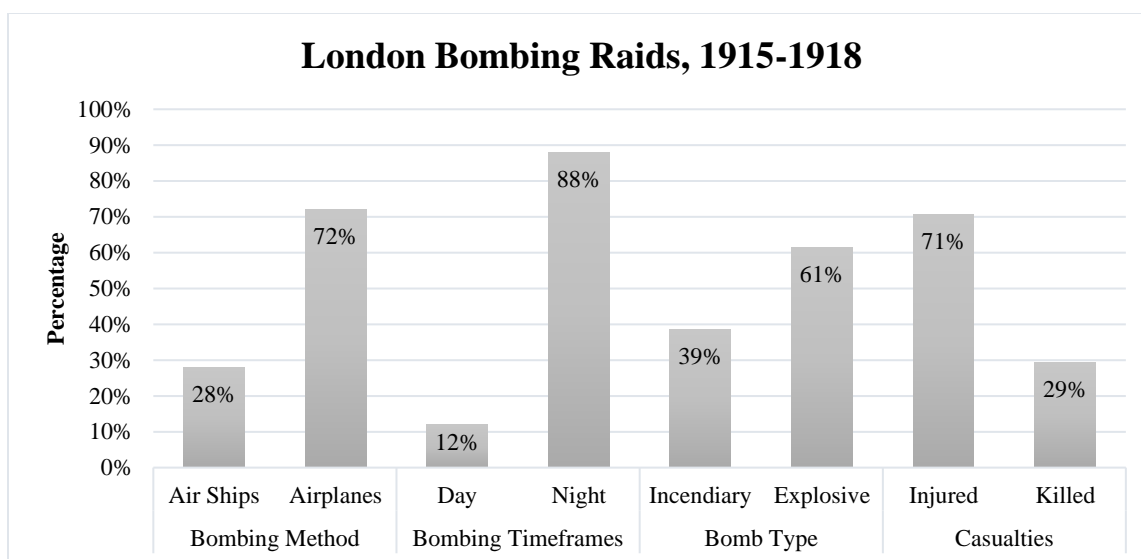


Figure 2-4. WWI London Bombing Raids, Data Adapted from Committee of Imperial Defence, *Communications for Air Raid Intelligence in London and the Hackney Decontamination Scheme*, December 1932 – June 1934, 1, The National Archives, Kew, Item CAB 46/2.

When the German bombing attacks began, the British were unprepared for this new type of warfare. With few air raid precautions in place; people did not know what to do in the event of an attack. According to Annie Howell, who lived in south-east London. “When the raids came we used to run into the skin market...and the skins was all baled up and we used to sit on the floor there and the bales of skin around us.”<sup>13</sup> In London, people also sheltered in the underground subway stations. According to Cecil Carpenter, who worked for the Underground, “They used to come down with their kiddies and get them off to sleep down there, lay them down in their blankets fold them up and put them down. When the raids was on, the Zeppelins, there used to be an extra volume of them then all scrambling down then.”<sup>14</sup> For instance during six nights of

<sup>13</sup> Imperial War Museum “Voices of The First World War, Zeppelins Over Britain,” accessed June 29, 2020, <https://www.iwm.org.uk/history/voices-of-the-first-world-war-zeppelins-over-britain>.

<sup>14</sup> Imperial War Museum “Voices of The First World War.”

bombing in September 1917, over three hundred thousand Londoners sought shelter outside of their homes or left the city.



Figure 2-5. A police officer patrolling with his "take cover" sign, Phil Edwards, Vox "When emergency warnings were a guy with a sign hanging from his neck," Topical News Agency/Getty Images, March 27, 2015, <https://www.vox.com/2015/3/27/8301253/wwi-warning-signs>.

Throughout the war, officials tested different air raid warning methods with varying degrees of success. Policemen carrying "take cover" placards and air raid spotters lighting maroons (rockets that made a loud banging noise with a bright flash) were the most common ways used to warn people of an impending attack. The loud sound of the maroons at times led to confusion and panic. On January 28, 1918, maroon warnings created stampedes at the Bishopsgate Goods Station and at Mile End railway stations to take shelter. Fourteen people mostly women and children perished and

another fourteen sustained injuries as people ran over each other trying to get into these air-raid shelters.<sup>15</sup>

The personal fear of a raid along with hours spent sheltering during a warning also led to lost worker productivity. In June 1924, the Sub-Committee on Air Raid Precautions paper *Effects of Aerial Attack on the United Kingdom During the Great War* highlighted the impact of German raiding activities on the output of wartime industries. According to an analysis of the production of munitions by Messrs. Vickers Limited, an air raid could result in four to six hours of lost work time. Moreover, each warning led to a ten percent reduction in daily output and for days after a raid more mistakes were made resulting in a high level of rejects and rework.

**Table 2-1. Gun Production Messrs. Vickers Works (Crayford) 1917-1918**

<i>Date</i>	<i>Output (# of Guns)</i>	<i>Remarks</i>
September 20, 1917	134	No raids for previous fortnight
September 22, 1917	110	
September 24, 1917	30	Raid
September 25, 1917	29	Raid
September 28, 1917	74	Three days with no raids
September 29, 1917	0	Two raids in one day
September 30, 1917	0	
October 1, 1917	0	Five raids in four days
October 2, 1917	47	
January 28, 1918	0	Raid
February 5, 1918	330	No raids for some weeks

*Source:* Data from Committee of Imperial Defence, Subcommittee on Air Raids Precautions, *Effects of Aerial Attack on the United Kingdom During the Great War*, June 18, 1924, 9, The National Archives, Kew, Item CAB 46/3.

The effects of raids also extended as far north as Yorkshire highlighting the vulnerability of civilians living further away from London. According to a letter from a

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<sup>15</sup> Jones, *The War In the Air*, 114.

Sheffield firm, the effects of the raids had a significant impact on its steel workers, “On Monday the 3<sup>rd</sup> instant after the previous night’s air raid, out of a total of over 2,000 men 633 did not turn out the first quarter, and 196 were off all day, our usual number being about 450 and 170 respectively.”<sup>16</sup> The Chairman of the Loftus Urban District Council also referenced the anxiety of the populace living near the Skinningrove blast furnaces. “A very large number of houses are built within a few yards of the works, and the public have after so many shocks flocked into the local mine for shelter by thousands thus very materially interfering with important work, as they are in such a state of terror that a large number remain in the mine up to 5 a.m. and cannot follow their employment.”<sup>17</sup>

During the course of the war, German aircraft dropped 300 tons of bombs on Great Britain with an average of five tons per raid. By 1918, 1,400 civilians died and an additional 4,800 suffered wounds from these attacks. The Great War demonstrated there were no longer non-combatants, and people were vulnerable to attack and even death in their own homes. This experience highlighted the need for greater home defense measures. Although, civilian air raid casualties were minimal compared to the total loss of life in the war, it offered a case study for future conflicts.

Post-World War I, aerial warfare philosophers envisioned civilian bombing as a way to end wars more quickly through targeted mass destruction and chaos. In 1921, “total warfare” theorist Italian Lieutenant Colonel Giulio Douhet published *The Command of the Air*, which advocated for the bombing of cities to quickly end conflict.

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<sup>16</sup> Committee of Imperial Defence, *Effects of Aerial Attack*, 4.

<sup>17</sup> Committee of Imperial Defence, *Effects of Aerial Attack*, 4.

In his work, Douhet assumed 350 bombers each carrying two tons of gas bombs would kill fifty-thousand people in ten cities. After eight missions, the number would grow to over four million people in eighty different locations. He argued the resulting deaths of one out of ten people and their extreme suffering would lead to an immediate surrender:

Take the center of a large city and imagine what would happen among the civilian population during a single attack by a single bombing unit... Within a few minutes some 20 tons of high-explosive, incendiary, and gas bombs would rain down. First would come explosions, then fires, then deadly gases floating on the surface and preventing any approach to the stricken area. As the hours passed and night advanced, the fires would spread while the poison gas paralyzed all life... And if on the second day another ten, twenty, or fifty cities were bombed... A complete breakdown of the social structure cannot but take place in a country subjected to this kind of merciless pounding from the air. The time would soon come when, to put an end to horror and suffering, the people themselves, driven by the instinct of self-preservation, would rise up and demand an end to the war.<sup>18</sup>

British Major-General John Fuller like Douhet, imagined the bombing of cities as a way to demand immediate capitulation. In his book the *Reformation of War*, he argued that future wars would include the bombing and use of mustard gas on civilians. In Fuller's scenario, a forced surrender could be attained within days of an attack as people became homeless, casualties overwhelmed hospitals, and all semblance of order collapsed:

I believe that, in future warfare, great cities, such as London, will be attacked from the air, and that a fleet of 500 aeroplanes each carrying 500 ten-pound bombs of, let us suppose, mustard gas, might cause 200,000 minor casualties and throw the whole city into panic within an hour of their arrival... What of the government at Westminster? It will be swept away by an avalanche of terror.

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<sup>18</sup> Giulio Douhet, *The Command of The Air*. 1921. trans. Dino Ferrari (New York: Coward-McCann, 1942), Rep. in 1983 by the Office of Air Force History. New Imprint by AIR FORCE HISTORY AND MUSEUMS PROGRAM Washington, D.C. 1998, 58, accessed September 19, 2018, <http://www.airforcemag.com/MagazineArchive/Documents/2013/April%202013/0413keeperfull.pdf>.

Then will the enemy dictate his terms, which will be grasped at like a straw by a drowning man.<sup>19</sup>

Fuller asserted that the bombing of civilians is a more humane way of fighting a war due to its swift conclusion unlike the millions killed during World War I.

J.M. Spaight who joined the Air Ministry in 1918, wrote *Air Power and War Rights*, which echoed many of the same themes as other writers. He argued the wars of massive armies had become obsolete and the bombing of civilians the primary objective of future conflicts. “The attacks on the towns will be the war. Their success will mean victory for the side which can deliver them in sufficient strength...No amount of composure, no surplusage of bull-dog tenacity can save a people raided, copiously, scientifically, systematically.”<sup>20</sup> Spaight’s work further advocated for rules of air warfare in order to protect civilians “If our city populations are to be saved from calamities almost unimaginable in future wars, and if the claims of air power are at the same time to be satisfied, we shall be forced sooner or later.”<sup>21</sup> He then continued with a series of recommendations aimed at banning the bombing of cities.

In conjunction with those writing about the future of war, governments invested in air power. Hugh Trenchard Chief of Staff of Great Britain’s Royal Air Force (RAF) from 1919 to 1929, recognized the importance of an organized air force as both an

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<sup>19</sup> Col. J.F.C. Fuller, *The Reformation of War* (London: Hutchinson & Co., 1923), 150, accessed May 31, 2020, <https://archive.org/details/reformationofwar00fulluoft/page/n17/mode/2up>.

<sup>20</sup> J.M. Spaight, *Air Power and War Rights* (New York: Longmans, Green, and Co. 1924), 12-13, accessed July 6, 2020, <https://ia801308.us.archive.org/35/items/in.ernet.dli.2015.278562/2015.278562.Air-Power.pdf>.

<sup>21</sup> Spaight, *Air Power*, 30.



offensive and defensive weapon. He worked to establish the RAF as a separate military unit and utilized aerial bombing to control occupied territories. After the fall of the Ottoman Empire, Great Britain gained control of present day Iraq. In 1920, after a summer of peaceful mass demonstrations against British rule, the revolt gained momentum as several Iraqi tribes, former Ottoman military leaders, and religious communities fought to establish an independent Arab state. In response, the RAF dropped 97 tons of bombs and fired 183,861 rounds at both rebels and civilians. This lower cost method of military occupation was called “aerial policing” by then War Secretary Winston Churchill.



Figure 2-6. Westland Wapiti Mark IIA, J9409, of No. 30 Squadron RAF based at Mosul, Iraq, in flight over the city of Mosul, May 11, 1932, Imperial War Museum, HU 63062, <https://www.iwm.org.uk/collections/item/object/205039945>.

Trenchard who served as commander of the Royal Flying Corps during World War I, also envisioned aerial warfare as a tactic to win wars. In 1922, he referenced British air power and its strategic importance, as demonstrated in Iraq. “Air power is of vital concern to the Empire, and in Iraq...further evidence is accumulating of its great

potentialities. A continued demonstration, until its effectiveness is beyond dispute, may have far reaching results, in that it may lead to still further economies in defence measures.”<sup>22</sup>

While the British used these actions to subdue rebellions, the impact of bombing civilians was also tested. Arthur Harris, Wing Commander and later head of British WW2 Bomber Command wrote, “The Arab and Kurd now know what real bombing means in casualties and damage. Within forty-five minutes a full-size village can be practically wiped out and a third of its inhabitants killed or injured.”<sup>23</sup> The success of these bombing attacks helped solidify the importance of aerial warfare. According to historian A.J.P. Taylor “Here was an independent strategy of the air. From this moment, it was accepted that bombs could not only quell tribal revolts, but could win a great war.”<sup>24</sup> Simultaneously it highlighted the potential impact on civilian populations in the event of a bombing attack at home. In 1922, a series of articles written by Brigadier-General P.R.C. Groves and published in the *Times* (London) exposed the idea of a “knock-out blow from the air.”<sup>25</sup> This concept of the future of war remained a topic of public discussion throughout the 1920s and 1930s.

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<sup>22</sup> *The Development of Air Control in Iraq*, Secretary of State for Air, October 1922, 3, accessed May 31, 2020, [http://www.nationalarchives.gov.uk/pathways/firstworldwar/aftermath/p\\_iraq.htm](http://www.nationalarchives.gov.uk/pathways/firstworldwar/aftermath/p_iraq.htm).

<sup>23</sup> Geoff, Simons, *Iraq: from Sumer to Saddam*. (New York: St. Martin’s Press, 1994), 180.

<sup>24</sup> A.J.P. Taylor, *English History: 1914-1945*. (Great Britain: Oxford University Press, 1965), 229.

<sup>25</sup> Brett Holman, “The Air Panic of 1935: British Press Opinion between Disarmament and Rearmament,” *Journal of Contemporary History* 46, no 2 (April 2011), 291, accessed July 21, 2020, <http://www.jstor.com/stable/41305313>.

While debates over the effect and application of air power played out in strategy sessions and the periodical press, there was also an attempt to ban or limit the use of weapons developed during World War I. In February 1922, the five victorious powers, Great Britain, France, Italy, Japan, and the United States signed a treaty at the Washington Conference banning attacks by submarines against merchant shipping and the use of poisonous gases and analogous liquids.<sup>26</sup> The following year a Commission established by the same countries met at the Hague to establish rules around aerial warfare. The Commission comprised of jurists, military experts, and other government officials finalized and approved sixty-two articles, several of which focused on protecting civilians from air attacks:

**Art. 22 [Bombardment for the purpose of terror]** Aerial bombardment for the purpose of terrorizing the civilian population, of destroying or damaging private property not of military character, or of injuring non-combatants is prohibited.

**Art. 24 [Military objectives]** (1) Aerial bombardment is legitimate only when directed at a military objective... (2) Such bombardment is legitimate only when directed exclusively at the following objectives... (3) The bombardment of cities, towns, villages, dwellings or buildings not in the immediate neighbourhood of the operations of land forces is prohibited. In cases where the objectives specified in paragraph (2) are so situated, that they cannot be bombarded without the indiscriminate bombardment of the civilian population, the aircraft must abstain from bombardment.<sup>27</sup>

World leaders never ratified these rules but used them as guiding principles in future military conflicts.

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<sup>26</sup> Marcus Heinz Hanke, "The 1923 Hague Rules of Air Warfare: A Contribution to the Development of International Law Protecting Civilians from Air Attack," *International Review of the Red Cross*. IRCC No 292 (March 1993), 14, accessed, July 29, 2020 , <https://international-review.icrc.org/articles/1923-hague-rules-air-warfare-contribution-development-international-law-protecting>.

<sup>27</sup> Hanke "The 1923 Hague Rules," 17.

During the 1920s, Great Britain also monitored the military capabilities of other nations and used them to justify the expansion of the RAF. The Air Ministry’s Cabinet memorandum *Developments in French Air Force* described the growth of French aircraft at a rate of 150 new machines per month versus British production of 25 per month. Furthermore, it estimated that by 1923 “France will have an independent striking force of 140 squadrons, averaging 9 machines each, for purposes of bombing and fighting.”<sup>28</sup> In February 1923, the Air Ministry provided additional metrics comparing French and British aircraft production in its Cabinet memo *Air Policy and One-Power Standard*. The document also referenced French aircraft bombing capabilities of 75 tons of explosives dropped per day on London.<sup>29</sup> The Air Ministry used this information to highlight the risk of an aerial attack and advocate for additional air defense forces.

**Table 2-2. Air Force Strength Comparison, 1923**

<i>British</i>			<i>French</i>		
	<b>Machines</b>			<b>Machines</b>	
	1923	1925		1923	1925
	(Actual)	(Projected)		(Actual)	(Projected)
<i>In the United Kingdom</i>	137	333	<i>In France</i>	946	1,868
<i>Overseas</i>	234	242	<i>Overseas</i>	232	312
<b>Total</b>	<b>371</b>	<b>575</b>	<b>Total</b>	<b>1,178</b>	<b>2,180</b>

Source: Air Ministry, *Air Policy and One-Power Air Standard*, 2.

In June, the National and Imperial Defence Sub-Committee updated these numbers again and bomb projections significantly increased. According to the Sub-

<sup>28</sup> Air Ministry, *Developments in French Air Force*, Secretary of State for Air, March 24, 1922, 1, accessed August 5, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-136.pdf>.

<sup>29</sup> Air Ministry, *Air Policy and One-Power Air Standard*, Secretary of State for Air, February 1923, 6, accessed August 5, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-158.pdf>.

Committee's *Interim Report*, France could drop 168 tons of bombs on England during the first twenty-four hours, 126 tons the second twenty-four hours, and 84 tons for each succeeding twenty-four hours indefinitely.<sup>30</sup> At the October 1923 Imperial Conference, Secretary of Air Sir Samuel Hoare, provided another update on French bombing capabilities. In his report, he asserted that the French had 596 planes capable of dropping 105 tons during an initial 24 hour attack on London. This would be followed up with an additional 50 tons daily and 1,500 tons per month.<sup>31</sup> In 1924, these numbers were revised again, assumed London was the main target with fifty percent of the bombing tonnage falling on the city. Moreover, these projections anticipated a combination of explosive and incendiary devices, dropped primarily during daylight raids.

**Table 2-3. British Estimates of French Bombing Capabilities, 1922-1924**

<i>Year</i>	<i>First 24-hours</i>	<i>Second 24-hours</i>	<i>Each subsequent 24-hours</i>
1922	150 tons	110 tons	75 tons
1923 (Jun)	168 tons	126 tons	84 tons
1923 (Oct)	105 tons	50 tons	50 tons
1924	200 tons	150 tons	100 tons

*Source:* Adapted from Air Ministry, *Air Policy and One-Power Air Standard*, 6; National and Imperial Defence Sub-Committee, *Interim Report*, 2; *Air Defence Imperial Conference Meeting*, 17.

Furthermore, officials expected 3,825 deaths and 11,250 total civilian casualties during the initial 72 hours of raids. A prolonged attack increased the estimated death toll to over 25,000 people per month.

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<sup>30</sup> National and Imperial Defence, Sub-Committee of the Committee of Imperial Defence, *Interim Report*, June 12, 1923, 2, accessed August 5, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-160.pdf>.

<sup>31</sup> *Air Defence Imperial Conference Meeting*, Samuel Hoare, October 19, 1923, 17, accessed July 25, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-164.pdf>.

**Table 2-4. Civilian Casualty Estimates, 1924**

	<i>Killed</i>	<i>Wounded</i>	<i>Total</i>
First 24-hours	1,700	3,300	5,000
Second 24-hours	1,275	2,475	3,750
Every subsequent 24-hours	850	1,650	2,500

Source: Committee of Imperial Defence, Sub-Committee on Air Raid Precautions, *Report*, July 8, 1925, 28, accessed September 9, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-175.pdf>.

Assumptions were also made about the probable use of gas in an air raid.

Research conducted by the Committee of Imperial Defence Chemical Warfare Sub-Committee in April 1925, concluded an enemy at the onset of a war would drop mustard gas on London, resulting in a significant number of wounded civilians. Moreover, each 20 lb. gas bomb could contaminate approximately 300 square yards. As stated, “It can be predicted with certainty that a heavy bombardment with mustard gas by aeroplanes would result in very large number of casualties in thickly-populated districts...An area of three miles square in the heart of London might contain about a million people by day and about half this number at night.”<sup>32</sup>

Although certain of a gas attack, opinions varied about its probable severity. In October 1926, the Committee of Imperial Defence compared the mortality rate of gunshot wounds in soldiers versus gas attacks during World War I. It concluded in its *Chemical Warfare Policy* that of the total 180,983 gas casualties evacuated to hospitals

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<sup>32</sup> Chemical Warfare Committee, *Memorandum on the Protection of the Civil Population Against Gas Attack*, May 1925, 303, accessed August 5, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-175.pdf>.

between April 1915 and November 1918, only 6,062 died from their injuries (3.3%). This was compared to 126,746 total military deaths (7.5%).<sup>33</sup> The report determined civilians might panic from a gas attack, but that it was more humane than a high explosive bombing raid.

In 1927, the Sub-Committee on Air Raid Precautions further defined the potential scale of a gas attack on London. In its *Note on the Estimated Scale of Gas Attack on London*, they referenced both Soviet Union and Germany as having researched the use of chemical warfare. However, France, due to its vicinity, was again identified as a sample antagonist. In the Sub-Committee’s research, spraying and bombing were the two methods used to disburse gas. Furthermore, while more legal than explosives, the weight of the gas cannisters reduced the amount dropped by each aircraft. Assuming gas canisters occupied fifty percent of the carrying capacity of a plane, the Sub-Committee projected approximately 390 tons could be dropped on London in one month.

**Table 2-5. Civilian Air Attack Gas Bomb Projections, 1927**

	<i>Gas – Day Attacks</i>	<i>Gas – Night Attacks</i>
First 24 hours	18 ¾ tons by day	6 ¼ tons by night
Second 24 hours	14 tons by day	4 ¾ tons by night
Every subsequent 24 hours	9 1/3 tons by day	3 tons by night

*Source:* Committee of Imperial Defence, Sub-Committee on Air Raid Precautions, *Note on the Estimated Scale of Gas Attack on London*, October 18, 1927, 3, The National Archives, Kew, Item CAB 46/4.

In both 1928 and 1929, Great Britain updated its aircraft projections of other world powers and evaluated the risk from potential belligerents. For instance, in December 1928, an evaluation of German military strength concluded that while

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<sup>33</sup> Committee of Imperial Defence, *Chemical Warfare Policy*, October 1926, 2, accessed August 5, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-181.pdf>.

Germany did not have a formal air service, as a leader in civilian aviation, its aircraft could quickly shift to arm its military.<sup>34</sup> Moreover, in January 1929, the Air Ministry compared Great Britain’s aircraft production to that of Italy, France, Soviet Union, and the United States. Its report *Air Estimates, and the Course of Air Expenditure in this Country and Abroad* concluded that in the event of a war, Great Britain was at risk due to its lack of aircraft production funding. As evidence, expenditures and aircraft comparisons were provided to the Cabinet for review.

**Table 2-6. Comparative Air Strengths**

<i>Country</i>	<i>1<sup>st</sup> Line Aircraft</i>
France	1,300
United States	914
Italy	862
Soviet Union <sup>1</sup>	817
Great Britain	783

Source: *Air Estimates, and the Course of Air Expenditure in this Country and Abroad*, January 14, 1929, 13, accessed August 5, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-201.pdf>.

<sup>1</sup>Soviet Union’s numbers were an unconfirmed estimate.

Conversely, while countries expanded their military capabilities, they also discussed arms reduction. In February 1932, a decade after the Hague rules were established, the first World Disarmament Conference kicked off in Geneva, Switzerland. Sixty countries including members of the League of Nations, the United States, and Soviet Union sent delegates to negotiate the reduction in military armaments worldwide. Those attending came with different goals, leading to long drawn out negotiations. For instance, Great Britain supported specific air proposals including the abolishment of bombing aircraft

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<sup>34</sup> Committee of Imperial Defense, *Extract from the Minutes of the 239<sup>th</sup> Meeting - The Military Situation in Germany*, December 13, 1928, 3, accessed August 5, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-199.pdf>.



(except as policing tools), retention of a “sanctions force” to help combat other countries as needed, the overall reduction of airpower, and the monitoring of civil aviation.

Germany, on the other hand wanted the same rules and weapons capabilities as other nations, which meant the freedom to increase its military capabilities. The Weimar German objective was to repeal and replace Part V of the Treaty of Versailles. This agreement signed after World War I had permanently stripped Germany of its military capabilities including its air force. Conversely, France, which had built up a massive army to protect itself from a potential future German invasion, objected to arms limitations. As noted in a British Cabinet memo from the Secretary of State for Foreign Affairs, “They are, not without reason, terribly afraid of the future and cling to the Treaty of Versailles as their sure shield.”<sup>35</sup>



Figure 2-7. Disarmament Conference, 1933. World Digital Library <https://www.wdl.org/en/item/11592/>.

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<sup>35</sup> *Memorandum By the Secretary of State for Foreign Affairs*, September 27, 1932, 2.

After the July 1932 German elections, the Nazi party became the largest political party in the Reichstag gaining 37.27% of the seats. Over the following months its political objectives shifted leading British officials to evaluate the long-term impacts of German military parity. In *A Military Appreciation of the Present World Situation* the Secretary of State for War, Douglas Hogg, First Viscount Hailsham, concluded that Germany was already preparing to re-arm. Furthermore, he argued the country would emerge as a militaristic state aimed at regaining territory lost in World War I. “If German policy continues on the present lines, it is to be expected that Poland will be attacked when Germany is ready, and that the turn of France will come next. The critical period will probably begin before 1938, if there is a Disarmament Convention; otherwise it may come sooner.”<sup>36</sup> On December 11, 1932, in an attempt to reach consensus on disarmament, an agreement was signed by the major world Powers giving Germany equality at the convention.

On February 28, 1933, after a continued stalled Conference, the British Foreign Office voiced its concerns about the international conflicts between nations and the behaviors, which mirrored those of 1914. In the Cabinet memo *The Crisis in Europe*, the Foreign Office concluded, “We are now being confronted by a Germany more menacing than pre-war Germany, just as post-war Russia is more menacing than pre-war Russia,

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<sup>36</sup> *A Military Appreciation of the Present World Situation*, Secretary of State for War, Douglas Hogg, October 28, 1932, accessed August 8, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-239.pdf>.

and post-war Italy more menacing than the pre-war Italy; while the United States are more impotent than ever – we are drifting.”<sup>37</sup>

In March, Adolf Hitler became the Chancellor of Germany and by May the Foreign Office predicted a potential European war within the next four to five years. The Cabinet memo *The Foreign Policy of the Present German Government*, highlighted the militarization and propaganda of the German government. It also described the illegal creation of a German air force including 125 existing fighting machines and the manufacturing of an additional 36 twin-engine night bombers.<sup>38</sup>

**Table 2-7. German Aircraft Having the Characteristics of Modern Military Aircraft, 1933**

<i>Aircraft Type</i>	<i>In Existence</i>	<i>Under Construction</i>
Single or two-seater fighters	147	35
Bombers (including torpedo bombers and dive bombers)	49	26
General purpose or reconnaissance (potential bombers)	38	4
<b>Total</b>	<b>234</b>	<b>65</b>

Source: Ministerial Committee, *Disarmament Conference, 1932, The German Disarmament Proposals, Technical Aspect*, November 10, 1933, 12, accessed August 5, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-245.pdf>.

On October 14th, the German delegation walked out of the conference and withdrew from the League of Nations. According to the telegram sent by the German Secretary of State of Foreign Affairs, Baron von Neurath, “The failure of the Conference is due solely to the unwillingness on the part of the highly armed states to carry out their

<sup>37</sup> Foreign Office, *The Crisis in Europe*, February 28, 1933, 3-4, accessed August 8, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-239.pdf>.

<sup>38</sup> *The Foreign Policy of the Present German Government*, May 16, 1933, 7, accessed August 8, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-241.pdf>.

contractual obligation to disarm. This renders impossible the satisfaction of Germany's recognized claim to equality of rights."<sup>39</sup> Conversely, Nazism and its aggressive rhetoric made it unfeasible for the Conference attendees to meet German demands. Over the course of the following year, the remaining powers unsuccessfully attempted to craft a compromise to satisfy Germany. With no progress made, the Conference continued to meet periodically until 1937.

After the Conference failure, the idea of a future war became a greater reality. For the remainder of the decade leading up to World War II, Great Britain studied the Nazi regime including its rapid rearmament, violent rhetoric, and the potential impact on its European neighbors. For instance, the growth of Germany's Air Force was closely monitored, and ongoing updates provided to the Cabinet. These numbers measured the potential threat of the German air force and helped build political support for British air defenses.

In July 1933, officials updated civilian casualty assumptions with Germany as the aggressor. The analysis assumed 50,000 civilians gassed or wounded within the first month of a German bombing attack. Likewise, civil defense plans contained updated assumptions about the type and intensity of a bombing attack. *A Memorandum on The Preparation for the Passive Defence of London against Aerial Bombardment* submitted by General Prichard, Air Raid Commandant designate for London, assumed the use of gas, explosive bombs and incendiary devices targeting both military personnel and

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<sup>39</sup> *Withdrawal of Germany From the Disarmament Conference*, Secretary of State for Foreign Affairs, October 17, 1933, 15, accessed August 5, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-243.pdf>.

civilians. Assuming the worst, these predictions aided in the development of an air raid protection strategy for the city. As the report concluded “The intensity of the worst air raid known in the last war must be multiplied over 400 times on the first day and over 200 times on subsequent days to get an idea of the nature of the bombardment. To this must be added gas spraying, gas bombing, and incendiary bombs causing fire on a large scale. A large area of London must be considered as a battlefield and treated as such.”<sup>40</sup>

By February 1934, Great Britain’s military defense planning focused on a response to German aggression. The Defence Requirements Sub-Committee *Report* identified British military deficiencies but assumed military parity was still achievable before Germany fully rearmed. Presumably, German airplanes would attack Britain but on a lesser scale than France. As noted, “Although the distance from Germany to London is much greater than from France, the range of aircraft has increased, and is increasing, so much that attacks on a large scale, especially in the early stages of the war, must be anticipated.”<sup>41</sup> In April 1934, the Foreign Office memorandum *The Future of Germany*, echoed concerns of defense planners and validated German rearmament assumptions including the mass production of aircraft and other war materials, testing of gas dropped from an aircraft, and the training of pilots.

The idea of a future war also extended into the public realm. In January 1934, the British paper the *Daily Mail*, described the impact of the airplane in war. This article

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<sup>40</sup> Committee of Imperial Defence, Sub-Committee on Air Raid Precautions, *A Memorandum on the Preparation for the Passive Defence of London Against Aerial Bombardment*, General Prichard, Air Raid Commandant designate for London, July 20, 1933, 15, The National Archives, Kew, Item CAB 46/6.

<sup>41</sup> Committee of Imperial Defence, Defence Requirements Sub-Committee, *Report*, February 28, 1934, 10, accessed August 8, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-247.pdf>.

reflected the prevailing belief about the destructive nature of aerial warfare and its ability to control and win wars:

Modern aeroplanes with their speed of 200 miles an hour, with their long range of operation and their power of flying by wireless intersectional bearings, hidden from view among the clouds can eliminate all other forms of warlike action whether by land or sea. The nation that is the first to equip itself with an overwhelming force of this most flexible and decisive of all weapons will hold world power in the hollow of his hands.<sup>42</sup>

In November, the Cabinet received additional intelligence about German military preparations including air strength capabilities. In the *German Aircraft Report*, service-ready aircraft numbers were estimated at 2,300 commercial and military planes.

Furthermore, the same document provided information about the number of people employed in aircraft production, location of factories, and monthly output.<sup>43</sup> Another document *Germany Armament Reserves* noted the German government had enough gas and explosives to support a 500 aircraft fleet. However, it concluded that Germany required several more years to equal the French military.<sup>44</sup> While these reports “bought time” for Great Britain to prepare, they further established the potential timing and weapons of a future attack.

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<sup>42</sup> “The Coming of Air War,” January 8, 1934, quoted in Uri Bialer, “Elite Opinion and Defence Policy: Air Power Advocacy and British Rearmament during the 1930s,” *British Journal of International Studies* 6, no 1 (April 1980), 37, accessed July 21, 2020, <http://www.jstor.com/stable/260094>.

<sup>43</sup> Committee of Imperial Defence, Sub-Committee on Industrial Intelligence in Foreign Countries, *German Aircraft Industry* (F.C.I. 67), October 25, 1934, 2, accessed January 31, 2021, [cab-24-251.pdf \(nationalarchives.gov.uk\)](http://nationalarchives.gov.uk/cab-24-251.pdf).

<sup>44</sup> Committee of Imperial Defence, Sub-Committee on Industrial Intelligence in Foreign Countries, *Germany Armament Reserves (excluding Warships and Aircraft)* (F.C.I. 65), October 11, 1934, 7, accessed January 31, 2021, [cab-24-251.pdf \(nationalarchives.gov.uk\)](http://nationalarchives.gov.uk/cab-24-251.pdf).

Five days later, Winston Churchill, then Epping member of Parliament, gave a passionate speech to the House of Commons describing the impact of an aerial bombardment on London and the need for Great Britain to expand its capabilities:

Germany is rearming on land; she is rearming also to some extent at sea; but what concerns us most of all is the rearmament of Germany in the air...the danger of an attack from the air must appear most formidable...No one can doubt that a week or 10 days' intensive bombing attack upon London would be a very serious matter indeed. One could hardly expect that less than 30,000 or 40,000 people would be killed or maimed.<sup>45</sup>

During the same meeting, Stanley Baldwin, Lord President of the Council reduced the level of risk by providing an estimated German military airplane count at between 600 and 1,000 planes. The debate that followed between various members of Parliament drew public attention to the growing threat.

By April 1935, Hitler was declaring air parity with Great Britain and on track to be equal to France.<sup>46</sup> In May he claimed to have 2,500 planes and be on par with France.<sup>47</sup> While Nazi rhetoric could not be trusted as fact, the rapid growth of German rearmament and the risk to Great Britain continued to be important topics for British officials. Moreover, they used the ongoing information to justify the expenses required to expand the RAF and implement civil defense measures.

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<sup>45</sup> House of Commons, *Debate on the Address*, Hansard, U.K. Parliament (November 28, 1934), 858-872, accessed July 24, 2020, [https://api.parliament.uk/historic-hansard/commons/1934/nov/28/debate-on-the-address#S5CV0295P0\\_19341128\\_HOC\\_213](https://api.parliament.uk/historic-hansard/commons/1934/nov/28/debate-on-the-address#S5CV0295P0_19341128_HOC_213).

<sup>46</sup> *The German Air Programme and its Bearing on British Air Strength*, Memorandum by the Secretary of State for Air, April 15, 1935, 1, accessed August 8, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-254.pdf>.

<sup>47</sup> *Air Parity in Western Europe*, Memorandum by the Secretary of State for Air, May 31, 1935, 2, accessed August 5, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-255.pdf>.

The July Sub-Committee of Defence Policy and Requirements in its *Re-Orientation of the Air Defence System of Great Britain Interim Report* referenced aircraft technology enhancements, which challenged British defenses. For instance, the speeds of night bombers grew from 80 miles per hour in 1923 to 200 miles per hour by 1935. Moreover, German bombers now had the capability to travel longer distances. It concluded, “Aircraft operating from the North Sea coast of Germany can now reach the industrial centres in the neighbourhood of the Tyne and the Tees, the big industrial areas in Lancashire and Western Yorkshire and the industrial centres in the Midlands in and around Birmingham.”<sup>48</sup>

During the same year, the impact of modern aerial technology was tested when Italy under the leadership of General Rodolfo Graziani invaded Ethiopia and attacked both military and civilian targets. In addition to explosives, Italian planes dropped grenades and bombs filled with mustard gas. Italian leader Benito Mussolini authorized this action to forcibly end the conflict. “Rome, 27 October 1935 A.S.E. Graziani. The use of gas as an ultima ratio to overwhelm enemy resistance and in the case of counter-attack is authorized”<sup>49</sup>

During a speech to the League of Nations on June 30, 1936, the Ethiopian Emperor described the impact of Italian aircraft spraying gas on the Ethiopian countryside:

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<sup>48</sup> Home Defence Committee, Sub-Committee on the Re-orientation of the Air Defence System of Great Britain, *Interim Report*, January 31, 1935, 9, accessed August 8, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-269.pdf>.

<sup>49</sup> New World Encyclopedia “Second Italo-Ethiopian War,” 2019, accessed July 8, 2020. [https://www.newworldencyclopedia.org/entry/Second\\_Italo-Ethiopian\\_War](https://www.newworldencyclopedia.org/entry/Second_Italo-Ethiopian_War).



Groups of nine, 15, and 18 aircraft followed one another so that the fog issuing from them formed a continuous sheet. It was thus that from the end of January 1936, soldiers, women, children, cattle, rivers, lakes and pastures were drenched continually with this deadly rain. In order to kill off systematically all living creatures in order to more thoroughly to poison waters and pastures, the Italian Command made its aircraft pass over and over again. That was its chief method of warfare. The very realignment of barbarism consisted of carrying ravage and terror into the most densely populated parts of the territory.<sup>50</sup>

By the end of the Italian conquest of Ethiopia, it was estimated that approximately 275,000 Ethiopian military and civilians were killed, many of them from Italian bombing and mustard gas attacks.<sup>51</sup> The use of gas on civilians during this conflict validated British assumptions of a worst-case scenario in the event of an attack.

As tensions increased in Europe, the British strategy for defending the empire reintroduced the risk of a rapid conquest by Germany using civilian air warfare. The February 1936, *Program of the Defence Services Report* addressed the potential of a knock-out blow in its planning. “In view of the enormous increased output capacity of Germany, there is the possibility of an attack so continuous and concentrated and on such a scale that a few weeks of an experience might so undermine the morale of any civilian population as to make it difficult for the Government to continue the war.”<sup>52</sup> In order to

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<sup>50</sup> Special Correspondent. “A Poison Gas Victory Emperor’s Protest.” *The Times*, July 1, 1936, accessed July 8, 2020, <https://www.thetimes.co.uk/archive/article/1936-07-01/16/2.html?region=global#start%3D1784-12-31%26end%3D1984-12-31%26terms%3Dmustard%20gas%20ethiopia%201935%26back%3D/tto/archive/find/mustard+gas+ethiopia+1935/w:1784-12-31%7E1984-12-31/1%26next%3D/tto/archive/frame/goto/mustard+gas+ethiopia+1935/w:1784-12-31%7E1984-12-31/2>.

<sup>51</sup> Michael Clodfelter, *Warfare and Armed Conflict: A statistical Reference of Casualty and Other Figures, 1618-1991* (Jefferson, North Carolina: McFarland and Company Publishers, 2017), 382.

<sup>52</sup> Committee of Imperial Defence, Sub-Committee of the Defence Services, *Programmes of the Defence Services*, February 12, 1936, 9, accessed August 8, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-256.pdf>.

combat this risk, defense planners advocated for the vigilance and readiness of the Government, Foreign Office, and Defense Departments.

In April 1937, the British Sub-Committee on Air Raid Precautions Services published a report, outlining the expansion of German bombing capabilities. The revised statistics provided by the Air Staff estimated that by 1939 Germany hypothetically could drop 600 tons of bombs per day on Great Britain for the first few weeks of an offensive. This estimate assumed a 30 percent reduction in bombs dropped due to British counter attacks. Furthermore, it projected over 3,500 tons would be released during the first 24-hours. In addition, bomb types included explosives, incendiaries, or gas, with explosives representing the largest number.

**Table 2-8. German Air Raid Bomb Types, 1937**

<i>Bomb Type</i>	<i>Percentage Dropped</i>
<i>Explosive</i>	50%
<i>Incendiary</i>	25%
<i>Gas</i>	25%

*Source:* Terence O'Brien, *History of the Second World War: Civil Defence* (London: HMSO, 1955), 144, accessed January 30, 2021, <https://ia800603.us.archive.org/21/items/HistoryOfTheSecondWorldWarCivilSeriesCivilDefence/obrien-civil-defence.pdf>.

The Sub-Committee also established an estimated casualty number based upon World War I statistics of 50 casualties per ton of bombs (17 killed and 33 wounded). Based upon these assumptions, weekly 200,000 civilians would be wounded or killed (66,000 killed and 140,000 wounded).<sup>53</sup> As referenced in the report:

A comparison of this estimate with what actually occurred during the last War, when the total weight of bombs dropped on the whole country throughout the war

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<sup>53</sup> Committee of Imperial Defence, Sub-Committee on Air Raid Precautions Services, *Report*, June 30, 1937, 4, accessed May 31, 2020 <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-270.pdf>.

was under 300 tons, and did not exceed 5 tons in any one period of twenty-four hours, brings into strong relief the magnitude of the problem which confronts us to-day. Moreover, we have now to think in terms, not only of an increased scale of attack, but of new methods of attack for which past experience affords no precedents.<sup>54</sup>

In July of the same year, British Home Secretary Sir Samuel Hoare met with a group of local authorities to discuss the costs involved with Air Raid Precautions. In that meeting he highlighted the significant technology changes in aviation and air warfare since World War I and the astronomical impact in the event of an attack. Hoare offered “I know that there are a number of people in the country who say here, now, is a problem so formidable, so intractable, so inscrutable, that is not is not worth doing anything to meet it at all, that whatever we do the air attack will be able to get through and the measures of defence will be ineffective...I do not take the view that defence against air attack is hopelessly ineffective.”<sup>55</sup> Although Hoare made these comments as a way to build support for his agency, he highlighted the fears surrounding a German bombing attack.

As Britain continued to accelerate its defense preparations, conflicts in Europe reaffirmed German capabilities. In 1936, the Spanish Civil War erupted between the existing Republican government and the Nationalists led by General Francisco Franco. This conflict lasting until 1939, polarized Europe as countries either picked sides or adopted a non-intervention strategy. As noted in a memorandum by British Secretary of

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<sup>54</sup> Committee of Imperial Defence, Sub-Committee on Air Raid Precautions, *Report*, 4.

<sup>55</sup> Committee of Imperial Defence, Sub-Committee on Defence Policy and Requirements, *Financial Aspects of Air Raid Precautions*, March 1937, 2, accessed May 31, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-269.pdf>.

State for Foreign Affairs “The Spanish civil war has ceased to be an internal Spanish issue and has become an international battle ground.”<sup>56</sup> While Britain formally recognized the Republican government and remain neutral in the conflict, Germany and Italy sided with the Nationalists and provided over 200 aircraft in support of their cause.

During 1937 and 1938, air raids on Spanish targets resulted in thousands of civilian deaths. Moreover, German-supported bombing attacks on Guernica (April 1937) and Barcelona (March 1938) further supported British official potential casualty estimates. While exact counts in Guernica are unknown, estimates indicate between 250 and 300 people died or five percent of the town’s population. In Barcelona, an additional 2,500 people were killed.



Figure 2-8. Spanish Civil War: the Spanish town of Guernica, after the bombing by German and Italian aircraft, 1937, Kennedy Hickman, "Spanish Civil War: Bombing of Guernica," ThoughtCo. May 13, 2017, <https://www.thoughtco.com/spanish-civil-war-bombing-of-guernica-2360536>.

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<sup>56</sup> *Spain*, Secretary of State for Foreign Affairs, January 8, 1937, 1, accessed August 8, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-267.pdf>.

In *La destrucción de Guernica: un balance sesenta años después* written in 1997, author César Vidal Manzanares describes the bombing campaign against Guernica and impact on its citizens:

The tactic used by the Germans in Guernica had consisted in first dropping high explosive bombs followed by incendiary bombs. Meanwhile they machine-gunned civilians...This brutal combination meant that when the German planes left the town, the drama had hardly begun. In fact, its destruction was yet to be consummated by the incendiary bombs or those bombs whose explosion was delayed...The secondary impact of the German bombardment was revealing, in no uncertain terms, the brutality of modern warfare unleashed on a defenseless population lacking anti-aircraft protection.”<sup>57</sup>

German bombing tactics used in Guernica and Barcelona and Guernica’s utter destruction with seventy-one percent of its buildings destroyed, highlighted Britain’s potential defenselessness in an air attack.

In May 1938, a British Air Raid Protection (A.R.P) pamphlet titled *Lessons from Barcelona* was published offering both British authorities and citizens information about the attacks on Barcelona and the civil defense actions taken. According to the pamphlet, during a forty-eight-hour attack on Barcelona from March 16-18, the following occurred:

60 attacking aeroplanes dropped 41 tons of explosives, 350 explosions being counted.  
1,000 people were killed.  
1,700 people were injured.  
48 large buildings were totally destroyed.  
100 buildings were partially destroyed including 16 theatres and cinemas.<sup>58</sup>

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<sup>57</sup> César Vidal Manzanares, *La destrucción de Guernica: un balance sesenta años después*. trans Peter Miller (Madrid: Espasa, 1997), Chapter 9, accessed September 23, 2020, <http://www.buber.net/Basque/History/guernica-ix.html>.

<sup>58</sup> Major N. de P MacRoberts, *A.R.P. Lessons from Barcelona: Some Hints for Local Authorities and for Private Citizens*, May 1938, 9, The National Archives, Kew, Item MEPO 2/3632.

This attack resulted in 66 people wounded or killed per ton of bombs, which highlighted the devastation of aerial warfare.

In August of 1938, British Intelligence compiled a summary of the impacts of the air raids in Spain as a baseline for its own defense preparations. The *Monthly Intelligence Report* included information about the types of aircraft used, formations, and bombing speed and height. It also described the types of bombs used and the damage inflicted. According to the report, attackers dropped larger high explosive bombs and incendiary devices with bombs causing more damage to buildings. Furthermore, while the air raids primarily destroyed strategic targets, in Barcelona wholesale bombing of civilians occurred. This resulted in an overall Spanish casualty rate of 18 people killed with an additional 20 wounded per ton of bombs dropped.<sup>59</sup> Spain's civilian death rate correlated with British estimates, which further validated official assumptions and planning efforts.

As Germany maintained its acceleration of aircraft production, Great Britain continued to focus on the potential of an early knock-out blow from the air and defense preparations emphasized air parity. For instance, in February 1938, the Minister for Co-ordination of Defence estimated Germany's bomber strength at 1,350 aircraft. By year-end 1939, this was expected to grow to approximately 1,458 machines with a total air

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<sup>59</sup> Air Raid Precautions Department, Intelligence Branch, *Monthly Intelligence Report (No. 231), Effects of Air Raids in Spain and China*, August 15, 1938, 5, The National Archives, Kew, Item CO 323/1592/66.

strength of 3,240. In contrast, Great Britain had a significant deficit with only 1,022 bombers and a total projected air strength of 1,736.<sup>60</sup>

As Europe edged closer to war, the significance of air power and perceived lack of parity, influenced British foreign policy. In 1938, while evaluating how to respond to the German annexation of the Sudenland in Czechoslovakia, officials believed it unwise to intervene. Based upon intelligence gathered, they estimated that Germany could drop 500 to 600 tons of bombs per day on Great Britain for the first two months of an attack. Conversely Britain and France together only had the capability of 300 tons combined.<sup>61</sup> If provoked, Germany would successfully attack the allies. As a result, they avoided a confrontation over Czechoslovakia.

On September 1, 1939, Germany invaded Poland and launched air raids at both strategic military and industrial targets and civilians. According to a German communication dated September 13, any town or village resisting German armed occupation would be bombed. The British Chiefs of Staff Committee memo *German Observance of International Law* noted “During the past few days the Germans have adopted tactics of deliberate and indiscriminate bombing of open towns repeatedly during the same day, with the obvious object of demoralising the civilian population.”<sup>62</sup>

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<sup>60</sup> *Defence Expenditure in Future Years*, Further Report by the Minister for Co-Ordination of Defence, January 21, 1938, 19, 23, accessed August 13, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-274.pdf>.

<sup>61</sup> *Appreciation of the Situation in the Event of War Against Germany*, September 14, 1938, 356, accessed July 25, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-278.pdf>.

<sup>62</sup> Chiefs of Staff Committee, *German Observance of International Law*, September 14, 1939, 2, accessed August 13, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-66-1.pdf>.



Figure 2-9. The bombing of Warsaw: view from a German Junker Ju 52 bomber of smoke rising over the outskirts of the city, Imperial War Museum, HU 3218, <https://www.iwm.org.uk/collections/item/object/205015969>.

On September 3, 1939, Great Britain declared war on Germany and officials continued refining their home defense plans. As German aggression swept across Europe, the grim prospect of what could occur became a reality. In April 1940, British planners increased the bombing risk to a total of 950 tons of gas and explosives dropped per day<sup>63</sup> Based upon these projections, the Ministry of Health updated casualty estimates to 600,000 civilians killed and an additional 1.2 million wounded during the first 6 months of a German bombing campaign.<sup>64</sup>

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<sup>63</sup> O'Brien, *Civil Defence*, 172.

<sup>64</sup> Constantine FitzGibbon, *The Winter of the Bombs: The Story of the Blitz of London*. (New York: W.W. Norton & Company, Inc., 1957), 267-268, accessed January 30, 2021, 7, <https://ia902704.us.archive.org/13/items/winterofthebombs010956mbp/winterofthebombs010956mbp.pdf>.



**Table 2-9. Summary Estimated Civilian Air Attacks and Casualties, 1924-1940**

	<i>1924</i>	<i>1933</i>	<i>1937</i>	<i>1940</i>
<b>Enemy</b>	France	Germany	Germany	Germany
<b>Initial Attack</b>	200 tons 1st 24-hrs. 150 tons 2 <sup>nd</sup> 24-hrs.		3,500 tons 1st 24-hrs.	3,500 tons 1st 24-hrs.
<b>Initial Casualties</b>	3,825 killed/11,250 wounded 1st 72 hrs.		59,500 killed/115,500 wounded	47,500 casualties
<b>Ongoing Attack</b>	100 tons per day		600 tons daily 1st few wks.	950 tons per day
<b>Ongoing Casualties</b>	25,000 killed per mo.	25,000 killed /50,000 gassed or wounded	66,000 killed/ 200,000 wounded per wk.	600,000 killed/1.2 mil wounded six mos.

Decades-long beliefs about the changing nature of war and the impact of aerial bombing helped define the British defense strategy as they prepared for invasion. Assumptions of a prolonged German bombing campaign utilizing explosives, incendiary devices, and gas helped fuel civilian air raid precautions in the months to come.

### **Chapter 3 – Policy and Preparation Pre-Blitz Civil Defense Planning**

British Air Raid Precautions (ARP) measures represented one aspect of the larger defense of the nation. With the idea that “the bomber will always get through,” civil defense planning coincided with efforts to build up the air force and anti-aircraft capabilities. Expecting a significant number of lives lost, officials worked to minimize civilian casualties where possible. Moreover, anticipating wartime production needs, defense planning necessitated that factory workers remain on the job. In 1937, an Imperial Defence Sub-Committee chaired by Sir Warren Fisher summarized ARP goals as follows:

- (a) to maintain the morale of the people;
- (b) to ensure the continued functioning of the activities which are vital to the effective prosecution of the war and the life of the community;
- (c) to reduce to a minimum the destruction of life and property likely to be produced by air raids.<sup>1</sup>

These objectives highlighted the assumptions about the future of war in, which civilians would be critical to Great Britain’s success.

This chapter will outline the British civil defense efforts from the end of World War I until the beginning of the Blitz in 1940. It will describe the Government’s preparations for a civilian bombing attack and the programs implemented, including the shelter program, air raid warning system, and fire defense. Moreover, this chapter will also address the complications associated with implementing Air Raid Precautions

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<sup>1</sup> *Report of the Warren Fisher Committee on Air Raid Precautions Services*, Warren Fisher, July 3, 1937, 3, accessed May 31, 2020 <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-270.pdf>.

especially the lack of funding and competing resource needs between the military and Air Raid Precautions. Furthermore, it will discuss the decentralized approach to planning, the burden placed on local governments and businesses, and legislation passed to ensure the compliance of Government policies.

British air raid precautions planning began in the early 1920s, when its leaders recognized the future impact of aerial bombardment against civilians. To address the need for civil defense, in 1924, the Committee of Imperial Defence established a sub-committee comprised of members from the Admiralty, War Office, Air Ministry, Ministry of Health, and Office of Works to research the question of air raid precautions. This committee compiled information about World War I bombing raids and their effect on essential services and worker productivity along with bomb damage information and casualty statistics to develop a recommended civil defense approach.

In June 1924, the sub-committee published a report describing the impact of air raids on the transportation, economy, and morale of the British people during World War I. Using a series of interviews and business production statistics, the *Effects of Aerial Attack on the United Kingdom During the Great War* offered details about how civilian attacks could impact Britain's ability to win a future conflict. For example, data from the Great Western Railroad Company suggested a single raid resulted in aggregate passenger train delays of 195 hours and supply delays of 650 hours.<sup>2</sup> Furthermore, in the event of an invasion, train delays meant a slowdown in the movement of troops critical to

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<sup>2</sup> Committee of Imperial Defence, Subcommittee on Air Raids Precautions, *Effects of Aerial Attack on the United Kingdom During the Great War*, June 18, 1924, 1, The National Archives, Kew, Item CAB 46/3.

defending the coast. The report also identified public safety issues due to the added congestion. During one raid, 3,000 to 4,000 people waited at Victoria Station for the trains to resume. “Under such conditions as these there were possibilities of an appalling loss of life had bombs actually been dropped in the midst of so great a crowd of people.”<sup>3</sup>

The report also examined the economic impact of raids on a community. Using the seaside town of Margate as an example, after it was bombed in 1916, tourists avoided the town for the rest of the war. The loss of income drove 14,000 of the 30,000 residents from the community in search of work with those remaining dependent on charitable assistance. In addition, the report highlighted the loss of productivity due to civil defense policies, civilian panic, and loss of morale. According to Mr. Lloyd, Secretary, Iron and Steel Institute the effect of German air raids in 1918 resulted in a weekly reduction in pig-iron output in the Cleveland District from 50,000 to 20,000 tons. This was due to the Government air raid requirement of dousing the blast furnaces.<sup>4</sup>

Another interview with Mr. H. M. Selby, Managing Director of Schneiders and Son (largest clothing manufacturer in England and Government clothing contractor) described the panic of workers. “The general result of a single raid or even a warning was that the factories ceased to work for twenty-four hours, as workers could not be induced to return that day. If the raid took place a night, the work for the ensuing forty-eight hours was seriously affected.”<sup>5</sup> Mr. Selby attributed it to a workforce of

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<sup>3</sup> Committee of Imperial Defence, *Effects of Aerial Attack*, 1.

<sup>4</sup> Committee of Imperial Defence, *Effects of Aerial Attack*, 5.

<sup>5</sup> Committee of Imperial Defence, *Effects of Aerial Attack*, 5.

predominately women and resident aliens. In addition, the company's factories were all located in the East End and offered no shelter for employees. As evidence, during a month of continuous raids in September 1917, production fell from 40,000 to under 5,000 suits of clothing per week per factory. Representatives from other clothing manufacturers Lottery and Co. and the Army Clothing Factory validated Selby's comments. They asserted that for the clothing industry and any other commerce located on the East End of London, heavy bombing raids would result in the stoppage of all manufacturing.

In July 1925, the sub-committee led by Sir John Anderson put forth a series of recommendations including the development of a public warning system, establishment of lighting restrictions, maintenance of vital services, provisioning of volunteer personnel, protection of the food supply, expansion of medical and ambulance services, fire and damage clearing and repair, shelter provisioning, creation of anti-gas measures, and evacuation plans. Its Sub-Committee on Air Raid Precautions *Report* also outlined ARP responsibilities of various government departments and the required next steps for preparing a civil defense strategy. For instance, the Office of Works was accountable for rendering public buildings "gas-proof" while the Ministry of Health coordinated the medical treatment of casualties. The sub-committee concluded that further research was needed, and it recommended a permanent standing committee be established. "The ground covered by this report can only be regarded as a preliminary survey of the very wide area comprised within our terms of reference. Before any comprehensive plan of

protection for the civil population...can be adopted a vast amount of detailed work will be necessary.”<sup>6</sup>

Over the next few years, the standing committee commissioned several studies to identify the impact of bombs and gas on various types of structures. It also provided an annual progress update to the Committee of Imperial Defence, although, there was a lack of substantial progress during the remainder of the decade. In the *Fourth Annual Report* November 1928, the sub-committee commented on the delay in providing a detailed civil defense blueprint. “Having regard, however to the wide field covered by our terms of reference, and to the fact that all of the personnel employed have other duties and engagements of more immediate importance to attend to, it will be appreciated that some considerable time must elapse before all the request schemes can be drafted and coordinated with one another and a comprehensive plan submitted for approval.”<sup>7</sup> Air Raid Precautions, while important, received neither funding nor priority in this period of relative peace in Europe. During the mid-1920s European nations focused on diplomatic ways to settle conflicts and military budgets were cut. In addition, Great Britain still had war debts to pay and cash shortfalls after the Great War.

During the early 1930s, British leaders conducted slow and secretive civil defense planning. Although several countries in Europe were openly speaking about their ARP plans, British officials concerned about jeopardizing World Disarmament Conference

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<sup>6</sup> Committee of Imperial Defence, *Report*, 22.

<sup>7</sup> Committee of Imperial Defence, Sub-Committee on Air Raid Precautions, *Fourth Annual Report*, November 15, 1928, 3, accessed September 9, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-199.pdf>.

negotiations and generating a public uproar, kept theirs private. Moreover, financial challenges hindered civil defense efforts as Depression era social programs, shrinking tax revenues, and military growth due to German rearmament strained Government resources. As O'Brien states "The 'Great War' of 1914-1918 had caused an unprecedented drain on the country's economic and financial resources...recovery from which in the 1920's and 30's proved slow and difficult. On the moral plane the national exhaustion, though harder to measure, was probably as great...Neither the material resources nor the will for re-armament were readily available."<sup>8</sup> In November 1932, during a Parliament debate on disarmament, Stanley Baldwin addressed the need to protect the civilian population from aerial bombardment. In March 1933, Prime Minister Ramsay MacDonald further acknowledged the existence of ARP planning. As quoted in the *Times*, "One of the main objects of the abolition of bombing is to guarantee the safety of the civil population. Independently of this, we are taking precautions in this country to safeguard the civil population, as far as possible, against air attack."<sup>9</sup>

With a limited budget, civil defense efforts focused on decentralized planning and assumed tradeoffs between safety and cost. This meant potentially risking civilians in order to save the nation as a whole. While the Government concentrated on military preparations the financial and logistical burden of civil defense fell to local communities.

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<sup>8</sup> Terence O'Brien, *History of the Second World War: Civil Defence* (London: HMSO, 1955), accessed January 30, 2021, 6, <https://ia800603.us.archive.org/21/items/HistoryOfTheSecondWorldWarCivilSeriesCivilDefence/obrien-civil-defence.pdf>.

<sup>9</sup> Correspondent, "House of Commons – Bombing of Civilians," *Times*, March 28, 1933, The Times Digital Archive.

According to O'Brien "'Total War' would be met, in the first instance, by democratic self-help, with responsibility placed squarely on each local community and factory to take the major part in organising its own defences."<sup>10</sup> With support from Westminster, officials believed that local authorities could better anticipate and respond to the needs of its citizens. However, for many boroughs this proved to be a formidable task and derailed progress. Nevertheless, until the late 1930s civil defense efforts remained a local community responsibility.

In order to help coordinate civil defense efforts across Great Britain, in 1935 the Government established the Air Raid Precautions Department. In addition, Westminster took responsibility for providing protective clothing including gas masks to civil defense and government workers and medical equipment and supplies to communities. In July of the same year, the government issued the Home Office and Scottish Office circulars communicating local ownership of civil protection. "The Government will issue general instructions based on expertise of the problem and will be ready to give technical and administrative advice and to afford financial assistance...but responsibility will rest on local authorities for ensuring that adequate measures of civil protection against air raid dangers are taken in their own districts."<sup>11</sup>

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<sup>10</sup> O'Brien *Civil Defence*, 284.

<sup>11</sup> Air Raid Precautions Services, *Report*, 7.



**Table 3-1. Air Raid Precautions Responsibilities, 1935**

	<i>Government</i>	<i>Local Authorities</i>	<i>Employers</i>
<b>General ARP</b>	Develop Air Raid warning plan	Implement plan: Treatment of casualties Decontamination civilians and property Rescue Emergency communication systems Maintenance of public systems Road repairs, clean up	Comply with plan
<b>Lighting</b>	Define lighting restrictions	Implement lighting scheme	Comply with restrictions
<b>Bombs/ Gas</b>	Provide Technical advice - Protecting buildings from a bomb attack	Protect public buildings from bomb blasts and provide demonstrations on how to protect private homes	Protect company premises and employees from bombs and gas
<b>Resources</b>	Stock and supply respirators and protective clothing for ARP workers, hospital equipment and supplies, bleach powder	Recruitment and training of volunteers, augment Police and Fire Services	Employee fire squads and first aid services.
<b>Training/ Education</b>	Administrative advice to local authorities on ARP, employers on the protection of their businesses, civilians on what to do in an air attack	Organize public lectures and classes on anti-gas and ARP actions	

Source: *Air Raid Precautions*, Home Secretary, May 24, 1935, 8, accessed August 27, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-255.pdf>.

The proposed ARP budget of approximately £100,000 for the 1935-1936 fiscal year reflected this strategy and contrasted sharply with projected military expenditures of

£1,274 billion.<sup>12</sup> This modest budget made it problematic for the Government to assume ownership of most civil defense tasks and as a result, funds were mainly allocated to planning activities versus implementing specific programs. Furthermore, officials presumed individual communities and businesses would manage their own expenses.

**Table 3-2. Projected Air Raid Precautions Budget – 1935-1936 Financial Year**

<i>Budget Item</i>	<i>Cost</i>
Provisions for respirators, mainly for training purposes	£40,000
Maintenance of the Chemical Defense Research Department (10 percent of budget)	£15,000
Administrative Services	£7,000
Experiments in connection with the penetrative effect of high explosive bombs, the behavior of gas in confined areas, and exercises for the public	£30,000

Source: Cabinet (46), *Meeting Minutes*, December 12, 1934, 20, accessed April 10, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-23-80.pdf>.

Government officials however, continuously monitored and weighed the political ramifications of earlier decisions and adjusted the budget accordingly. For example, during the October 23, 1935 Cabinet meeting, the Home Secretary described the public interest in air raid precautions, especially in the east end of London. He commented that “Questions had been asked as to whether air raid precautions would give protection to the rich and not the poor...if the question was raised at Election time an appropriate reply might be that a simple and appropriate respirator had been designed, and in the event of air raids would be provided free to all persons in areas liable to attack.”<sup>13</sup> Consequently,

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<sup>12</sup> “Burden on Taxpayer Arms and Budget,” *Reynolds Newspaper*, March 24, 1935, British Newspaper Archive.

<sup>13</sup> Cabinet (48), *Meeting Minutes*, October 23, 1935, 18, accessed September 9, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-23-82.pdf>.

Westminster assumed the cost and responsibility of providing respirators for all civilians. Authorities also continued to monitor comments made by the press as they sought to balance cost with public relations.

By December 1936, British air raid precautions were in varying levels of readiness. A report provided by the Air Raid Precautions Department to the Committee of Imperial Defence outlined deficiencies in multiple categories including a shortage of volunteer personnel and a lack of medical equipment. Furthermore, several plans had not been completed and were still in development.

**Table 3-3. Air Raid Precautions Estimated Preparations by May 1937**

<i>ARP Activity</i>	<i>Requirement</i>	<i>Readiness</i>
<i>Respirators</i>	Provision of 600k to local services, 900k to air raid workers, 30 mil general population	25% completed
<i>Shelters</i>	Plan to address protecting the public	In process – No conclusions
<i>Training</i>	Gas Courses Fire and Police	80% regular forces trained
<i>ARP Volunteer Recruitment</i>	Minimum 360k volunteers recruited and trained	St. John Ambulance Brigade and Association, Scottish Red Cross trained. Numbers significantly short.
<i>Essential Public Services</i>	Maintenance of gas, water, electricity, transportation, communications	In process – No conclusions
<i>Medical Arrangements</i>	Provision of stretchers, transport, equipment, and stores	No material progress due to lack of finances
<i>Warnings</i>	Warning system available to the entire country	A portion of the system and personnel in place

Source: Data compiled from Home Office, Air Raid Precautions Department, *Memorandum on the Position of Air Raid Precautions by the Spring of 1937*, John Simon, December 31, 1936, 2-8, accessed September 9, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-268.pdf>.

Home Secretary Sir John Simon confirmed the delays in British Air Raid Precautions and expressed a lack of confidence in the ability to meet ARP goals dates:

Limited precautions could be put into effect throughout the country (by May 1937), and if they achieve little else, they should be the means of allaying general panic, but no guarantee can be given that the life of the community and the business of government will not be disorganized. There is a great deal of ground to be covered and much to be achieved before any real degree of preparedness can be attained and this latter could not possibly be guaranteed within the next six months.<sup>14</sup>

As the German threat grew, British civil defense activities accelerated and expenditures correspondingly increased. By March 1937, the projected cost of civil defense had increased significantly from the £100,000 budget in 1935 to over £37.64 million plus an additional £1.3 million per annum.<sup>15</sup> This number included a split between government, local, and industry expenditures with Westminster absorbing approximately 60 percent of the costs and providing loans to help assist with the remainder. Moreover, as reflected in the detailed expenses projections below, the increase in Government expenditures reflected a shift in policy from a decentralized approach to one in which ARP personnel coordinated and controlled many aspects of civil defense.

**Table 3-4. Projected Air Raid Precautions Annual Cost Estimates, March 1937**

<i>Annual Expenditure</i>	<i>Government Share (£)</i>	<i>Local Authorities Share (£)</i>	<i>Per Year (£)</i>
Staff Organization/Training	450,000	300,000	50,000
Fire Brigade Services	330,000	220,000	550,000
<b>Total</b>	<b>780,000</b>	<b>520,000</b>	<b>1,300,000</b>

*Source:* Committee of Imperial Defence, Sub-Committee on Defence Policy and Requirements, *Financial Aspects of Air Raid Precautions*, March 23, 1937, 10, accessed May 31, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-269.pdf>.

<sup>14</sup> Air Raid Precautions, *Memorandum on the Position of Air Raid Precautions*, 9.

<sup>15</sup> Committee of Imperial Defence, *Financial Aspects*, 19.

**Table 3-5. Projected Air Raid Precautions One Time Cost Estimates, March 1937**

<i>Capital Expenditure</i>	<i>Government (£)</i>	<i>Local Authorities (£)</i>	<i>Businesses (£)</i>	<i>Total (£)</i>
Protection of public buildings	1,200,000	1,300,000		2,500,000
Provision of special buildings	1,577,000	2,703,000		4,280,000
Fire Brigade Services	5,500,000	1,700,000		7,200,000
Special equipment	717,000	343,000		1,060,000
Hospitals	2,100,000	500,000		2,600,000
Provision of sandbags	2,000,000			2,000,000
Gas training, equipment	5,372,820			5,372,820
Other Equipment	119,000			119,000
Warning and intelligence	160,000			160,000
Other Miscellaneous	2,348,180			2,348,180
Protection of vital services	5,000,000			10,000,000
<b>Total</b>	<b>26,094,000</b>	<b>6,546,000</b>	<b>5,000,000</b>	<b>37,640,000</b>

*Source:* Committee of Imperial Defence, *Financial Aspects*, 10.

During the same month, the Home Secretary alerted the Cabinet to the need for Air Raid Precautions legislation. He argued that expenses tied to civil defense should be allotted appropriately and legislation would also assist local authorities who were spending money on ARP efforts without the necessary legal authority. As noted in John Simon's memo *Air Raid Precautions: Need for Legislation* "Now that the stage is being reached at which heavy financial liabilities must be incurred in the execution of local schemes, misgivings as to the legal position are already tending to impede progress."<sup>16</sup>

In April, the Prime Minister established a sub-committee to evaluate the current ARP activities including the nature and scale of preparations, role of local versus Government authorities, and to recommend any adjustments to departmental

<sup>16</sup> *Air Raid Precautions, Need for Legislation*, Home Secretary, March 19, 1937, 2, accessed September 9, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-269.pdf>.

responsibilities. Its goal was to either validate the existing plan or recommend adjustments to the approach. The sub-committee's *Report* published June 1937, defined Air Raid Precautions as a part of the larger effort to win the war with a goal to reduce the loss of people and property yet balance the needs of active and passive defense. The report stressed:

It is impossible to secure anything approaching 100 per cent security by passive defence measures...the cost of provision of bomb-proof underground shelters for the population in the danger zone alone, has been estimated as approximately £1,500 million...while it is impossible to provide anything like 100 per cent protection against air raids, it is essential to ensure that a reasonable degree of protection is afforded in the light of the weight of attack likely to be encountered.<sup>17</sup>

In addition, the document concluded that implementing ARP measures needed to remain with local authorities as the centralization of functions would overwhelm the Government.

The sub-committee did, however, identify the need to add additional resources and structure to the existing Air Raid Precautions Department. As noted, "We are convinced that in time of war it will be necessary for the Central Authority to assume a greater measure of control and that it may well be necessary to place the Department under a special Minister. We therefore recommend the preparation in time of peace of an administration organization with this in view."<sup>18</sup> This new structure divided the country into twelve regions led by a Regional Commissioner. ARP teams within each region coordinated civil defense activities and resources with local authorities. In the event of

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<sup>17</sup> *Report of the Warren Fisher Committee*, 4.

<sup>18</sup> *Report of the Warren Fisher Committee*, 10.

an invasion, each Regional Commissioner was responsible for implementing and managing British civil defense measures within his area.

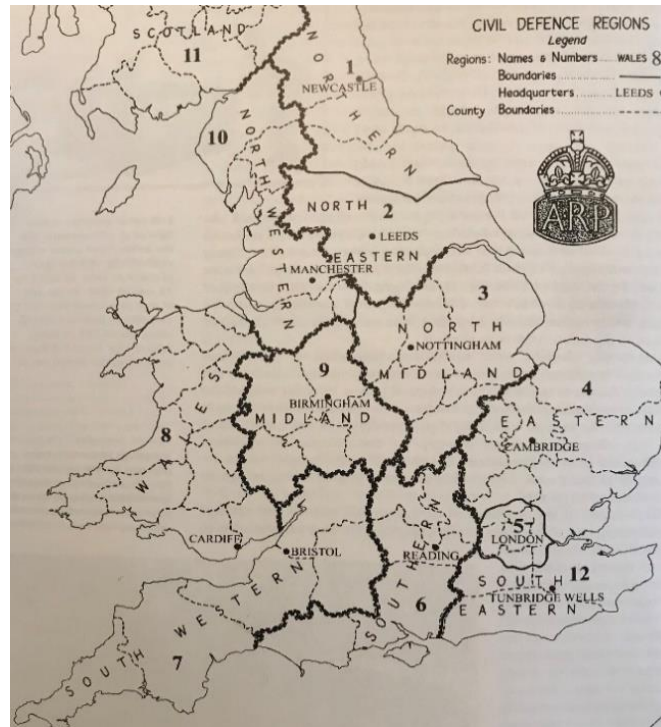


Figure 3-1. Civil Defence Regional Boundaries and Headquarters, Martin Brayley, *The British Home Front 1939–45* (London: Bloomsbury Publishing, Jan 1, 2006), 6.

As the expenses associated with Air Raid Precautions grew, Westminster and local officials disagreed over the financial ownership of civil defense. Communities contended that the Government should be responsible for one hundred percent of the costs like other wartime activities. In response, Westminster countered that communities were better suited to manage civil defense preparations for their area and should therefore pay fifty percent of the cost. During a July 1937 meeting between local authorities, the Home Secretary, and the Secretary of State for Scotland, local spokesperson Herbert Morrison argued that if communities owned a portion of the expense, they had the right

to debate the need and delay the implementation of important measures. Conversely, he asserted “If the State pays the 100 per cent the State must have the right of direction...it must decide what is to be done, and we cannot as local authorities argue as to whether your proposals are adequate or inadequate.”<sup>19</sup> In addition, during the meeting he addressed the potential negative voter impact during elections if ARP expenditures resulted in a local authority restricting its social programs.

In September 1937, Home Secretary Sir Samuel Hoare recommended a final division of expenses between the Government and local authorities shifting most of the costs to the State. In the memorandum *Allocation of Cost Between Exchequer and Local Authorities*, he expressed the importance of resolving the division of ARP expenditures. Hoare also shared his concern that a lack of resolution would result in continued negotiation and gridlock with those demanding the authorities pay for one percent of ARP expenses:

There are many people who realize that the demand for 100 per cent. is untenable, but these people share the wide-spread view that the financial burden involved by the need of National Defence ought to be borne centrally rather than locally and consider, therefore, that the Government grant should cover a very high proportion of the cost. Unless and until the Government announces terms which seem reasonable to these more moderate people they will continue in alliance with the extremists who are demanding 100 per cent...The longer this alliance continues the stronger it is likely to become. Every week’s delay strengthens this united front.<sup>20</sup>

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<sup>19</sup> *Air Raid Precautions, Expenditure*, Samuel Hoare, Home Secretary, July 26, 1937, 15, accessed September 15, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-271.pdf>.

<sup>20</sup> *Air Raid Precautions, Allocation of Cost Between Exchequer and Local Authorities*, Samuel Hoare, Home Secretary, September 24, 1937, 1-2, accessed September 15, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-271.pdf>.



He went on to recommend a simple method of allocating expenses as well as “generous” terms to ensure everyone knew the Government understood and was supporting ARP efforts to the best of its ability.

As part of this compromise, the State absorbed the cost of one hundred percent of fire appliances and other equipment, decontamination and rescue equipment and supplies, casualty clearing hospitals, stretchers and blankets, fittings for obscuring street lighting, anti-gas training schools, bleaching powder, respirators, and protective clothing, and a reserve of sandbags. Furthermore, only twenty-five percent of the remaining costs were to be funded at the local level, with loans or grants available from the Government to help with the cash outlay.

In October 1937, the Cabinet received an increased Air Raid Precautions budget, reflecting added expenses, delays in completing civil defense measures, and the new allocation of expenses between the Government and local communities. Growing German air raid estimates were also reflected in increased ARP provisioning costs due to expanded civil defense requirements. For example, in *Defence Expenditure in Future Years*, expenses included additional fire brigade equipment and supplies. Moreover, the budget assumed, the timing for delivery of all materials would continue until at least March 1942. In addition, cost estimates reflected grants to local authorities equaling 67.5% of total costs with Government expenditures over a five year period of approximately £38.9 million.

**Table 3-6. Air Raid Precautions Budgeted Expenses 1937-1942**

<i>Fiscal Year</i>	<i>Government Expense (£)</i>
1937-1938	5,215,500
1938-1939	11,345,000
1939-1940	9,683,000
1940-1941	9,618,000
1941-1942	5,577,000

*Source: Defence Expenditure in Future Years, October 1937, 12, accessed September 15, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-272.pdf>.*

To ensure compliance with civil defense efforts, Parliament passed the Air Raid Precautions Act of 1937 requiring each county establish an ARP plan, coordinate emergency services, and train volunteers. Each local scheme approved by Air Raid Precautions personnel was to include local provisioning of first aid posts, the clearing of casualties, hospitals, and fire and police services. Moreover, the legislation provided clear delineation between the functions of the Government and local authorities around the evacuation of civilians. For example, the responsibility of evacuating vulnerable citizens rested with Westminster whereas local authorities had accountability for providing information and carrying out Government direction.

The Civil Defence Act passed in July 1939, clarified outstanding items from the Air Raid Precautions Act. According to a 1941 ARP pamphlet, “This dealt with all questions outstanding in matters of the erection of public shelters, ARP Industrial plants, offices, and factories and the protection of employees in industry. It allotted administrative powers and financial responsibility. Local Authorities were instructed to furnish information required for carrying out evacuations, and to take all measures to

facilitate Government action.”<sup>21</sup> Within a relatively short period of time, Air Raid Precautions had transitioned from a local responsibility to a massive Government effort mandated through legislation and recognized as significant to British wartime success.

As Britain continued to ramp up its preparations for war, the need for people to fill roles critical to its defense became even more important. By year end 1938, planners estimated a need for 11.15 million men to serve in the armed forces or fulfill civil defense positions. Furthermore, they identified a deficit of 400,000 ARP workers, excluding women. To address this issue, the Government established the National Service to help support the recruitment efforts of both the armed services and ARP volunteers. Prior to its creation, each individual service recruited its own workers resulting in a lack of overall coordination and shortage of manpower for key functions including fire brigades and demolition crews.

In January 1939, the Government issued the booklet *National Service: A Guide to the Ways in Which the People of this Country May Give Service* to all households and requested that people help with the war effort in either a military or civil defense role. The handbook offered an overview of jobs available, divided by age and gender. Specific positions included police, fire and rescue, evacuation support, nursing and first aid, and demolition parties. As stated in the booklet, “It is for the Government to make clear what service the country needs and in what forms it can be given...It is for you to judge what

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<sup>21</sup> *Air Raid Precautions*, University of Toledo Digital Repository, March 1941, 1, accessed September 10, 2018, <http://utdr.utoledo.edu/cgi/viewcontent.cgi?article=1481&context=ur-87-68>.

service you can best give, and this Guide will help you decide.”<sup>22</sup> The guide also urged civilians to complete an application for enrollment.

One important civil defense job recruited by the National Service was that of the Air Raid Warden. According to the job description published in the *National Service* guide:

The Air Raid Wardens are the foundation of the Air Raid Precautions Service. There is to be a wardens’ post consisting of 5 to 6 wardens to every 400 to 500 inhabitants, and it is the business of the wardens to have a thorough knowledge of their sector, of its inhabitants, and of the location of gas mains, electric cables, telephones, shelters, and trenches. They would be responsible for keeping in touch with the inhabitants of their sector and giving them advice. The wardens would be the first on the scene when air raid damage had occurred and would be responsible for summoning the property form of help and for doing what they could themselves until its arrival.

**QUALIFICATIONS.** Air Raid Wardens should be responsible members of the public, preferably living in the district where their duties will lie. Men and some women are needed, between the ages of 25 and 50.<sup>23</sup>

Moreover, according to the A.R.P handbook *The Duties of Air Raid Wardens* “The air raid warden is chosen as a responsible and reliable member of the public who will undertake to advise and help his fellow-citizens, in the sector to which he is allotted, in all the risks and calamities which might follow from air attack, and will form a link between them and the authorities for reporting air raid damage and calling aid when

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<sup>22</sup> *National Service, A Guide to the Ways in Which the People of This Country May Give Service*, His Majesty’s Stationary Office, January 1939, 2, accessed September 17, 2020, [filestore.nationalarchives.gov.uk/pdfs/large/cab-24-280.pdf](http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-280.pdf).

<sup>23</sup> *National Service*, 13.

required.”<sup>24</sup> The warden also assisted the public during an air raid by spreading the siren warning via whistle and directing people to shelters.

By June 1940, National Service personnel had grown to 345,000 full-time and 1.37 million part-time civil defense workers totaling over 1.7 million men and women ready to support the home front.

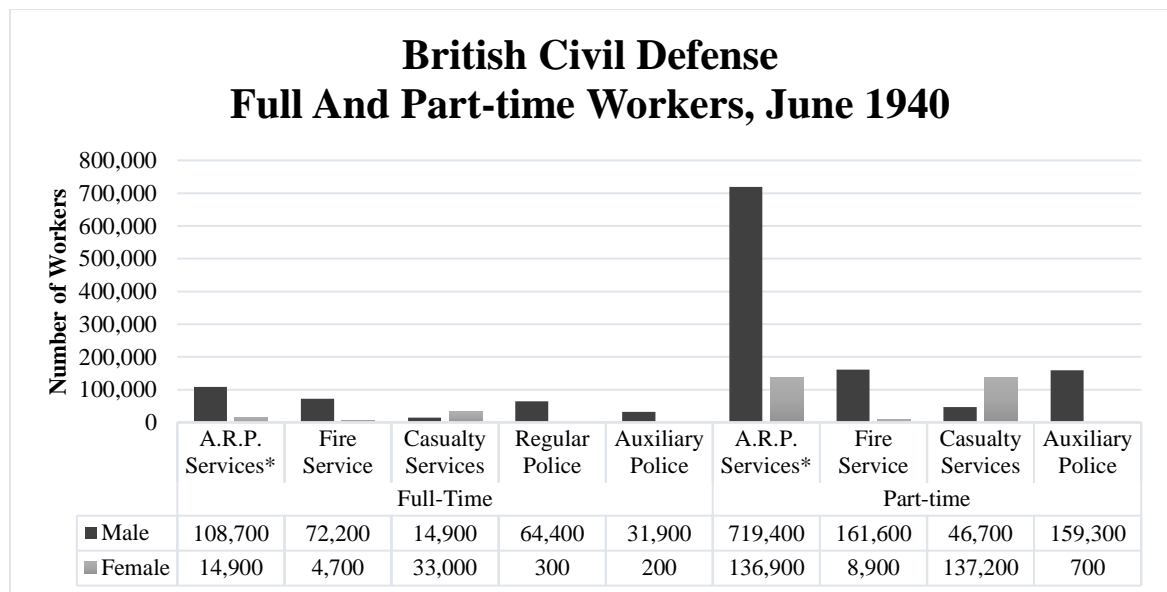


Figure 3-2. ARP workers by gender and full and part-time status. Data from O’Brien, *Civil Defence*, 690.

\*ARP Services included wardens, rescue and first aid, report centers, etc.

In 1938, the Cabinet established a full-time Ministerial position responsible for Air Raid Precautions along with the newly established National Voluntary Service. This role, Lord Privy Seal, filled by Sir John Anderson expanded after Great Britain’s declaration of war and became the Minister of Home Security. In addition to the coordination of civil defense efforts with other departments, this office oversaw all ARP

<sup>24</sup> Air Raid Precautions, *Handbook No. 8 (2<sup>nd</sup> Edition): The Duties of Air Raid Wardens*, 1938, 2, The National Archives, Kew, Item HO 186/1377.

efforts. These included the management of the central and regional ARP personnel, distribution of equipment and supplies, and approval of ARP schemes. Newly established services were also consolidated under the Minister of Civil Defence and included the Civil Defence Rescue Service, Air Raid Warden Service, Fire Guard Service, Women's Voluntary Service, and Shelter Service. The establishment of a dedicated Ministerial role and specialized Government services strengthened Great Britain's civil defense efforts through improved coordination between Westminster and local communities. Moreover, the increased Government oversight and ownership reinforced the importance placed on Air Raid Precautions.

As hostilities increased throughout the world, planners leveraged air raid cases from other countries to assist with civilian air attack programs. For example, the August 1938 *Monthly Intelligence Report (No. 231)* discussed some of the important aspects and issues of civil defense in China and Spain including air raid warnings, shelters, and civilian evacuation. The report concluded that in Spain, the use of cellars resulted in a higher number of casualties due to people being crushed under collapsed buildings or trapped in burning structures. It also concluded casualties were significantly reduced by moving people out of risky areas.

Moreover, the report described the crowding of shelter entrances and overcrowding of shelters in Spain due to short warning timeframes. "The population generally has failed to take sufficient care, where in China the people seem to have taken cover more quickly. This difference in behavior appears largely due to the fact that the warning period in Spanish coast towns has been very short, whilst the inland cities of

China have generally had about 20 minutes warning of raids.”<sup>25</sup> The report also highlighted the importance of well trained and organized rescue parties in Spain noting the criticality of having a sufficient number of civil defense workers.

Another document, written by Major MacRoberts and provided to local authorities, *Lessons from Barcelona* described the blackout conditions in Barcelona, the protection of windows and doors against damage from splinters, and the importance of the Air Raid Warden. It also outlined the organizational structure of the “Immediate Action” parties responsible for rescuing people trapped under debris. Moreover, it highlighted the unreliability of the air raid warning system due to the delay in sounding the alarm, which led to people being caught in the streets during the onset of a raid. It concluded “The lesson to be learnt from the experience of the Spanish cities is that all these measures of protection which require careful thought and preparatory plans, must not be delayed until we are confronted with the inevitability of war.”<sup>26</sup>

In August 1939, as war with Germany became inevitable, Parliament passed the Emergency Powers (Defence) Bill granting expanded wartime authority to the British Government and the ability to draft Defense Regulations to preserve the “Security of the State.” One set of eighteen directives focused on Public Safety and included ARP programs including the evacuation of civilians, precautions in the event of a hostile attack, control of lights and sounds, and powers and duties of auxiliary fireman among

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<sup>25</sup> Air Raid Precautions Department, Intelligence Branch, *Monthly Intelligence Report (No. 231), Effects of Air Raids in Spain and China*, August 15, 1938, 8, The National Archives, Kew, Item CO 323/1592/66.

<sup>26</sup> Major N. de P MacRoberts, *A.R.P. Lessons from Barcelona: Some Hints for Local Authorities and for Private Citizens*, May 1938, 3, The National Archives, Kew, Item MEPO 2/3632.

others.<sup>27</sup> The Emergency Powers Bill elevated ARP efforts by giving the State control over all aspects of home defense.

By the September declaration of war, British civilians resigned to what was to come were willing to implement key ARP measures. According to O'Brien "When the Government began putting passive defence on a war footing, a large part of the nation had reached a state of mental preparedness for large-scale assault from the air."<sup>28</sup> However, the absence of an air attack during the Phoney War from September 1939 to May 1940, led to public pressure to ease up on defense measures. As noted in the December 21, 1939 War Cabinet Meeting, "Members of the Civil Defence Committee were concerned at the increasing tendency, reflected in the Press to regard the Government's policy in regard to Civil Defence measures as unnecessary and even to take the line that there would be no air raids and that the sooner life could return to normal the better."<sup>29</sup> ARP personnel contended that the complacency encouraged by the press was impacting the remaining preparations. Nonetheless, during the first eight months of 1940, they implemented or refined the remaining programs, which included a complex series of civil defense measures including civilian warnings, protection, and post-air raid support.

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<sup>27</sup> Cabinet Committee, *Defence Bill and Regulations*, July 21, 1939, Appendix 2, ii, accessed September 27, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-288.pdf>.

<sup>28</sup> O'Brien *Civil Defence*, 284.

<sup>29</sup> War Cabinet (121), *Conclusions of a Meeting of the War Cabinet held at 10 Downing Street, S.W. 1, on Thursday, December 21, 1939, at 11-30 A.M.*, December 21, 1939, 485, accessed September 17, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-65-2.pdf>.



The air raid warning system developed prior to the Blitz, attempted to balance the needs of civilian safety and wartime productivity. In order to ensure accurate notifications, planners divided Great Britain up into Warning Districts, which allowed for more focused alerts in the event of a raid. Royal Observer Corps personnel tracked incoming raiders and notified Fighter Command who then had responsibility for initiating the alarm via telephone to several distribution centers across the country. The centers then forwarded the warnings on to the Warning District recipients using the Post Office telephone system. Depending upon the nature of the threat, the system utilized several different types of warning messages. These included a fifteen minute “Yellow” warning to Civil Defense workers, five minute “Red” warnings to the public to get to a shelter, and two “Green and White” all clear alerts.

Each community notified its civilians via a rotary electric siren or a whistle. For example, the County Borough of Croydon placed sirens in police stations, boxes, and garages and within several factories. The County also installed warning sirens on several police cars.<sup>30</sup> In the case of a gas attack, air raid wardens used rattles to sound the alarm and handbells to signal the area was clear of gas. Moreover, the Government designated church bells as the signal of an airborne raid and until May 1943, prohibited them from being used for other purposes. In addition, prior to the war, ARP officials conducted several air raid warning tests and in November 1939, Government personnel sent A.R.P.

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<sup>30</sup> County Borough of Croydon, *Civil Defence: An Exploratory Handbook*, December 1939, 39, The National Archives, Kew, Item HO 207/568.

Circular 310/1939 to Civil Defense regions instructing ARP workers and civilians on what to do in the event of an air raid.

During the early days of the war, the air raid warning system received criticism from multiple stakeholders due to the warning frequency. Either alerts occurred too frequently and disturbed people's sleep, leading to a loss of productivity, or too infrequently resulting in missed notifications of an attack. In June 1940, Lord Hugh Dowding, Commanding-in-Chief, Fighter Command recommended the War Cabinet send the following public message addressing these concerns:

It is the policy of the Government to be sparing in the issue of public air raid warnings, especially at night, in order to interfere as little as possible with the national productive effort and with the repose of individuals. It must be recognized that this policy may sometimes result in minor attacks being made without any warning being issued to the public. When public warnings are given, persons engaged on work of national importance are asked to consider themselves as soldiers engaged in the fight for the existence of the nation, and to remain at their posts.<sup>31</sup>

Tests and air raids prior to the Blitz, however, did lead planners to adjust specific aspects of the system. For example, the Government consolidated warning messages combining the "Green and White" warnings into one all clear message. In addition, a "Purple" warning used to extinguish lights previously exempted from the blackout was added as a "silent Red warning" message.

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<sup>31</sup> *Air Raid Warnings: Copy of a letter addressed to the Prime Minister by the Air Officer Commanding-in-Chief, Fighter Command*, June 29, 1940, 2, accessed September 18, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-66-9.pdf>.

**Table 3-7. British Air Raid Warning Message Types, 1940**

<i>Warning Message</i>	<i>When Used</i>	<i>Audience</i>	<i>Timing</i>
Yellow	Preliminary message of a potential attack	Civil Defense, Police, Fire Services, specific factories	15 minutes
Purple	Potential Attack - Extinguish lighting	Civil Defense, Police, Fire Services, specific factories	Discretionary
Red	Imminent Attack	Public	5 minutes
White	Danger has passed	Civil Defense, Police Fire Services, specific factories, Public	All clear

Source: Home Office, *History of the Air Raid Warning System, September 1939 – March 1944*, Approx. date 1945-1957), 3-4, 6, The National Archives, Kew, Item HO 186/2464.

Prior to the Blitz, noise from the sirens drowned out the sound of incoming planes making it difficult for listening posts and military defenses to identify German raids. In response officials reduced siren times from two to one minute alerts. Changes were also made to keep workers on the job. Factories utilized their own air raid spotters and during “Red” alerts, employees continued working after the warning was sounded. If needed, spotters would activate a factory specific alarm to seek shelter and issued an all-clear independently of the broader air raid warning sirens.

As part of air raid defense preparations, the Government also implemented lighting restrictions requiring a “a complete black-out from dusk to dawn.”<sup>32</sup> Mandates imposed on civilians and businesses included the covering of windows and skylights with paint or brown paper to ensure no lights shown outside of a building. Those who chose not to follow black-out requirements could face heavy fines ranging from £100 to £500 or

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<sup>32</sup> *Air Raid Precautions Bill, Financial Provisions*, John Anderson, Lord Privy Seal, March 3, 1939, 5, accessed September 22, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-284.pdf>.

for extreme cases spend three months to two years in jail.<sup>33</sup> Enforcement of these rules fell on Wardens and Police Officers who monitored the civilians and businesses in their assigned sector.

Correspondingly, ARP personnel also applied lighting restrictions to street-lights and automobiles, resulting in a higher number of fatalities. In 1939, 4,000 people or a third more than the prior year had been killed due to the hazards of traveling at night.<sup>34</sup> In August 1939, the Southern part of Great Britain conducted a “Black-Out Test”, and adjustments were made to the existing standards to help reduce the number of accidents while maintaining black-out conditions. According to the Civil Defense handbook for the County Borough of Croydon, the test resulted in the following modifications:

1. The use of white paint on roads, telephone poles, trees, and on pedestrian crosswalks.
2. The placing of red lamps at various locations.
3. The masking of traffic signals.
4. The masking of pedestrian guard rails with sheet metal to hide the post from planes but provide illumination to motorists.
5. The illuminating of direction and mandatory signs<sup>35</sup>

To appease civilians frustrated by black-out requirements and further reduce the number of accidents, the Government made several other policy changes. For example, administrators established two separate lighting districts, a coastal zone and inner zone reflecting different risk levels. The inner zone permitted more relaxed lighting

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<sup>33</sup> Brayley, *The British Home Front*, 43.

<sup>34</sup> Alfred Price, *Blitz on Britain 1939-45*. 2<sup>nd</sup> ed. (1977) (U.K.: Sutton Publishing, 2000), 17.

<sup>35</sup> County Borough of Croydon, *Civil Defence: An Exploratory Handbook*, 35.

restrictions depending upon location. In addition, scientists developed new lighting techniques, equivalent to starlight in streetlights and shop windows.



Figure 3-3. Bollard on a traffic island in London. To help prevent accidents during the blackout the bollard is painted white and has the words 'Keep Left' the top of the bollard, Imperial War Museum, D 2732, <https://www.iwm.org.uk/collections/item/object/205198119>.

ARP planners hoped that the concealment of cities and industrial plants via blackout conditions would help protect civilians and allow wartime services, however, they still expected German air raids. Determining how to best protect the population from high explosive bombing and gas attacks challenged civil defense planners as they weighed the risk of a potential direct hit versus the costs involved with building one hundred percent bomb and gas proof shelters for all civilians. In order to protect the population, three separate plans were developed, which included the evacuation of vulnerable civilians from high risk areas, procurement of shelters, and the disbursement of gas masks and other supplies.

Focusing on the elderly and infirm, children, and non-working women, the evacuation strategy included the voluntary clearing of areas deemed high risk of a bombing attack. Total potential evacuees equated to one-third of the populations of industrial and coastal areas of Britain. In addition, as part of the evacuation strategy, planners gave special consideration to the evacuation of children from vulnerable areas. As concluded in the July 1938 *Report of Committee on Evacuation* “A thinning of the population of congested urban areas will automatically reduce the number of casualties in the event of raids. It will also relieve the pressure on the essential services (including air raid precautions) in these areas.”<sup>36</sup> Furthermore, officials estimated the London area transportation systems could move a 100,000 people a day to surrounding areas. The final evacuation plan recommended using existing facilities including trains, the underground subway system, and private dwellings to transport and house evacuees.

**Table 3-8. Potential Evacuees by Region (1938)**

<i>Industrial Area</i>	<i>Evacuees</i>
London and Middlesex	1,900,200
Newcastle and Gateshead	130,300
Leeds, Bradford, Sheffield, and Hull	515,700
Liverpool, Bootle, Manchester, Salford	611,400
Birmingham	320,700

Source: *Report of Committee on Evacuation*, 38.

In September 1939, after Great Britain’s declaration of war, the Government launched its evacuation plan and moved 930,000 school age children, 536,000 children under the age of five with their mothers, expectant mothers, and the blind to designated

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<sup>36</sup> *Report of Committee on Evacuation*, Presented by Secretary of State for the Home Department, July 1938, 7, accessed September 17, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-279.pdf>.

reception areas such as Devon, East Anglia, Kent and Wales. With a ratio of one for every five children, teachers and other helpers also accompanied evacuees.<sup>37</sup> London alone evacuated 650,000 children.<sup>38</sup>

After months without a German air attack, evacuees began returning to their communities and by December 1939, one-third of the children from London and almost all of the children from the North had returned home. This continued throughout the winter season and by spring 1940, seventy-five percent of those initially evacuated had left reception areas. In June 1940, after the fall of France, evacuations resumed, and 20,000 children were moved from South-East England.

Government officials however, continued to be challenged by children returning to high risk areas and they struggled to keep them in reception areas. According to the August 4, 1940 *Civil Defence Report (No. 20)*:

There is an appreciable drift back to the evacuation areas...During the fortnight ended the 27<sup>th</sup> July, 7,500 children returned to the London area, of whom 3,500 were children who had formed part of the recent evacuation...which took place on June 15 – June 18<sup>th</sup>. The Minister of Health has appealed to parents individually not to bring their children back, and publicity has been given to this appeal and to the reasons for keeping the children in the reception areas.<sup>39</sup>

In response to an expected German invasion, civilian evacuations continued but on a smaller scale than experienced in September 1939. In September 1940, approximately

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<sup>37</sup> Brayley, *The British Home Front*, 26.

<sup>38</sup> Price, *Blitz on Britain*, 17.

<sup>39</sup> *Civil Defence Report (No. 20) Twentieth Report submitted by the Minister of Home Security, covering the Period from Midnight 7th July, 1940, to Midnight 4th August, 1940*, John Anderson August 4, 1940, 2, accessed February 1, 2021, [Record Type: Memorandum Former Reference: WP \(R\) \(40\) 185 Title: Civil... | The National Archives](#).

390,000 school children and 27,000 mothers and young children were billeted in reception areas. Moreover, the Government had moved an additional 30,000 adults and children from East Coast towns.<sup>40</sup> Westminster's ownership of civilian evacuation resulted in the successful removal of hundreds of thousands of people. Moreover, the sheer scale and level of coordination needed to evacuate large numbers of people demanded a centralized approach and highlights Great Britain's transition from a locally owned civil defense strategy.

For the majority of citizens remaining in high risk areas, ARP efforts included a shelter policy focused on protecting from blast and splinters versus a direct hit. The Government based this strategy upon World War I experiences along with multiple bomb tests. In February 1918, at the height of the World War I bombing attacks, the Air Ministry issued several comments about the nature of bombing attacks during the war. *The Air Raid Precautions Memorandum* described the types of shelters needed to protect the public. It stated, "Most of the casualties are inflicted by splinters and the majority of projectiles fall in open places, but all shelters that may be improvised or selected should be small and numerous rather than large and few so as to avoid heavy casualties involved by a bomb directly hitting a big shelter and to limit chance of panic in crowding into them."<sup>41</sup>

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<sup>40</sup> *Civil Defence Report (No. 21) Twenty-first Report submitted by the Minister of Home Security, covering the period from Midnight 4th August, 1940, to Midnight 1st September, 1940*, John Anderson, September 7, 1940, 4, accessed February 1, 2021, [Record Type: Memorandum Former Reference: WP \(R\) \(40\) 191 Title: Civil... | The National Archives](#).

<sup>41</sup> Air Ministry, *Air Raid Precautions*, Lord Rothermere, February 20, 1918, 1, accessed February 3, 2021, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-42.pdf>.



Moreover, due to the risk of panic and lost productivity as encountered during World War I, ARP planners worried about people developing a “deep shelter” mentality and hiding in underground subway stations refusing to come back to the surface. The potential disruption of production and shipping of critical wartime materials and the blocking of evacuation transportation routes led officials to prohibit the use of underground stations. In addition, authorities concerned over higher casualty rates due to large concentrations of people sheltering in one place were reluctant to build large shelters. As a result, the Government’s shelter program included the distribution of small family shelters, above ground communal shelters with a recommended capacity of no more than fifty people, and the reinforcement of residential and commercial basements. The goal was to protect people from bomb blasts not necessarily from direct hits.

In early 1939, an independent conference chaired by Lord Hailey reviewed the Government’s shelter policy and identified any necessary changes. The resulting report validated the strategy in place:

First, no grounds are shown for departing from the policy of blast and splinter proof protection...and the Government will accordingly make every effort to assure it’s being carried out as speedily as possible in vulnerable areas. Second, an attempt to provide bomb-proof shelters on any general scale would prove impossible in practice, and would be a mistaken policy...technical advice will be afforded as speedily as possible to industrialists and others as to the form or forms which such shelters might take.<sup>42</sup>

In 1939, the Government began distributing the family sized Anderson Shelter, designed to accommodate six people and withstand a 500-ton bomb blast from fifty feet away. Administrators supplied these shelters at no cost to families who made less than

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<sup>42</sup> House of Commons, *Shelter Policy*, April 20, 1939, (HC Deb 20 April 1939 vol 346 cc471-6), accessed September 18, 2018, <http://hansard.millbanksystems.com/commons/1939/apr/20/shelter-policy>.

£5 per week and sold them for £9 to those who could afford it. The goal was to distribute 2.5 million shelters protecting approximately 15 million people. In September 1939, the procurement and distribution of Anderson shelters increased exponentially however, there were challenges balancing the needs of the military with civilian defense.

After France surrendered on June 17, 1940, officials expected that Great Britain would be invaded next. As Amy Bell states in "Landscapes of Fear: Wartime London, 1939-1945," "Londoners expected an imminent invasion from 1939 until the opening of a second front in the USSR in 1941."<sup>43</sup> This led to a conflict for materials between military and civilian needs as Britain continued to ramp up its military output. According to the September 1939, Supply and Production *Civil Defence Report (No. 1)*, approximately one third of Anderson shelters had been delivered to householders. The report also noted, "The output arranged provided for completion of the programme within six months i.e., by end of March 1940, but the unforeseen heavy demands now being tabled by the Fighting Services for similar material may interfere with this programme."<sup>44</sup> Reports for the remainder of 1939 continued to highlight the challenges with procuring civilian defense supplies including sandbags, fire hoses, bricks, cement, ironwork, rubber, steel, and timber.

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<sup>43</sup> Amy Bell, "Landscapes of Fear: Wartime London, 1939-1945," *Journal Of British Studies* 48, no. 1 (January 2009): 153-175, 158, Academic Search Premier, EBSCOhost.

<sup>44</sup> Supply and Production, *Civil Defence Report (No. 1)*, 3.

### Supply and Production Reports - Distribution of Shelters, 1939-1940

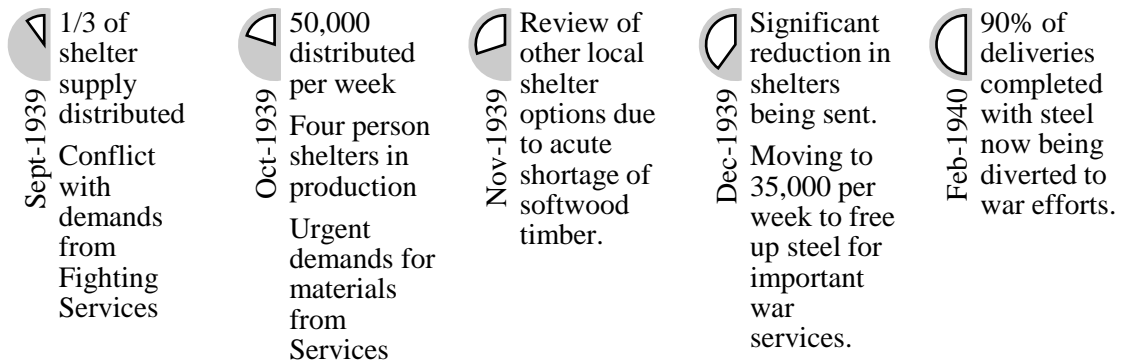


Figure 3-4. Distribution of Shelters, 1939-1940, Information compiled from Supply and Production *Civil Defence Reports (No. 1-4)*, *Civil Defence Report (No. 1)*, Reported by the Minister of Home Security, for September 1939, John Anderson, October 3, 1939, 3, accessed February 2, 2021, [Record Type: Memorandum Former Reference: WP \(R\) \(39\) 110 Title: Supply... | The National Archives](#); Supply and Production, *Civil Defence Report (No. 2)*, Reported by the Minister of Home Security, for October, John Anderson, 2, accessed February 2, 2021, [Record Type: Memorandum Former Reference: WP \(R\) \(39\) 72 Title: Supply and... | The National Archives](#); Supply and Production, *Civil Defence Report (No. 3)*, Report by the Minister of Home Security for November 1939, John Anderson, December 7, 1939, 1, accessed February 2, 2021, [Record Type: Memorandum Former Reference: WP \(R\) \(39\) 110 Title: Supply... | The National Archives](#); Supply and Production, *Civil Defence Report (No. 4)*, Report by the Minister of Home Security for December 1939, John Anderson, January 9, 1940, 1, accessed February 2, 2021, [Record Type: Memorandum Former Reference: WP \(R\) \(40\) 14 Title: Supply and... | The National Archives](#); *Civil Defence Report (No. 16)*. Sixteenth Report submitted by the Minister of Home Security, covering the period from Midnight 17th March, to Midnight 14th April 1940, John Anderson, April 17, 1940, 2, accessed February 2, 2021, [Record Type: Memorandum Former Reference: WP \(R\) \(40\) 124 Title: Civil... | The National Archives](#).

By the end of March 1940, production of Anderson shelters ceased. Those distributed provided shelter for approximately 11.5 million people.

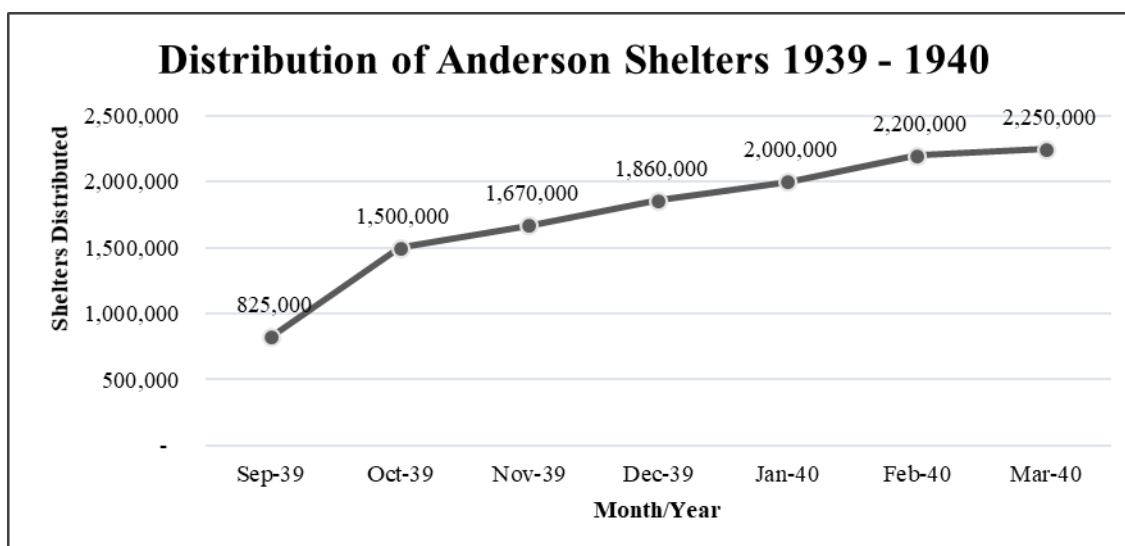


Figure 3-5. Distribution of Anderson shelters by Month, Compiled from Supply and Production Reports, *Civil Defence Report (No. 1)*, 3; *Civil Defence Report (No. 2)*, 2; *Civil Defence Report (No. 3)*, 1; *Civil Defence Report (No. 4)*, 1; Supply and Production, *Civil Defence Report (No. 5)*, Report by the Minister of Home Security for February 1940, March 8, 1940, John Anderson, January 12, 1940, 1, accessed February 2, 2021, [Record Type: Memorandum Former Reference: WP \(R\) \(40\) 54 Title: Supply and... | The National Archives](#); Supply and Production, *Civil Defence Report (No. 6)*, Report by the Minister of Home Security for February 1940, March 8, 1940, John Anderson, 1, accessed February 2, 2021, [Record Type: Memorandum Former Reference: WP \(R\) \(40\) 85 Title: Supply and... | The National Archives](#).

Throughout 1940, construction of community shelters also progressed, however with concurrent demands, the Government prioritized military needs over that of civil defense. As referenced in the January 1940 *Civil Defence Report (No. 5)*:

Increased deliveries of steel joists, plates and fittings has enabled local authorities to improve their rate of progress with the work of converting domestic and public basements to air raid shelters. Work on the erection of precast concrete fifty-person shelters shows acceleration and these units are now being requisitioned by the Fighting Services for air raid shelter at Home Stations.<sup>45</sup>

As the war escalated in Europe, local authorities were provided supplementary information outlining options for shelters and urged to provide support for those civilians erecting their own shelters. As noted in the July 7, 1940 *Civil Defence Report (No. 19)*:

<sup>45</sup> Supply and Production, *Civil Defence Report (No 5)*, 1.

Local authorities in these areas have been instructed to do everything possible to assist persons eligible for the provision of free shelter...by employing professional consultants to advise householders on the construction of shelters in their homes, by acquiring and distributing stocks of suitable materials, or by employing labour where the householders are unable to do the work themselves. In addition, a certain number of communal shelters are to be provided in the more thickly populated areas.<sup>46</sup>

In addition, the Civil Defence Act of 1939, required companies and owners of commercial buildings to provide shelters for employees and tenants. To enforce this requirement, the Government required they draw up and submit their plans for approval. Failure to comply resulted in a fine of up to £100 and £10 for each additional day after the deadline. The November 1939 *Civil Defence Report (No. 7)* remarked “Over 90% of the occupiers of factory premises had submitted their proposal for shelter three weeks before the statutory period of three months under the Act expired. Over two-thirds of these proposals have already been approved, and others are being approved rapidly...Protection has ready been provided for more than half of the 200,000 mine workers for whom it is required.”<sup>47</sup> The March 3, 1940, *Civil Defence Report (No. 14)* also noted that factory shelters were on track but that commercial establishments were slower than expected. By April 1940, businesses had completed shelters for eighty percent of factory workers providing protection for approximately 3 million people.<sup>48</sup>

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<sup>46</sup> *Civil Defence Report (No. 19) Nineteenth Report submitted by the Minister of Home Security, covering the period from Midnight, 9th June, 1940 to Midnight, 7th July, 1940*, John Anderson, July 13, 1940, 2, accessed February 3, 2021, [Record Type: Memorandum Former Reference: WP \(R\) \(40\) 178 Title: Civil... | The National Archives](#).

<sup>47</sup> *Civil Defence Report (No. 7) Seventh Report submitted by the Minister of Home Security covering the period from midnight 29th October to midnight 12th November, 1939*, John Anderson, November 17, 1939, 3, accessed February 3, 2021, [Record Type: Memorandum Former Reference: WP \(R\) \(39\) 84 Title: Civil... | The National Archives](#).

<sup>48</sup> *Civil Defence Report (No. 16)*, 2.



Figure 3-6. Chronicle House in Fleet Street, London, marked for use as a public air raid shelter., Lauren Wheeler, “30 Rare Photos of Bomb Shelters From World War II and Beyond.” Showbiz CheatSheet. September 4, 2018, H F Davis/Getty Images, <https://www.cheatsheet.com/culture/rare-photos-of-bomb-shelters-through-history.html/>.

The expectation of chemical warfare also led ARP officials to implement a series of measures aimed at protecting the public from a gas attack. Throughout the interwar period, planners conducted multiple experiments utilizing gas bombs and spraying techniques. Findings from these tests led scientists to recommend civilians avoid taking refuge in cellars or other underground shelters. However, protection from bombs necessitated going underground to escape the blast.

To resolve this issue, the Government engaged in a comprehensive gas mask distribution program aimed at providing every civilian with a respirator. In January 1937, Westminster opened a Government owned gas mask assembly factory in Blackburn and by September 1939, they produced and distributed more than 50 million respirators to the public and held an additional 13 million in reserve.<sup>49</sup> Moreover, ARP personnel

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<sup>49</sup> Supply and Production, *Civil Defence Report (No. 1)*, 4.

provided 45 million special attachments for toxic smoke. Scientists also developed special respirators for young children and infants. As discussed in the War Cabinet Chiefs of Staff meeting on October 7, 1940, “The effective gas-proofing of all shelters had proved an impossible task and the public were being told that their chief protection against lethal gas would lie in the respirator. They were being encouraged to learn to put it on quickly and get used to wearing it.”<sup>50</sup> Furthermore, like many other supplies, respirators were shared at the request of military personnel. For example, as part of an effort to sway Turkish support for the war in favor of the Allies, in October 1939 the Government provided Turkey with 500,000 civilian respirators originally requested by Poland.

In addition to providing civilians with respirators, there were specialists trained on gas detection and decontamination. In the event of an attack, civil defense personnel would dispatch Gas Detection teams to determine if gas had been used and what type. If they detected gas, Decontamination units equipped to deal with poison gas would then be called in to remove blistering gas from streets, buildings, and vehicles. According to the National Service decontamination squad job requirements “The work is arduous and physically fit men are wanted between the ages of 25 and 50. It is suitable for men used to heavy manual labor.”<sup>51</sup> To further assist with gas removal, the Government also

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<sup>50</sup> Chiefs of Staff Committee, *Minutes of Meeting Held on 7<sup>th</sup> October, 1940 at 3.30 p.m., October 9, 1940*, 1, accessed February 6, 2021, [POSSIBLE GAS ATTACK ON THE UK. Civil defence against Gas. Gas Casualties. Scale of... | The National Archives.](#)

<sup>51</sup> *National Service*, 15.

procured 15,000 tons of bleaching powder and distributed 8,000 tons of it to local communities.



Figure 3-7. Air Raid Warden wearing gas protective clothing, gas mask and steel helmet, Ministry of Information Photo Division Photographer, Imperial War Museum, D3494, <https://www.iwm.org.uk/collections/item/object/205125696>.

During the Spanish Civil War, the fires caused from explosive bombs reinforced the importance of an efficient and well-coordinated fire service. This challenged Great Britain due to its long history of a decentralized fire-fighting structure. With over 1,600 independent brigades, all with varying levels of organization and equipment, the Government focused on ensuring consistency in equipment and training. As part of the Air Raid Precautions Act of 1937, the Government provided funding improvements to local fire services with grants up to seventy-five percent of the total costs. The Fire Brigades Act of 1938 followed this legislation and made local governments responsible for an efficient fire service. The bill also gave the Home Secretary authority of direction



over Fire Services with the help of a Fire Service Commission and Central Advisory Council.<sup>52</sup>

In 1938, the Government established the Auxiliary Fire Service (AFS) to augment existing fire brigades, which in the mid-1930s only had 5,000 professional fire fighters and 50,000 volunteers.<sup>53</sup> AFS volunteers worked out of the station where they lived and when off duty remained ready in the event of a raid. Men and women both joined the AFS and served in a variety of roles depending on fitness level including general firefighting, modified firefighting or ground level only, or driving emergency fire boats. Women filled jobs driving fire trucks or handling office work. By the end of the year, 80,000 volunteers had joined the AFS and by September 1939, there were 200,000 auxiliary fire service personnel.<sup>54</sup>

As part of ARP planning, the Government also provided fire equipment to brigades including pumps, gear, and appliances. According to the September 1939 *Supply and Production Report*, “The measure of this supplementary provision represents in many cases, particularly those of the populous and vulnerable areas, and increase of 10, 15, or 20 times the number of fire fighting units maintained in peace-time.”<sup>55</sup> Planners intended to procure 26,000 pumps for brigades and to keep in reserve and an

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<sup>52</sup> *Fire Brigades Bill*, Joint Memorandum By the Home Secretary and the Secretary of State for Scotland, Samuel Hoare, Walter Elliot, October 11, 1937, 2-3, [cab-24-271.pdf \(nationalarchives.gov.uk\)](https://www.nationalarchives.gov.uk/cab-24-271.pdf).

<sup>53</sup> Ewen, “Preparing the British Fire Service for War,” 217.

<sup>54</sup> Peter Doyle, *ARP and Civil Defence in the Second World War* (Oxford: Shire Publications, 2011), 29.

<sup>55</sup> Supply and Production, *Civil Defence Report (No. 1)*, 1.

additional 1,400 pumps for service departments. By February 1940, 22,300 pumping units and 14 million feet of fire hose had been delivered.<sup>56</sup>

Anticipating significant casualties, the Ministry of Health oversaw the preparation of 250,000 hospital beds.<sup>57</sup> To meet the expected needs, the Ministry added beds to existing hospitals and built blocks of emergency huts to accommodate the potential overflow of patients. By December 1939, Government planners projected that huts accommodating 25,000 wounded people would be ready in the event of an attack.<sup>58</sup> By April 1940, as a result of ongoing hut building efforts, these estimates were updated to 46,000 beds. Moreover, the Government refitted several hotels and ARP personnel developed plans to rapidly convert schools and other buildings into hospitals as needed. In addition, the Government stockpiled beds, medical supplies and specific drugs including quinine, opium, and catgut in readiness for the expected patients. ARP planning also included adding surplus doctors and nurses to care for the anticipated large number of casualties. By December 1939, almost 75,000 nurses had enrolled in the Civil Nursing Reserve.

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<sup>56</sup> *Civil Defence Report (No. 13) Thirteenth Report submitted by the Minister of Home Security, covering the period from Midnight 4th February, to Midnight 18th February, 1940*, John Anderson, February 23, 1940, 1, accessed February 3, 2021, [Record Type: Memorandum Former Reference: WP \(R\) \(40\) 70 Title: Civil... | The National Archives](#).

<sup>57</sup> FitzGibbon, *Winter of the Bombs*, 21.

<sup>58</sup> *Civil Defence Report (No. 9) Ninth Report submitted by the Minister of Home Security covering the period from Midnight 26th November to Midnight 10th December 1939*, John Anderson, December 10, 1939, 4, accessed February 3, 2021, [Record Type: Memorandum Former Reference: WP \(R\) \(39\) 117 Title: Civil... | The National Archives](#).

**Table 3-9. Civil Nursing Reserve, December 31, 1939**

<i>Nursing Role</i>	<i>Trained</i>	<i>In Training</i>
Assistant Nurses	22,000	
Nursing Auxiliaries	26,000	14,000
Assistant Nurse – Scotland	3,404	
Auxiliary- Scotland	9,264	

Source: *Civil Defence Report (No. 12) Twelfth Report submitted by the Minister of Home Security, covering the period from Midnight 21st January, to Midnight 4th February, 1940*, John Anderson, February 4, 1940, 2, accessed February 3, 2021, [Record Type: Memorandum Former Reference: WP \(R\) \(40\) 51 Title: Civil... | The National Archives](#).

Moreover, to help ensure casualties received rapid medical attention, civil defense preparations included stretcher and ambulance teams responsible for administering first aid and taking the wounded to the hospital. Planners coordinated these efforts jointly with several existing organizations including the British Red Cross, St. Andrews Ambulance Corps, and St. John Ambulance Brigade. To treat people with minor injuries, civil defense personnel also erected first aid posts with trained doctors and nurses. In addition, they also established mobile units to support neighborhoods and communities, where constructing a permanent post was deemed too costly.

To support the anticipated collapse of buildings during an attack, the Government established Rescue and Demolition teams to assist trapped civilians. Civil defense workers divided into “Light” or “Heavy” crews also had responsibility for shoring up or demolishing damaged structures as needed. The “Light” eleven men squad included first aid personnel, tradesmen, and a driver. For larger jobs, the “Heavy” nine man team and its large, specialized equipment would be called in. Separate services had accountability for road and sewer repair and Electricity, Water and Gas Services staffed up to help ensure essential utilities continued to function.

The Government helped coordinate several other civil defense functions including the Women's Voluntary Services, Report Centres, and Casualty Services. The Women's Voluntary Services (WVS) with 960,000 members billeted evacuees, staffed rest centers, canteens, and mobile catering units for civil defense workers, military, and air raid victims. In addition, ARP Report Centres established in each community served as central coordination units. These Centres received incoming bomb damage reports from Wardens and Police personnel, determined the type of assistance needed, and then contacted the appropriate support units including civilian stretcher, ambulance, or rescue teams. Furthermore, anticipating significant air raid fatalities, the Superintendent of Cemeteries managed a service dedicated to the collection of bodies, maintenance of makeshift mortuaries, preparation of bodies for identification, notification to relatives and police, record keepers of civilian deaths, and burial of any unclaimed bodies.

Throughout the summer of 1940, the number of raids across Great Britain intensified providing many civil defense workers the opportunity to gain some experience prior to the Blitz. As noted in the *Civil Defence Report (No. 21)* dated September 1, 1940, "The skill, enthusiasm and endurance of the Civil Defence Services have been frequently remarked upon during the period of this summary...Fire Services, Casualty Services, and Rescue Parties have rendered a great deal of help to R.A.F. stations...The Women's Voluntary Services have rendered valuable assistance, notably in maintaining mobile canteens at the scenes of fires in Birmingham."<sup>59</sup>

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<sup>59</sup> *Civil Defence Report (No. 21)*, 2.

Aerial bombing and its expected impact in future wars helped define British civil defense measures prior to the Blitz. With a limited budget, the Government focused on military expansion in order to gain parity with Nazi Germany and assumed local community ownership of Air Raid Precautions. By 1937, it became apparent that in order to successfully protect the population, maintain morale, and keep vital wartime services functioning, it would be necessary for Westminster to assume greater control and coordination over civil defense. During the next few years, ARP expenditures grew exponentially, the Government implemented a series of civil defense measures, and passed legislation to ensure compliance by local communities and businesses. Expecting massive German bombing raids, planners recruited over 1.7 million civil defense personnel, provided equipment, expertise, and manpower to fire brigades and hospitals, issued gas masks to every civilian in Great Britain, and distributed enough Anderson shelters to protect 11.5 million people. Moreover, the Government also expanded the number of available hospital beds, developed a nationwide air raid system, implemented a blackout policy, and evacuated approximately 450,000 people out of high risk areas. When the first raid of the Blitz hit on September 7, 1940, no one knew for sure if British civil defense efforts would be enough. Moreover, uncertainty prevailed about civilian preparedness for the challenges that laid ahead.

## Chapter 4 – Information and Misinformation Communication Tactics

During a November 10, 1932 Parliament debate, the Lord President of the Council Stanley Baldwin made the following statements:

Up until the time of the last War, civilians were exempt from the worst perils of war. They suffered sometimes from hunger, sometimes from the loss of sons and relatives serving in the Army, but now, in addition, they suffer from the fear, not only of being killed themselves, but, what is worse for a man, the fear of seeing his wife and children killed from the air...In the next war you will find that any town which is within reach of an aerodrome can be bombed within the first five minutes of war from the air, to an extent which was inconceivable in the last war...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...I will not pretend that we are not taking our precautions in this country...considering the years that are required to make your preparations, any Government of this country in the present circumstances of the world would have been guilty of criminal negligence had they neglected to make their preparations...We have to remember that aerial warfare is still in its infancy, and its potentialities are incalculable and inconceivable.<sup>1</sup>

These comments later published in papers such as the *Times*, *Daily Herald*, and the *Manchester Guardian*, depicted a grim future war. For civilians, it was the first civil defense communication provided by the Government. This chapter will discuss the techniques used to inform and educate the population about Air Raid Precautions prior to the Blitz. Furthermore, it will evaluate the effectiveness of each communication method in preparing civilians for an attack.

Several years after Baldwin's speech, in 1935 the newly established Air Raid Precautions Department issued a notice to local authorities outlining civil defense plans.

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<sup>1</sup> House of Commons. *International Affairs*, November 10, 1932, 632-633, accessed October 22, 2020, [https://api.parliament.uk/historic-hansard/commons/1932/nov/10/international-affairs#S5CV0270P0\\_19321110\\_HOC\\_284](https://api.parliament.uk/historic-hansard/commons/1932/nov/10/international-affairs#S5CV0270P0_19321110_HOC_284).

Utilizing the press, the Government provided details about the circular along with civilian ARP accountabilities. According to the *Times* article “Civilians in Air Attacks” printed July 11, 1935, householders and members of the public were responsible for several activities, “Learning means of protecting themselves and their houses from the effects of bombs and gas. Learning simple rules of conduct during air raids and in cases of injury or gas contamination. Volunteering for air raid precautions services in their own districts.”<sup>2</sup>

As ARP communications increased, newspapers became a primary vehicle for delivering information to the masses. Papers such as the *Times* appealed to conservative upper-class readers while the *Daily Mail* catered to a middle class audience. Conversely, the *Daily Herald* and *Manchester Guardian* readers were primarily members of the labor class. On an ongoing basis, the press updated readers on civil defense preparations. For example, in 1936 the *Times* and *Daily Herald* newspapers, published articles about the siren tests being conducted by the Air Raid Precautions Department of the Home Office. The *Times* article entitled “Finding the Best Air Raid Warning” and the *Daily Herald* article “London Trying Out Gas Attack Alarms” updated the public on gas warning tests.<sup>3</sup> Civilians outside of London also received this update via local papers such as the *Western Morning News* from Devonshire and Bristol’s *Western Daily Press* in the Southwest, and

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<sup>2</sup> “Civilians in Air Attacks,” *Times*, July 1, 1935, The Times Digital Archive.

<sup>3</sup> “Finding the Best Air Raid Warning,” *Times*, February 26, 1936, The Times Digital Archive; “London Trying Out Gas Attack Alarms” *The Daily Herald*, February 26, 1936, The British Newspaper Archive.

the *Sunderland Daily Echo* from Yorkshire and the *Shipping Gazette* from Durham covering the North.

**Table 4-1. Metropolitan Newspaper Circulation, 1930s**

Newspaper	Year/Readers (000s <sup>1</sup> )			
	1930	1935	1937	1939
<i>Daily Mail</i>	1,845	1,719	1,580	1,533
<i>Daily Express</i>	1,693	1,911	2,329	2,546
<i>Daily Herald</i>	1,082	2,000	2,000+	1,850
<i>News Chronical</i>	1,400	1,345	1,324	1,299
<i>Daily Mirror</i>	1,071	950	1,367 <sup>2</sup>	1,571
<i>Daily Sketch</i>	1,013 <sup>2</sup>	750	850	750
<i>Daily Telegraph</i>	90	461	637	737
<i>Morning Post</i>	132	120		
<i>The Times</i>	187	183	192	204
<i>The Guardian</i>	47	Unknown	Unknown	51
<b>Total</b>	<b>8,560</b>	<b>9,439</b>	<b>10,249</b>	<b>10,541</b>

Source: James Curran, Anthony Smith, and Pauline Wingate, *Impacts and Influences: Media Power in the Twentieth Century*. (Hoboken: Taylor and Francis, 2013), 30 Kindle; Alanah Reid, “A History of the Guardian Newspaper,” November 12, 2020, [Historicnewspapers.com](https://www.historicnewspapers.com), accessed December 11, 2020, [Full History of the Guardian - Historic Newspapers \(historic-newspapers.co.uk\)](https://www.historicnewspapers.com).

<sup>1</sup>Numbers are approximate.

<sup>2</sup>Data reflects the last 6 months of the year.

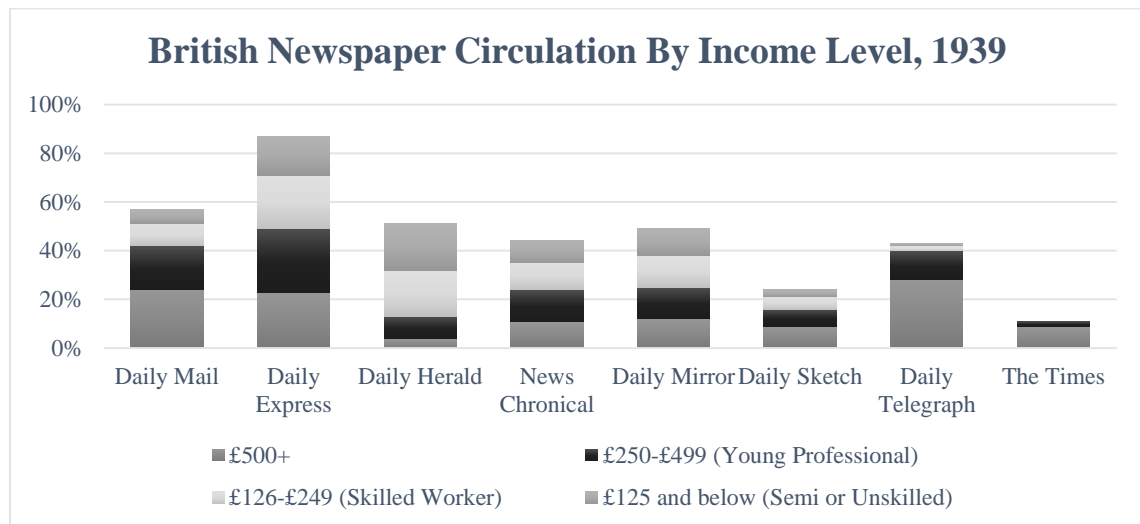


Figure 4-1. British Newspaper By Income Level data derived from Institute of Incorporated Practitioners in Advertising (IIPA) 1939 survey of press readership (43,000 sample size), Curran, *Impacts and Influences*, 37-38.



These updates continued during the years leading up to the Blitz. For instance, an April 1939 *Times* article described the key impacts of the Civil Defence Bill including the empowerment of local authorities to “ earmark in advance buildings for use as public shelters or for other purposes,” the requirement for company provided shelters, and additional financial assistance to poorer communities.<sup>4</sup> In another example, July 1939 air raid exercises and the corresponding news coverage further educated the public. Fifteen counties in south of England participated in drills of various programs. These included blackouts, air raid sirens, use of fireworks or small bombs, and civilian casualty services. This massive test along with additional ones scheduled during the upcoming year gave authorities and the public the opportunity to practice for an air raid. As stated in the *Times*, July 10, 1939, “While no one would claim that the exercises were perfect in every detail, there can be no doubt that all concerned – the thousands of civilian volunteer members of the ARP services and the public – performed their duties with a keen efficiency, and valuable experience has been gained in all branches which should prove to be of immense assistance to the whole community.”<sup>5</sup>

Newspapers also published speeches, which afforded senior officials the opportunity to gain buy-in while educating the public. For example, Sir John Anderson’s August 21, 1940 speech given at a National Defence Public Interest Committee luncheon was published in a variety of papers across Great Britain including the *Times*, *Daily Herald*, *Lancashire Evening Post*, *Yorkshire Post and Leeds Intelligencer*, and *Halifax*

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<sup>4</sup> “Protection from Air Attack,” *Times*, April 5, 1939, The Times Digital Archive.

<sup>5</sup> “Test of Civil Defence,” *Times*, July 10, 1939, The Times Digital Archive.

*Evening Courier*. During this speech, he congratulated the civil defense services for their efforts and described specific examples of valor. In addition, as a way of showing unity between the military and civil defense, Anderson communicated the close coordination between the ARP services and Home Guard in preparing for an attack. He also provided an example of what could happen if the public did not follow ARP guidance:

A warden was talking to a woman and child at the door of their house when he heard the noise of a falling bomb. He tried to persuade the woman to lie down. She would not. He then threw the child on the ground and lay on top of her. The explosion of the bomb blew the warden 12ft. through the door of the adjoining house. The woman who refused to lie down was seriously wounded in the head: the child was unhurt. The warden had probably saved her life.<sup>6</sup>

More directly, the Government reiterated civil defense requirements via the press and published them in both national and local papers. To illustrate, on July 6, 1940, the *Wiltshire Times and Trowbridge Advertiser* published an article titled “Air Raid Precautions Ready.” This article sought to reassure the public that “Civil Defence is calm and steady. The Air Raids have not caught us napping. Whatever the blow has fallen from the skies A.R.P. has gone smoothly and efficiently into action.”<sup>7</sup> The article also requested additional support by the public “Nevertheless there could be more co-operation from those whom A.R.P. are serving-the general public of Britain.”<sup>8</sup> The Government also reminded people of lighting restrictions, requested civilians keep away from unexploded bombs, and avoid digging up bomb craters. Lastly, the article

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<sup>6</sup> “Civil Defence in Air Raids,” *Times*, August 22, 1940, The Times Digital Archive.

<sup>7</sup> “Air Raid Precautions Ready,” *Wiltshire Times and Trowbridge Advertiser*, July 6, 1940, The British Newspaper Archive.

<sup>8</sup> “Air Raid Precautions Ready,” *Wiltshire Times*.

encouraged the public to read available publications to help them prepare for an Air Raid. Multiple newspapers including the *West London Observer* and *Chelsea News and General Advertiser* published this information. However, not all papers carried the same article resulting in a lack of consistent information across the country.

In addition to building awareness, the Government utilized the press to help recruit for civil defense jobs. This included publicizing the issuance of the National Service guidebook, publishing the number of volunteers recruited, and providing an update on the morale of civil defense workers. According to a January 4, 1939,

*Birmingham Mail* article:

John Anderson has confidence in the response to his voluntary service appeal for national defence work. In fact, he expects to get more volunteers than there are immediate jobs to fill. Having engaged all the volunteers, he needs to fill his amateur defence cadres, he proposes to enrol the surplus as a reserve available in time of grave emergency... That people are awakening to the urgency of the situation, is shown realistically by the number of one's friends, especially the young one's who are already deep in esoteric interests. Hockey girls are driving fire brigade cars and young Rugger men are manning fire engines.<sup>9</sup>

In May, the *Times* published a recruitment update for the greater London area stating over 194,893 people had submitted National Service applications.<sup>10</sup> In addition, advertisements appearing in local papers including the *Portsmouth Evening News*, *Sheffield Evening Telegraph*, *West Middlesex Gazette*, and *Aberdeen Evening Express* encouraged people to sign up to support the civil defense effort.

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<sup>9</sup> "More Than Enough," *Birmingham Mail*, January 31, 1939, The British Newspaper Archive.

<sup>10</sup> "Civil Defence Enrolments," *Times*, May 11, 1939, 16, The Times Digital Archive.

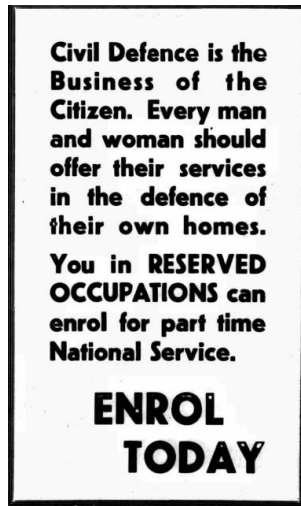


Figure 4-2. "Civil Defence Advertisements," *West Middlesex Gazette*, March 18, 1939, The British Newspaper Archive.

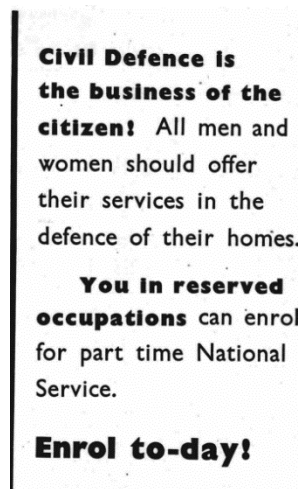


Figure 4-3. "Civil Defence Advertisement," *Lancashire Evening Post*, March 23, 1939, The British Newspaper Archive.

In addition to newspapers, the Government utilized other forms of media to educate the public including the radio, television, and movies. In the years leading up to World War II, millions of civilians listened to British Broadcasting Corporation (BBC) radio programs on a daily basis. This continued during the war and by 1945 there were approximately 10 million radio licenses.<sup>11</sup> National and regional programming included the news, music, morning exercise programs, sporting events, and children's shows, among others. On September 26, 1938, in response to the potential German invasion of Czechoslovakia, BBC news reader Frank Phillips broadcasted to the public the civil defense measures being implemented in Great Britain. He described the digging of

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<sup>11</sup> "Popular Pastimes and Entertainment in the Second World War," Imperial War Museum, accessed November 6, 2020, <https://www.iwm.org.uk/history/popular-pastimes-and-entertainment-in-the-second-world-war>.

trenches, distribution of gas masks, and the circulation of leaflets to all civilians on how to shelter in an air raid. The radio address also asked for emergency workers.<sup>12</sup>

Radio programs also provided ongoing updates on the war in Europe and continuous civil defense education. For example, in June and July 1939, the public listened to an ARP three part series if “War Comes,” which focused on the nature of aerial warfare and the necessary precautions for householders. The second installment led by Wing-Commander T.R. Cave-Brown-Cave described in detail what the public should expect during an air raid.<sup>13</sup> In 1940, civil defense programming continued and included demonstrations by civil defense personnel and talks by high ranking officials. For instance, on July 9 the London Fire Brigade conducted a demonstration and General Sir Hugh Elles, World War I Battle of Cambrai hero and Southwest Regional Civil Defence Commissioner, gave a talk on Civil Defense.<sup>14</sup>

During the 1930s, television began to emerge as a new form of entertainment. This medium provided viewers with daily news updates and special civil defense programming. As examples, on March 30, 1939, Sir John Anderson spoke about the need for Air Raid Precautions and on July 2 the public viewed the King addressing a

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<sup>12</sup> “News – Britain Begins to Prepare for War,” *BBC*, September 26, 1938, BBC Archive, accessed November 13, 2020, <https://www.bbc.co.uk/archive/news-britain-begins-to-prepare-for-war/zdvky9q>.

<sup>13</sup> “Tuesday National,” *Radio Times: Summer Number 2D*, June 30, 1939, 40, BBC Genome Radio Times 1923-2009, accessed November 13, 2020. <https://genome.ch.bbc.co.uk/page/fcdf328ea8bb4ee2809350fe79d868a2?page=1>.

<sup>14</sup> “Broadcasting,” *Times*, July 9, 1940, The Times Digital Archive.

parade of National Service organizations.<sup>15</sup> However in 1939, with only 20,000 televisions in Great Britain, most civilians had limited exposure to this communication method.<sup>16</sup> Moreover, the Government shut down television broadcasting in September after the commencement of the war.

Throughout the 1930s, movies became a significant draw for civilians and by World War II, between 25 and 30 million people attended the cinema each week.<sup>17</sup> Due to the large numbers of movie goers, the Government used short films to educate and elicit support for ARP efforts. In March 1938, a British Movietone short film “Interview with Sir Samuel Hoare” addressed the need for National Service volunteers. This film appealed to people’s patriotism through the use of moving images and sound. It also featured Samuel Hoare who said, "I appealed for a million men and women to help us with our work. I have had a splendid response and we are going to get our million. But I want all of you to come and give in your names to help us in a great job...Come along to help us to make your country and your home as safe as we can make them."<sup>18</sup> Images of

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<sup>15</sup> Reuters Gaumont British Newsreel, “Sir John Anderson Speaks On The Need For Air Raid Precautions,” March 30, 1939, British Pathè, :41, [Sir John Anderson Speaks On The Need For Air Raid Precautions \(Arp\) - British Pathé \(britishpathe.com\)](http://www.britishpathe.com); “Tuesday National,” *Radio Times*, 23.

<sup>16</sup> “A Short History of British Television,” National Science and Media Museum, last modified 2011, accessed November 4, 2020, <https://blog.scienceandmediamuseum.org.uk/history-of-british-television-timeline>.

<sup>17</sup> “Popular Pastimes” The Imperial War Museum.

<sup>18</sup> “Interview with Sir Samuel Hoare,” *British Movietone News*, March 24, 1938, AP Archive, accessed November 13, 2020, <http://www.aparchive.com/metadata/Interview-with-Sir-Samuel-Hoare/5793f97576174ccdbe9f945d00ab0cc6?query=air+raid+precautions&current=3&orderBy=Relevance&hits=3&referrer=search&search=%2fsearch%2ffilter%3fquery%3dair%2520raid%2520precautions%26from%3d1%26orderBy%3dRelevance%26allFilters%3dBritish%2520Movietone%257C43894%253APartner%252C1930%253ADecade%252CEducation%253ASubject%26ptype%3dIncludedProducts%26%3d1604679529299&allFilters=British%2520Movietone%7c43894%3aPartner%2c1930%3adecade%2ceducation%3asubject&productType=IncludedProducts&page=1&b=ab0cc6>.

people wearing gas masks, being trained on air raid precautions, and an anti-aircraft gun reinforced the importance of serving one's country.

The Government similarly produced films to educate the public about civil defense. For example, the May 1940 short film "What To Do In An Air Raid" focused on taking cover in the event of an attack and warned civilians not to remain in the streets but to find shelter.<sup>19</sup> In June, moviegoers received instructions on how to put out an incendiary device using a stirrup pump and bucket of water. The two minute film "How To Deal With An Incendiary Bomb" featured a family and their neighbors doing their part to put out a fire.<sup>20</sup>

The Government also utilized visits by the King and Queen, which were publicized via the newspapers, radio, and film, to build awareness and public support for the war. In February 1940, the *Times* provided an update on the royal visit to Glasgow, during which the King and Queen met with ARP volunteers. The article also went on to describe the number of trained workers and the money spent by Glasgow on civil defense. According to the Special Correspondent "The Queen congratulated the city on its fine record and said that her private information was to the same effect – that Glasgow was ready to cope with any emergency."<sup>21</sup>

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<sup>19</sup> Pathé Newsreels, "What To Do In An Air Raid," May 30, 1940, British Pathé, :55, <https://www.britishpathe.com/video/what-to-do-in-an-air-raid/query/air+raid>.

<sup>20</sup> Reuters - Gaumont British Newsreel, "How to Deal With An Incendiary Bomb," June 13, 1940, British Pathé, 2:00, [How To Deal With An Incendiary Bomb - British Pathé \(britishpathe.com\)](https://www.britishpathe.com/video/how-to-deal-with-an-incendiary-bomb).

<sup>21</sup> "Royal Visit To Clydeside," *Times*, February 29, 1940, The Times Digital Archive.

In April 1940, moviegoers viewed a short newsreel titled “The Royal Tour” depicting the King and Queen watching a realistic mock air raid at a site in Birmingham. Members of the AFS (Auxiliary Fire Service) are shown at work with hoses and rescuing volunteer victims. During the same film, the King and Queen watched a demonstration by men of the AFS at Wolverhampton.<sup>22</sup> In August 1940, on another visit to North-West England, the King and Queen inspected both military and ARP preparations. According to the *Times* article “Northern Tour Concluded: Visit to Shipyard” after a day of touring a shipyard and checking on the welfare of the workers, the King and Queen watched a civil defense parade with 1,300 representatives from towns across the county.<sup>23</sup>

In addition to public education films, newspapers, and radio programs, the Air Raid Precautions Department provided a series of handbooks to local communities, civil defense workers, and members of the public. These guides dealt with a series of ARP services including Gas, Fire, and First Aid. The Government released the first one titled *Air Raid Precautions Booklet No. 2* in 1935. This booklet included information on how to deal with a gas attack and while intended for civil defense workers, could also be purchased by the general public. To create awareness about the guide, it was publicized in newspapers across Great Britain. According to the *Nottingham Evening Post*:

This little volume...is called “Anti-Gas Precautions and First-Aid for Air Raid Casualties” and can be bought for 6d. It gives a description of the gases and other chemical agents which might be employed in war and indicates the probable methods of their use...The principal danger from the use of gas, it is declared, arises from the possibility of panic among untrained and undisciplined persons

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<sup>22</sup> Pathé Newsreels “The Royal Tour,” April 25, 1940, British Pathé, 1:29, [The Royal Tour - British Pathé \(britishpathe.com\)](http://www.britishpathe.com).

<sup>23</sup> “The King and Queen: Northern Tour Concluded – Visit to Shipyard,” *Times*, August 30, 1940, The Times Digital Archive.



who have no knowledge of its effects or of the best way to avoid them. The methods of treatment recommended for the various types of gas casualty are outlined and account given of the steps required for the decontamination of personnel and clothing.<sup>24</sup>

The ARP department followed up this guide with books including the *Decontamination of Materials, Incendiary Bombs and Fire Precautions*, and *Training and Work of First Aid Parties*. These books, while primarily for civil defense workers, were available to the public.

The Government also communicated directly with civilians via books and leaflets. In 1938, the Home Office issued the ARP book *The Protection of Your Home Against Air Raids* to every household in Great Britain, sending out approximately 14 million copies. This book gave the public information about how to prepare for an air raid including choosing and stocking a refuge room, gathering first aid supplies, and establishing precautions against fire. Moreover, it included education on the use of respirators, darkening the house, and what to do in the event of a gas and bomb attack. Its introduction asked civilians to do their part in preparing for a future war. As stated, “This book is being sent to you in the confident belief that you will regard it as your duty to read it, to keep it by you, and to act upon it in any premises for which you are responsible; so that if your home or place of business were ever in danger of being attacked from the air, you would know what to do for your own safety and the safety of those who depend on you.”<sup>25</sup>

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<sup>24</sup> “Air Raid Precautions: Handbooks to Help the Public,” *Nottingham Evening Post*, July 31, 1935, 6, The British Newspaper Archive.

<sup>25</sup> Home Office, *The Protection of Your Home Against Air Raids*, March 31, 1937, 1, accessed November 13, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-269.pdf>.

In 1939, Sir John Anderson's Office of the Lord Privy Seal issued a series of Public Information Leaflets including "Some Things You Should Know if War Should Come," "Your Gas Mask: How to Keep It and How to Use It," "Evacuation – Why and How: "Your Food in Wartime," and "Fire Precautions in Wartime." The first one published in July, "Some Things You Should Know," provided a general ARP overview. This 1,000 word document included civil defense topics such as air raid warnings, the use of gas masks, lighting restrictions, fire precautions, evacuation, importance of identity labels, and food rationing.<sup>26</sup> In order to ensure the public received this information, the Government had 15 million copies of each leaflet printed and delivered by the post office on a staggered weekly basis.

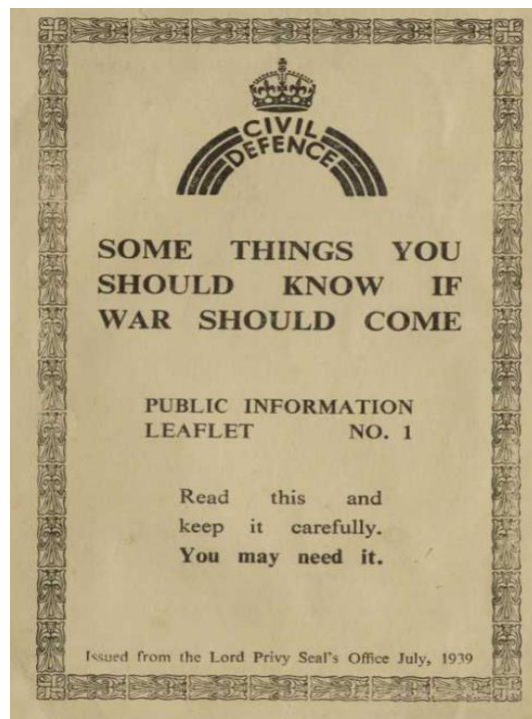


Figure 4-4. Public Information Leaflet (No.1), 1939, People's Collection Wales, accessed February 3, 2021, [Public Information Leaflet no.1: Civil Defence War Leaflet \(peoplescollection.wales\)](https://www.peoplescollection.wales/).

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<sup>26</sup> "What to do in War-Time: Leaflet for Householders" *The Belfast Telegraph*, July 6, 1939, 13, The British Newspaper Archive.

It has been argued however, that sending ARP information to civilians did not prepare them for an air raid attack. Constantine FitzGibbon, in *The Winter of the Bombs: The Story of the Blitz of London*, contends that government pamphlets were ineffective as they were not read by the public. As an example, he describes the Public Information Leaflet provided to every household that provided instructions on how to handle incendiary bombs. He states, “In late 1939 Mass Observation reported that only one-third of the persons interviewed in London could give a correct answer when asked how incendiaries should be dealt with.”<sup>27</sup> FitzGibbon’s assertion assumes a lack of knowledge about fire precautions meant people did not read the leaflets. However, it can be contended that people did in fact read the information provided but that the complexity of putting out incendiaries led to the Mass Observation findings. Evidence of this is exhibited by the ongoing Government fire precautions communications during the Blitz.

During the following year, planners continued to refine civil defense guides and utilize local authorities to help educate the population. In February 1940, they issued a training manual *Basic Training in Air Raid Precautions* to communities. Moreover, officials urged local authorities to educate their civilians. According to *Civil Defence Report (No. 13)*, “It has been made clear to local authorities that this training should be given, not only to A.R.P. personnel but to as many members of the public as possible.”<sup>28</sup>

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<sup>27</sup> Constantine FitzGibbon, *The Winter of the Bombs: The Story of the Blitz of London*. (New York: W.W. Norton & Company, Inc., 1957), 267-268, accessed January 30, 2021, 28, <https://ia902704.us.archive.org/13/items/winterofthebombs010956mbp/winterofthebombs010956mbp.pdf>.

<sup>28</sup> *Civil Defence Report (No. 13) Thirteenth Report submitted by the Minister of Home Security, covering the period from Midnight 4th February, to Midnight 18th February, 1940*, John Anderson, February 23, 1940, 1, accessed February 3, 2021, [Record Type: Memorandum Former Reference: WP \(R\) \(40\) 70 Title: Civil... | The National Archives](#).

In June 1940, a pamphlet entitled *Your Home as An Air Raid Shelter* was put on sale for civilians not entitled to free Anderson shelters. The series of information pieces continued and in July, officials published a booklet entitled *Air Raids – What You Must Know – What You Must Do*. It was sold through local authorities who were urged to help drive its distribution.

In addition to the media and direct mail, the Government utilized a variety of other tactics to help educate and prepare civilians for an attack. These included visual pieces such as cigarette cards, posters, and public notices. In 1938, the ARP department used the creative method of advertising with cigarette companies to reinforce the importance of civilian preparedness. For many years, cigarette manufacturers put cards in packs of cigarettes as a way of enticing smokers to buy their products. Manufacturers grouped cards into themes such as sports and nature. Each card had a picture on one side and written information about the picture on the other. People collected entire sets and put them in albums purchased at a low price from tobacconists. The ARP department collaborated with several manufacturers to create a 48 card set dedicated to Air Raid Precautions. These cards included topics such as establishing refuge rooms, shelter options, the use of a gas masks, and fire precautions.



Figure 4-5. A Garden Dug-Out, W.A. & A.C. Churchman Cigarette Card No. 10, George Arents Collection, Cigarette Cards: 1939-1945. The New York Public Library, accessed September 23, 2018, <https://digitalcollections.nypl.org/collections/cigarette-cards#/?tab=navigation>.

Furthermore, each card album incorporated an introduction from Home Secretary Samuel Hoare, which provided consumers with information about the purpose of the cards:

This series of ARP cigarette cards shows in clear pictures some of the things that the Government and Local Authorities are working out for the protection of the general public and some of the things that each member of the public can do for himself in time of emergency. As Home Secretary I am responsible for a Home Defence Service which might affect the life of any person in the country, and I therefore welcome these cigarette cards for the manner in which they bring home to the householder and his family what they can do for themselves...I commend a study of these cards to your attention.<sup>29</sup>

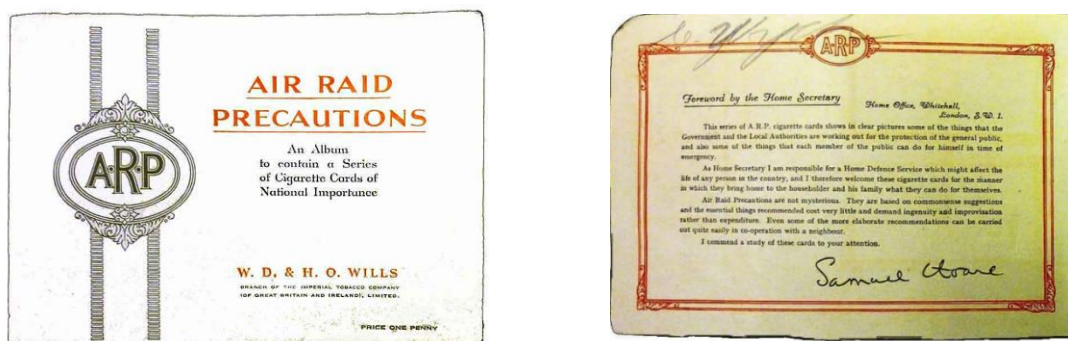


Figure 4-6. Cigarette Card Album cover and forward by Home Secretary, 1938, “The British World War Two Home Front in ARP Cigarette Card Pictures” 1900s.org.uk.

<sup>29</sup> “The British World War Two Home Front in ARP Cigarette Card Pictures: About Cigarette Cards and Cigarette Card Albums,” 1900s.org.uk, accessed November 11, 2020, <https://www.1900s.org.uk/1940s-homefront-images.htm>.

During the 1940s, fifty percent of people over the age of 16 and two-thirds of all men smoked.<sup>30</sup> Due to the popularity of smoking in Great Britain, this method of communication had a broad reach.

The Government also created posters as a quick eye catching way to convey information. In 1939, the ARP department developed a series of posters to help reinforce civil defense messages to the public. For example, as depicted in the poster below, civilians are provided with several steps for putting out a fire. The first picture is of a man lying on a floor, extinguishing a fire using a stirrup pump. The second photograph is of the Fire Brigade arriving at a house fire. The poster title reads, “In an Air Raid, How to Fight a Fire.” This caption is followed by simple instructions for what to do in a fire.

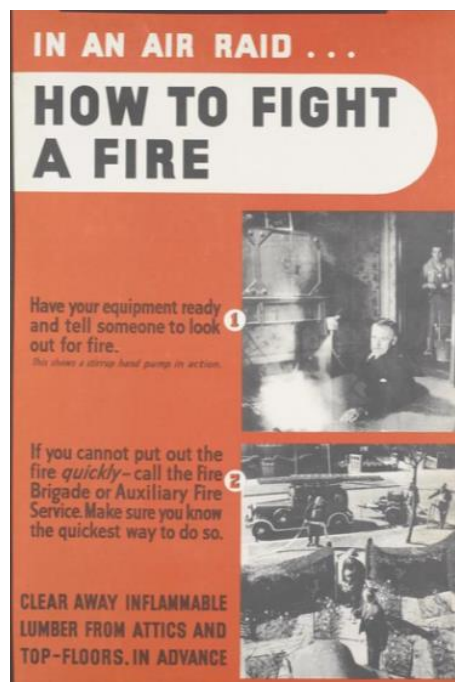


Figure 4-7. In an Air Raid How to Fight a Fire, 1939, Imperial War Museum, Art.IWM PST 13847, [In an Air Raid...How to Fight a Fire | Imperial War Museums \(iwm.org.uk\)](https://www.iwm.org.uk/collections/item/view/13847).

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<sup>30</sup> James Meikle, “Smoking falls to lowest level in UK since recording started in 1940s” *The Guardian*, October 7, 2014, accessed November 11, 2020, <https://www.theguardian.com/society/2014/oct/07/smoking-falls-lowest-level-uk-recording-started-1940s>.

Posters continued to be utilized not only as education pieces but to also recruit both men and women for civil defense roles including Air Raid Wardens, the Auxiliary Fire Service, and Ambulance Drivers. Furthermore, the Government used them to assist civilians impacted by the negative aspects of Air Raid Precautions. For example, in response to the large number of fatalities caused due to blackout conditions, in 1940 the Ministry of War Transport developed a campaign using the press and posters to educate the population about road safety.



Figure 4-8. "Lookout in the blackout," A road safety poster, created by, Pat Keely, 1940, The National Archives, INF 3/293, [The National Archives | Research and learning | Exhibitions | The Art of War | Propaganda | Home Front.](#)

As another way to bring attention to civil defense measures, in July 1940, the Ministry of Information in conjunction with local authorities put up notice boards across the country. In addition, depending upon the community, authorities displayed ARP notices on public buildings, and in shop and pub windows. However, like the leaflets

issued the prior year, the Government was challenged to get people to notice this communication method.

According to an August 6, 1940 Mass Observation study, the size and shapes of boards differed by borough, notices did not stand out, and the public did not look at the information provided. For example, based upon research conducted with 1,200 participants at four boards during 12 different times, over time fewer people looked at the boards and many did not notice them at all. “On June 26, about one person in 5 passing by glanced at the boards, rather better than one in person in 10 examined them closely. This interest rapidly flagged, and by the 30<sup>th</sup> only 2% were looking at the boards, a small proportion only glancing at them as they passed by.”<sup>31</sup> Researchers also observed that women looked more often than men and working class more than middle class people. The study also interviewed pedestrians to see how many were aware the boards existed and approximately only twenty-five percent had any awareness of the boards.<sup>32</sup>

The Government continued to receive mixed feedback about how they informed the public about civil defense efforts. For example, in the Spring of 1940, the Minister of Home Security distributed a personalized ARP card to every household. This card contained information about each household’s local ARP and First Aid Posts, as well as the names of the Senior and local Wardens. Moreover, it also served as another information source about what to do if injured, handling incendiary devices, black-outs, air raid sirens, and gas masks.

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<sup>31</sup> Mass Observation, *Report on M. of I. Notice Boards*, August 6, 1940, 6, Mass Observation Online.

<sup>32</sup> Mass Observation, *Notice Boards*, 6-7.



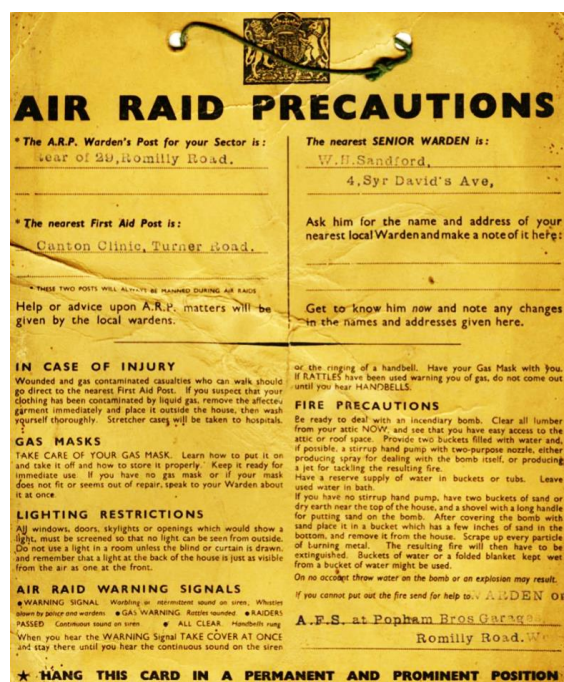


Figure 4-9. Air Raid Precautions Householder's card, 1940, People's Collection Wales, <https://www.peoplescollection.wales/items/44480>.

In June, Mass Observation interviewed 105 mainly working class householders about the ARP card sent out. Based upon their findings, eighty-six percent of the interviewees remembered receiving the card and knew where it was kept. However, when asked the name or address of their local warden, eighty-seven percent did not know the answer.

**Table 4-2. Interviewees: Know the Name or Address of Warden**

<i>Percentage</i>	<i>Accuracy of Answer</i>
12%	Definitely Correct
50%	Doubtful
31%	Wrong
6%	Didn't care or weren't interested

Source: Mass Observation, *Report on A.R.P. Card and its Effects*, June 18, 1940, 2, Mass Observation Online.

In addition, the same report stated that people did not adequately comprehend fire precautions:

Confusion exists about the function of the waters, and there is still a dangerous proportion of people who apparently would use it to throw at an incendiary bomb. For although 78% of people have water ready, less than one household in ten of those visited have a stirrup pump to use the water with. It may safely be assumed that some of these (people) will hurl buckets of water over such bombs...The special type used near the bottom of the card telling people not to throw water on the bomb has not fully registered, perhaps because it is in very light italics.<sup>33</sup>

However, the survey findings concluded that about two thirds of the households interviewed had taken ARP precautions within the home but also recommended additional ways to further educate civilians. As concluded, “You can’t get everybody to do anything unless you repeat and repeat, driving home the message in the same form through many channels.”<sup>34</sup>

It can be argued that overall Government communication effectively informed the general population about civil defense. From 1939 to 1940, the Government sponsored a series of polls facilitated by the British Institute of Public Opinion (BIPO) to find out information about civilian perspectives on a variety of topics including the war, the government, and Air Raid Precautions. In April 1939, interviewers asked 1,849 employed and unemployed people the following question: If there were an air raid today, would you know what to do? Of the responders, less than 40% knew what to do in the event of an attack. Furthermore, only 18.66% of those asked had received civil defense training. However, this is to be expected as many British people still hoped a war could

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<sup>33</sup> Mass Observation, *Report on A.R.P. Card*, 3.

<sup>34</sup> Mass Observation, *Report on A.R.P. Card*, 4.

be averted and therefore took civil defense less seriously than after the declaration of war in September. Nevertheless, this feedback prompted ARP planners to increase the level of communication.

**Table 4-3. Air Raid Preparedness, April 1939.**

<i>Work</i>			<i>At Home</i>		
Prepared (?)	Interviewees (No.)	Interviewees (%)	Prepared (?)	Interviewees (No.)	Interviewees (%)
Yes	376	40%	Yes	529	38%
No	558	60%	No	867	62%
Total	934	100%	Total	1396	100%

*Source:* Question, If there were an air raid today, would you know what to do?, April 1939, Liddell, I., Hinton, J., Thompson, P. (1996). British Institute of Public Opinion (Gallup) Polls, 1938-1946. [data collection]. British Institute of Public Opinion, [original data producer(s)]. British Institute of Public Opinion. SN: 3331, accessed November 6, 2020, <http://doi.org/10.5255/UKDA-SN-3331-1>.

During the same year, on two different occasions, researchers asked civilians about the accessibility of shelters near their home. When asked if there were an air raid today while you were at home could you by foot reach a shelter in seven minutes, over 70 percent of respondents stated no shelter was available. By November 1939, this number had declined to 35 percent.

**Table 4-4. Poll Shelter Availability, 1939**

<b>Shelter Type</b>	Jun-39	Nov-39
Public Shelter	12.20%	34.32%
Private Shelter	11.25%	20.76%
Arranged Private Shelter	4.33%	8.18%
None	70.36%	35.13%

*Source:* Question, Availability of shelter seven minutes from home?, British Institute of Public Opinion, June 1939, November 1939.

Not only do these numbers show significant improvements in shelter availability, but they also reflect an increased awareness by civilians about what to do in an air raid.

In January 1940, the BIPO conducted another poll about lighting restrictions. Interviewers asked 1,943 people the following question: In your opinion is the black-out properly observed in your neighborhood? 70 percent of those interviewed positively responded indicating that civilians understood and followed blackout guidelines.

**Table 4-5. Lighting Restrictions Rules Followed, Jan. 1940**

<i>Blackout Observed</i>	<i>Interviewees (No.)</i>	<i>Interviewees (%)</i>
Yes	1,370	70.58%
No	471	24.27%
Don't Know	100	5.15%
No answer	2	0.00%

*Source:* Question, In your opinion is the black-out property observed in your neighborhood?, British Institute of Public Opinion, January 1940.

Lastly, in July 1940, a BIPO poll asked 1,919 people the following question: Do you approve of the present policy of not sounding air-raid warnings unless there is danger of immediate attack, or do you think warnings should be sounded whenever enemy aircraft are in the neighborhood? Over 95 percent of the respondents expressed an opinion, indicating an awareness of the question and air raid warning implementations.

**Table 4-6. The Sounding of Air Raid Warnings, July 1940**

<b>Warning Frequency</b>	Interviewees (No.)	Interviewees (%)
No Warning Unless Attack	1,094	57.10%
Warning Always	730	38.10%
Don't Know	92	4.80%
No answer	3	0.00%

*Source:* Question, Frequency of warnings – Danger of immediate attack or whenever enemy aircraft are in the neighborhood?, British Institute of Public Opinion, July 1940

Additionally, using data gathered during BIPO polls, by January 1940, 90 percent of those interviewed owned a radio. Furthermore, in 1939 more than 1 billion movie

tickets were sold to the public and British newspapers had a circulation of approximately 10.6 million.<sup>35</sup> These statistics infer that people had access to the communication provided.

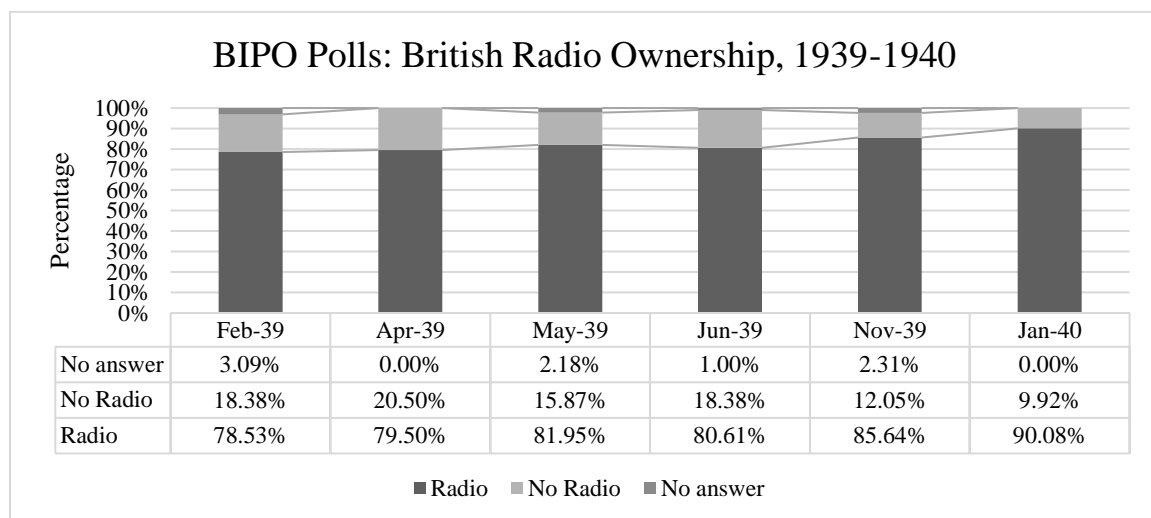


Figure 4-10. Radio Ownership, 1939-1940, Data compiled from British Institute of Public Opinion, February 1939, April 1939, May 1939, June 1939, November 1939, January 1940.

Lastly, in 1940, almost 91 percent of Western Europeans had some level of formal education and in Great Britain, people attended school 7.2 years on average. This reveals that people possessed adequate literacy to understand basic instructions.<sup>36</sup> While the British Institute of Public Opinion polls and Mass Observation studies showed that a portion of the population was unprepared, most civilians received and understood the information provided.

<sup>35</sup> Kevin Williams. *Read All About It!: A History of the British Newspaper*. (London: Routledge, 2010), 153, accessed November 13, 2020, <http://search.ebscohost.com/unk.idm.oclc.org/login.aspx?direct=true&db=e000xna&AN=289819&site=eds-live>.

<sup>36</sup> Bas van Leeuwen and Jieli van Leeuwen-Li, "Education since 1820," in Jan Luiten van Zanden, et al. (eds.), *How Was Life?: Global Well-Being since 1820*, (Paris: OECD Publishing, 2014), 94, 96, accessed November 12, 2020, [https://read.oecd-ilibrary.org/economics/how-was-life/education-since-1820\\_9789264214262-9-en#page15](https://read.oecd-ilibrary.org/economics/how-was-life/education-since-1820_9789264214262-9-en#page15).

As Great Britain prepared for war with Germany, educating the public became a critical component of civil defense. Although officials began communicating via the press in 1932, civil defense messaging accelerated in 1939 as the threat of war grew imminent. In order to ensure civilian readiness, the Government utilized a variety of communication methods including newspapers, radio, movies, direct mail, posters, and public message boards to convey ARP information. Although officials disseminated information via multiple mediums, the complexity of Air Raid Precautions meant it did not always resonate with the public. Moreover, until faced with the reality of war, some civilians did not pay attention to the information provided. After Great Britain declared war on Germany in September 1939, communications increased and BIPO polls reflected a greater public awareness for what to do in an air raid. On September 7, 1940, when daily German air raids began over Great Britain, ARP messaging became even more important as civil defense adapted to the realities of a civilian bombing war.

## Chapter 5 – Reality and Response

### The Blitz and Civil Defense

Even after a year of waiting, the first round of bombs came as a surprise. On September 7, 1940, the Blitz began with an early evening raid on London during which 375 bombers and fighters released explosives over the city. This attack was followed up by an overnight aerial assault lasting until 4:30 the next morning. The German onslaught started over 1,100 fires across London and as noted in the *Civil Defence Report (No. 22)* this number included “60 serious fires and 7 conflagrations, one of which, at Silverton, required 600 appliances.”<sup>1</sup> This initial raid concentrated on the docks and industrial areas of the city and resulted in extensive damage to thousands of homes and factories along the Thames. Furthermore, 435 men, women, and children were killed with an additional 1,600 people seriously wounded.<sup>2</sup>

After the raid, the Luftwaffe Supreme Commander Hermann Göring broadcast its success to the German people. “This is the historic hour when our air force for the first time delivered its stroke right into the enemy’s heart.”<sup>3</sup> September 7<sup>th</sup> was to be the first of many aerial assaults aimed at knocking Great Britain out of the war. This chapter will describe the German bombing strategy employed during the Blitz and its impact on the

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<sup>1</sup> *Civil Defence Report (No. 22) Twenty-second Report submitted by the Minister of Home Security, covering the period from Midnight 1st September, 1940, to Midnight 29th September, 1940*, Herbert Morrison, October 10, 1940, 5, accessed February 3, 2021, [Record Type: Memorandum Former Reference: WP \(R\) \(40\) 196 Title: Civil... | The National Archives](#).

<sup>2</sup> Ministry of Home Security, *Front Line 1940-41: The Official Story of The Civil Defense of Britain*. (London: HMSO, 1942), 12.

<sup>3</sup> Ministry of Home Security, *Front Line*, 10.

British people. It will also outline the changes made to civil defense as authorities and civilians responded to the realities of aerial warfare.



Figure 5-1. Smoke rising from fires in the London docks, following the bombing on September 7, 1940, Mark Shiffer, “This Accident May Have Changed the Course of WWII,” War History Online, June 10, 2018, accessed December 1, 2020, [This "Accident" May Have Changed the Course of WWII \(warhistoryonline.com\)](https://warhistoryonline.com).

For fifty-seven consecutive nights, German raids averaging 200 planes per raid targeted London. Nightly, more than 200 fires burned and during three attacks, bombs and incendiaries started more than 1,000 fires. During the first 22 days and nights approximately 10,000 fires were set leading to the rapid seasoning of Fire Service personnel, most of which had no fire-fighting experience prior to the Blitz.<sup>4</sup> The severity of these blazes took a toll on the fire brigades, killing 50 fire fighters and injuring and additional 500.

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<sup>4</sup> Ministry of Home Security, *Front Line*, 30.



The continuous raiding also injured or killed thousands of civilians. By the end of September, approximately 5,730 civilians had died with an additional 10,000 seriously injured. Although raiders released bombs across Great Britain, the attacks focused on the capital and 85 percent of all casualties occurred in the London area.<sup>5</sup> Furthermore, air raids damaged or destroyed 23 London area hospitals, although few additional casualties resulted from these raids. According to the *Civil Defence Report (No. 22)* “Comparatively few casualties have been caused when hospitals have been damaged, as patients and staff have been in shelters in basements or in strengthened parts of the building.”<sup>6</sup> When needed, patients and hospital staff were also moved to other hospitals. Furthermore, even after extensive raiding during the month, the London region had over 40,000 beds available for wounded civilians with an additional 125,000 beds accessible outside of the city.

By the end of November, 36,000 bombs weighing approximately 6,600 total tons had been discharged over the region killing 12,696 civilians and severely injuring an additional 20,000.<sup>7</sup> In addition to the use of high explosive bombs and incendiary devices, on September 17<sup>th</sup> the Luftwaffe began dropping landmines via parachute. According to the *War Cabinet Weekly Resume (No. 55)* dated September 20, 1940, “The mine is in the form of a cylinder about 8 ft. in length by 2 ft. diameter, and its blast force

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<sup>5</sup> Ministry of Home Security, *Front Line*, 14.

<sup>6</sup> *Civil Defence Report (No. 22)*, 8.

<sup>7</sup> Ministry of Home Security, *Front Line*, 20.

is very extensive.”<sup>8</sup> The use of mines continued throughout the Blitz with some detonating on impact while others failed to explode. In October, the Germans released a new type of anti-personnel bomb over East Anglia and Ipswich. Per the *Weekly Resume (No. 61)* “Reports speak of an outer case releasing a bomb which is cylindrical in shape, about 3-in, and filled with High Explosive. The wall thickness is 3/8 in, and the bomb may cause damage up to 50 ft. away. It is stated that the fuse is delicate, and Police and Wardens have been warned against handling any found unexploded.”<sup>9</sup>

In addition to bombing raids over Great Britain, German pilots engaged in machine gunning civilians. “Instances of machine-gunning have been reported from a number of places and some casualties have resulted. In most cases villages and open towns have been selected for this form of attack.”<sup>10</sup> In November, reports of this type of attack continued. “Machine-gunning of villages, small towns, and railways stations has been a prominent feature.”<sup>11</sup>

To combat the Luftwaffe, the British military engaged in a series of home defense measures including counter attacks by the Royal Air Force. During the months of August and September 1940 the Luftwaffe lost a significant number of planes with September

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<sup>8</sup> War Cabinet, *Weekly Resume (No. 55) of the Naval, Military and Air Situation from 12 noon September 12<sup>th</sup> to 12 noon September 19, 1940*, September 20, 1940, 12, accessed December 17, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-66-12.pdf>.

<sup>9</sup> War Cabinet, *Weekly Resume (No. 61) of the Naval, Military and Air Situation from 12 noon October 24<sup>th</sup> to 12 noon October 31, 1940*, October 31, 1940, 14, accessed December 17, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-66-13.pdf>.

<sup>10</sup> War Cabinet, *Weekly Resume (No. 61)*, 12.

<sup>11</sup> War Cabinet, *Weekly Resume (No. 62) of the Naval, Military and Air Situation from 12 noon October 31st to 12 noon November 7, 1940*, November 7, 1940, 14, accessed December 17, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-66-13.pdf>.

15th alone resulting in the loss of 60 German planes. By end of the month, the Luftwaffe had sustained 621 aircraft destroyed and another 334 damaged. This represented a casualty rate of 69 percent and resulted in a shift to night raiding.<sup>12</sup> Moreover, during the upcoming months, the RAF increased the number of bombing raids over Europe in an effort to shift German focus away from the bombing of Great Britain.

Although Royal Air Force engagements successfully deterred daytime raids, they had minimal success during the night, leading to a reliance on ground level anti-aircraft guns. These weapons manned by home defense units, shot down very few enemy bombers but assisted with civilian morale. For many people it felt like something was being done in response to the bombing raid. In letters sent to friends and family in the United States and Ireland, civilians made the following comments:

“The great and lovely guns that burst Hell’s fire into the Heavens. What a sight!”

“The splendid noise of our guns...the best tonic Londoners have ever had.”

“It’s an awful noise, but it’s wonderful music all the same and we like it and are able to get some sleep while it’s on.”<sup>13</sup>

During the Blitz, the Government increased the number of anti-aircraft weapons used to counter German raids and correspondingly increased home defense personnel. In July 1940, Great Britain had 1,200 anti-aircraft heavy guns, 599 light guns, and 3,932 search lights. By March 1941, these numbers had increased to 1,691 heavy guns, 940 light guns, and 4,532 search lights. Moreover, by May 1941, the number of people in the

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<sup>12</sup> John Philip Ray, *The Night Blitz 1940-1941* (Cassell Military, 1996), 101.

<sup>13</sup> *Home Opinion As Shewn in the Mails to U.S.A. and Eire*, October 4, 1940, 165, accessed February 5, 2021, [cab-66-12.pdf \(nationalarchives.gov.uk\)](https://nationalarchives.gov.uk/cab-66-12.pdf).

Anti-Aircraft Command had doubled from 157,319 to 300,000.<sup>14</sup> Furthermore, during the last few months of the Blitz, technological improvements in radar and the experience gained by gun crews resulted in the destruction of greater numbers of night bombers. According to Ray in *The Night Blitz* “Successes at night rose from seventeen in March to 39 ½ in April, then 31 ½ during the shortened period of Blitz in May. The greatest success came on 11 May, when AA fire was responsible for all six aircraft shot down over Britain.”<sup>15</sup>

Prior to the Blitz, civil defense planners assumed German aggression would include the use of gas against British civilians. While the Luftwaffe never engaged in chemical warfare, Government officials worried that at some point this tactic would change and they continuously reminded civilians to keep their gas masks close. For example, in March 1941, the Government threatened to mandate the carrying of gas masks due widespread complacency by civilians. On March 28, 1941 the *Daily Herald* reported, “If you do not show that you are alive to the danger of the Nazis using poison gas by carrying your mask regularly, you may be compelled to do so.”<sup>16</sup> The article went on to quote Home Secretary Herbert Morrison who stated “The Government is taking fresh steps to ensure that every member of the population carries, practises with and is in every respect familiar with the use of his gas mask...exercises and propaganda will be used to convince you that the Germans may use gas at any time and you must be

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<sup>14</sup> Ray, *The Night Blitz*, 236.

<sup>15</sup> Ray, *The Night Blitz*, 237.

<sup>16</sup> “Carry Your Gas Mask: May Be Order,” *The Daily Herald*, March 28, 1941, The British Newspaper Archive.

prepared. If you do not respond to these exercises and propaganda then compulsion will have to come."<sup>17</sup> Throughout the remainder of the war, people continued to avoid carrying their gas masks and Westminster did not issue a gas mask mandate.

Nazi Germany's bombing strategy relied on the premise that massive daily attacks would quickly destroy civilian morale, disrupt productivity, and force Great Britain to sue for peace. To help maintain civilian confidence, Government leaders visited bombing sites and rest centers, provided updates via radio, and developed morale boosting movies promoting solidarity and perseverance. For example, during the Blitz, Prime Minister Winston Churchill visited multiple bombed areas in the city to view the damage and assess the morale of those impacted by the raids. On September 13<sup>th</sup> after Churchill visited several bombed areas of London, *The Sphere* provided the following comments:

Mr. Winston Churchill paid a visit to the Dockland area of London which had been heavily bombed by the German raiders at the opening of the week. Pressure of business had kept him in Downing Street until the early evening, when he set out on an informal tour of Dockland. Everywhere he went Mr. Churchill was quickly recognised and given a most enthusiastic reception. Crowds gathered around him shouting "Good old Winston." "Cheer up. We are winning," was Mr. Churchill's remark to one East End woman. His tour had not concluded when an alarm was sounded. He stayed for a time in the East End before returning to Downing Street. The following day he paid a visit to bombed areas in the City.<sup>18</sup>

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<sup>17</sup> "Carry Your Gas Mask," 3.

<sup>18</sup> "The Prime Minister in the Bombed Area," *The Sphere*, September 14, 1940, The British Newspaper Archive.



Figure 5-2. Churchill visit to East End after bombing raid, September 1940, “The Prime Minister in the Bombed Area,” *The Sphere*.

Moreover, after each raid, the King and Queen visited bombed areas to offer support to those impacted. As reported in the *Daily Mirror* on September 12, 1940:

“We are so proud of you all,” said the Queen yesterday to an elderly woman whose daughter and grandson were killed in South-East London. “And we are proud of you and the King.” the woman replied.” Continually the Queen has expressed sympathy with women who had lost dear ones. One woman told the Queen “We are not afraid. We can face it all right.” Another woman said to the King and Queen: “Hitler has to have a bodyguard where he goes, but you come down here just like this. God bless and keep you.”<sup>19</sup>

After the bombing of Buckingham Palace on September 13th civilians felt an increased sense of unity with the royal family. The same article referenced the impact of the bombing on the Queen:

When the Queen visited the bombed homes of the women in the South-East of London yesterday, she went with the realization of their own feelings...Because her own home at Buckingham Palace had been bombed the night before and had

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<sup>19</sup> “What the King Said” *The Daily Mirror*, September 12, 1940, The British Newspaper Archive.

been damaged. As the Queen saw the bombed little houses, and the wreckage of years of toil, she became a woman and mother, and broke down in tears.<sup>20</sup>

The perspective of solidarity with the royal family was reaffirmed in an analysis of censored mail, summarized as follows: “The bombing of Buckingham Palace has had a very widespread effect in the suddenly increased expression of affection for, and the very genuine feeling for Their Majesties, there is a distinct implication that they are as much the property and the pride of the people of the country, as say, St. Paul’s, and that therefore an attempt to injure them is a damnable affront.”<sup>21</sup> The report provided several direct quotes confirming this assessment:

“We are all terribly proud of the example of our King and Queen, who, after their home was bombed...went out alone (the King driving) in their car to visit the East End.”

“If anything happened to that grand pair, God help the Germans, for the gloves would come off.”

“The King and Queen are magnificent, going out about among their people and cheering them with their kindness and wonderful courage.”<sup>22</sup>

Throughout the Blitz, the public received updates on the war along with words of encouragement. For example, Winston Churchill in a September 11, 1940 radio broadcast, helped unite the British people in a common cause. “We shall rather draw from the heart of suffering itself the means of inspiration and survival, and of a victory

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<sup>20</sup> “What the King Said,” 6.

<sup>21</sup> *Home Opinion As Shewn in the Mails to U.S.A. and Eire*, 168.

<sup>22</sup> *Home Opinion As Shewn in the Mails to U.S.A. and Eire*, 168.

won not only for ourselves but for all; a victory won not only for our own time, but for the long and better days that are to come.”<sup>23</sup>

King George followed this up with a radio address on September 23<sup>rd</sup> describing the achievements and sacrifices of the British people. He also highlighted the importance of standing together in defiance of Nazi aggression. “The air fleets of the enemy launch fire attacks day and night against our cities. We stand in the front line to champion those liberties and traditions that are our heritage. As we place ourselves for battle there is much to encourage us. We have with us brave contingents from the forces of our allies. We have behind us the goodwill of all who love freedom.”<sup>24</sup> The King also thanked civil defense workers and those who labored in the factories to supply the armed forces. Moreover, he encouraged civilians to hold tight and to trust in the “unconquerable spirit of the British people.”<sup>25</sup> After the radio address, civilians wrote of their appreciation for the King’s speech:

“I heard our great King’s speech last night.”

“The finest he has ever made.”

“Forgetting nothing and no one.”

“And what courage there was in it and God fearing.”

“We were all greatly thrilled by his message.”<sup>26</sup>

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<sup>23</sup> Winston Churchill, “Every Man To His Post,” September 11, 1940, America’s National Churchill Museum, accessed December 18, 2020, <https://www.nationalchurchillmuseum.org/>.

<sup>24</sup> King George IV, “Address to the People,” September 23, 1940, [HM King George VI - HM's Encouraging Address to the People - 23 September 1940 - YouTube](#).

<sup>25</sup> King George IV, “Address to the People.”

<sup>26</sup> *Home Opinion As Shewn in the Mails to U.S.A. and Eire*, 169.



In October, the Ministry of Information released the short film *London Can Take It!*, which conveyed the spirit of the British people as they continued to live and work during nightly bombing raids. This documentary also provided footage of air-raid shelters, fire brigades, and destroyed and damaged buildings to highlight a city that would not give in to tyranny. The Government used this movie narrated by American reporter Quentin Reynolds and distributed throughout Great Britain, Canada, Latin America, and the United States to help build American support for the war effort. It was also well received by those who saw it in Great Britain. According to a Mass Observation report, “The commentary helps to bridge the class gulf...but what seems to excite people most is to see themselves doing things they do.”<sup>27</sup>

To keep a pulse on civilian perspectives during the Blitz, the Government hired Mass Observation to put together a weekly update on a variety of topics including civilian morale, sleep patterns, shelters, evacuation, and confidence in the press. The reports also provided updates from outlying towns and villages across Great Britain and offered feedback on Government propaganda. With over 2,000 people contributing to the reports, Mass Observation provided valuable information to the Government about the mental state of civilians. For example, Mass Observation researchers monitored the sleep patterns of civilians primarily in the London area to gauge the general outlook, productivity, and health of those interviewed. According to their October 4, 1940 *Weekly Report*, researchers found that of the 150 people interviewed, by October two-thirds were sleeping more than four hours per night. This showed an improvement from the first two

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<sup>27</sup> Mass Observation *Weekly Report*, October 4, 1940, 38, Mass Observation Online.

weeks of the Blitz during which on average approximately 25 percent of the population did not sleep at all.

**Table 5-1. Percentage of Londoners Not Sleeping, September 12<sup>th</sup>-October 3<sup>rd</sup>, 1940**

<i>Date</i>	<i>Did Not Sleep</i>
September 12 <sup>th</sup>	31%
September 15 <sup>th</sup>	28%
September 19 <sup>th</sup>	24%
September 22 <sup>nd</sup>	9%
September 26 <sup>th</sup>	7%
September 30 <sup>th</sup>	7%
October 3 <sup>rd</sup>	3%

*Source: Mass Observation Weekly Report, 30.*

Mass Observation also concluded women had a more difficult time sleeping than men, but this gradually improved as people became accustomed to the raids. This is reflected in a survey conducted at the end of October. “There is a further improvement in the sleep position this week, so that on October 24<sup>th</sup>, 0% said they had no sleep, and only 7% less than four hours.”<sup>28</sup>

**Table 5-2. Sleep Statistics London, Sept. 19-Oct. 13, 1940**

<i>Date</i>	<i>Male</i>	<i>Female</i>
September 19 <sup>th</sup>	17%	31%
September 22 <sup>nd</sup>	5%	14%
September 26 <sup>th</sup>	3%	11%
September 29 <sup>th</sup>	3%	14%
September 2 <sup>nd</sup>	0%	11%
September 6 <sup>th</sup>	3%	3%
October 9 <sup>th</sup>	0%	2%
October 13 <sup>th</sup>	3%	12%

*Source: Mass Observation Fourth Weekly Report, 30.*

As civilians adjusted to the attacks, they became more resolved to hold out against the Luftwaffe raids. According to civilian mail sent in September 1940, Government

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<sup>28</sup> Mass Observation *Fourth Weekly Report*, October 24, 1940, 29, Mass Observation Online.

officials summarized the feelings of civilians as follows: “It is impossible to say that the spirit of one part of the city is higher than any other, but the areas which have been the most severely punished are those which are most insistent on holding out to a finish.”<sup>29</sup> The report also contended that people remained positive but had a growing anger towards Germany. Comments pulled from letters validate this conclusion:

“Our foe is pretty desperate...so therefore he is trying to crush the morale of our people, which he will never do.”

“If Hitler thinks he can make the people of London panic, well, he has another think coming. Carry On! We can take it.”

“I love London...but after these days of terrible happenings, my love has become almost an adoration.”

“Boy, am I proud to be British, and am I glad I came Home to my own country, little old England.”<sup>30</sup>

Mass Observation confirmed this Government report of civilian determination in their October 4 *Weekly Report*. “People are beginning to feel that they are strong as individuals as well as part of a strong nation. It has taken a long time for people to believe that Hitler can be stopped and is not infallible.”<sup>31</sup> A month later, Mass Observation’s reports continued to note civilian optimism. “Considering what they have gone through, the people appear to be remarkably cheerful and friendly. It was much

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<sup>29</sup> *Home Opinion As Shewn in the Mails to U.S.A. and Eire*, 163.

<sup>30</sup> *Home Opinion As Shewn in the Mails to U.S.A. and Eire*, 164, 169.

<sup>31</sup> *Mass Observation Weekly Report*, 4.

easier to talk with strangers than it had been formerly, and the worse the conditions the more laughter there seemed to be.”<sup>32</sup>

By the end of November, Londoners had become so conditioned to nightly assaults by the Luftwaffe that they had difficulty adjusting when an attack did not take place. As noted, in the Mass Observation *Eighth Weekly Report*:

Most people are cheerful. But the quality of the cheerfulness has slightly declined on last week. This seems partly due to the relative absence of major news during this week. So terrific have been the events of recent months, that people seem to require constant stimulation...There are again faint signs of “war weariness...In London air-raids are now being taken as in the usual course of events, but there is relief and mild pleasure after a quiet night.”<sup>33</sup>

Although civilians remained resolute, the nightly bombing raids stretched the abilities of ARP workers to save the lives and property of those impacted. The first month of raids also provided important insights into the effectiveness of civil defense efforts. According to the *Civil Defence Report (No. 21)*:

The work of these services has been magnificent during a very trying period. Co-operation between services has worked extraordinarily well. Casualties among personnel have fortunately not been severe, having regard to the numbers engaged. Interruptions in telephone communications have added to the difficulties of the Services. There is still a slight tendency to exaggerate the extent of damage and casualties, causing an excess of services to be dispatched to an incident.<sup>34</sup>

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<sup>32</sup> Mass Observation, *The Fifth Weekly Report*, November 1, 1940, 2, Mass Observation Online.

<sup>33</sup> Mass Observation, *The Eighth Weekly Report*, November 22, 1940, 2, Mass Observation Online.

<sup>34</sup> *Civil Defence Report (No. 21) Twenty-first Report submitted by the Minister of Home Security, covering the period from Midnight 4th August, 1940, to Midnight 1st September, 1940*, John Anderson, September 7, 1940, 5, accessed February 1, 2021, [Record Type: Memorandum Former Reference: WP \(R\) \(40\) 191 Title: Civil... | The National Archives](#).

Moreover, civilians expressed their appreciation for the efforts made by ARP workers in letters sent abroad. “The public services are simply marvelous, within five minutes of the falling of the bomb, Fire Brigade Ambulance, a Clearing Gang and Priest were in attendance.”<sup>35</sup> Another comment focused on the work done by doctors and nurses, “No doctor and no nurse have ever left their duty. Many have been killed, but the rest carry on.”<sup>36</sup>

By October however, the sheer amount of damage inflicted upon London required the military to augment civil defense personnel. “In London military parties have been a valuable reinforcement to the Civil Defence Services in clearing debris, urgent rescue work and the restoration of water supplies. Six companies of Royal Engineers are now to help with road repairs.”<sup>37</sup> Resource constraints continued, and officials worked to supplement existing workers by adding more civilian volunteers whenever possible.

According to the Mass Observation October 24<sup>th</sup> *Fourth Weekly Report*:

In Kilburn, from which particularly good evidence is available, reorganization has become necessary because, in the words of a local Warden, “Of the simple fact that wardens were found asleep at their posts too frequently as to undermine the efficiency of the organization. Early last week one warden was even found asleep among the debris of an incident he was supposed to be dealing with...In this area a system of auxiliary wardens has been created.”<sup>38</sup>

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<sup>35</sup> *Home Opinion As Shewn in the Mails to U.S.A. and Eire*, 170.

<sup>36</sup> *Home Opinion As Shewn in the Mails to U.S.A. and Eire*: 170.

<sup>37</sup> War Cabinet, *Weekly Resume (No. 60) of the Naval, Military and Air Situation from 12 noon October 17<sup>th</sup> to 12 noon October 24, 1940*, October 24, 1940, 12, accessed December 17, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-66-13.pdf>.

<sup>38</sup> Mass Observation, *Fourth Weekly Report*, 19.

To address the strain on existing wardens, civilians volunteered to assist wardens for a specific number of hours each week doing jobs that required minimal training.

In addition to shortages of civil defense workers, September raids highlighted opportunities for improvements in multiple areas of civil defense. Although London Air Raid Precautions included a comprehensive shelter program, for a portion of the public, communal shelters were unavailable or did not provide sufficient protection. Nightly, people began using the underground Tube stations, standing for hours waiting to gain access. By the end of September, the Government had reversed its previous stance on allowing people to shelter in the underground system opting for its potential safety over “deep shelter” concerns and the impact on transportation. According to “The Blitz” by Adrian Gilbert, “It was only with reluctance that the underground railway (subway) system was made available to the people of London as an air-raid shelter, a decision that ultimately saved many thousands of lives.”<sup>39</sup>



Figure 5-3. People sheltering at Aldwych Station, Associated Press, October 9, 1940, London Transport Museum, <https://www.ltmuseum.co.uk/collections/collections-online/photographs/item/2010-23582>.

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<sup>39</sup> Adrian Gilbert, “The Blitz.” Encyclopædia Britannica. March 09, 2017.

Although this only represented a small percentage of the population, images of people living together in the subway became synonymous with shelters. According to Mark Connelly, in *We Can Take It!* “It was estimated that the largest number to seek shelter in the Underground was on the night of 27, September 1940 when 177,000 people entered...It was less than 5 per cent of those left in London.”<sup>40</sup>

Due to the Nazi night bombing strategy, civilians began going into shelters and remaining there all night regardless of the sounding of a warning. Moreover, with a decrease in daylight raiding, fewer people in London took shelter during daytime raids and instead continued to go about the city as normal. According to the Mass Observation *Third Weekly Report*:

Whereas before many ran to shelter at the sound of sirens, now a runner is rare. Now the sound of guns, and to a much less extent the sound of planes makes some people run. But many come out to look. Interruption of any other activity by daylight sheltering appears to have decreased. Shopping and traveling continued almost normally except in the worst raided areas.<sup>41</sup>

As evidence, the report identified a reduction in people sheltering in the Kensington shelter from 35 people per day in September to six people (four of which were children), by Mid-October. Conversely, people became more careful at night:

People are actually more nervous of night raids now than a month ago, and less nervous of daylight raids – though there are important local variations of this...It is difficult to generalize safely as so much depends on whether there has been recent severe daylight raids or night lull in the areas. A great many people are now in their shelter when the night alarm goes, instead of waiting for it as before.

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<sup>40</sup> Mark Connelly, *We Can Take It!* (Hoboken: Routledge, 2014), 61. eBook Academic Collection (EBSCOhost), EBSCOhost.

<sup>41</sup> Mass Observation, *Third Weekly Report*, October 18, 1940, 21, Mass Observation Online.

At night, the sound of the siren alone makes many who are still out quicken their pace.”<sup>42</sup>

This change in civilian behavior created the need for additional shelters as well as improved living conditions in existing ones, which were not equipped for overnight use. Utilizing rights given to the Government by the Defence Regulation passed in 1939, officials empowered local authorities to appropriate commercial and private shelters for use by the general public. In addition, Westminster mandated that local authorities add amenities to the existing shelters in London as noted in the *Civil Defence Report (No. 22)*. “In addition to bunks, large numbers of which are being ordered, local authorities have been asked to press on with the provision of lighting (where this does not exist), drinking water, sanitary arrangements, and first aid equipment.”<sup>43</sup> The Government also asked authorities to appoint full-time shelter wardens and agreed to fund the costs associated with shelter improvements.

In October, Mass Observation conducted a series of polls to identify how often people used the Tubes and how frequently they were used. According to the study, 12 percent of people questioned had said they spent at least one night in a Tube station. Of this group, two-thirds had spent only one night whereas 4 percent consistently sheltered in the Tubes. Mass Observation concluded, “About one Londoner in twenty-five is a more or less regular Tube user, though by no means necessarily using the Tube every

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<sup>42</sup> Mass Observation, *Third Weekly Report*, 21.

<sup>43</sup> *Civil Defence Report (No. 22)*, 6.



night. Much the largest single group are still those using their home shelters, and insufficient attention is being paid to their problem.”<sup>44</sup>

The survey also provided reasons why people did not shelter in the Tubes including overcrowding, unsanitary conditions, and waiting lines to access the shelter. Moreover, civilians had a negative perception against those who sheltered in the Tube assuming only the “Dregs of society” used them. As noted in the report “This prejudice is no means confined to the upper or middle classes, and it extends to officials as well as to the general public...Prejudice against the Tube shelterers was more marked among women than among men.”<sup>45</sup> The report went on to recommend issuing tickets to shelterers with specific allotted spots and then rotating them weekly in order to help with the long lines of people waiting for hours in the rain to get the best spots each night.

In response to this study and after officials visited multiple shelters, the Government ordered 1.75 million bunks and worked with local authorities to improve the sleeping conditions found in communal shelters. During a November 3rd radio broadcast, newly appointed Home Secretary Herbert Morrison announced measures for shelter improvements to rectify the issues experienced during the first two months of the Blitz:

There is no logic and no humanity in tolerating unnecessary danger or discomfort. I want to bring it about that everyone shall be as safe, and sleep as comfortably, and be as healthy as the onset of war allows. I know what a sort of life this Blitzkrieg has brought to the people in our big cities. I have seen much and heard

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<sup>44</sup> Mass Observation, *Fourth Weekly Report*, 20.

<sup>45</sup> Mass Observation, *Fourth Weekly Report*, 20.

more, and I understand the background of it all. What I can do to make life easier, that I will do.<sup>46</sup>

He also announced that the Minister of Health was adding medical services to large shelters including the addition of doctors and First Aid Posts. Officials also added a ticketing system to eliminate the queuing issues identified in Mass Observation reports.

Initially civilians had mixed feedback about shelter improvements as they deviated from their normal experience. According to Mass Observation's November 1<sup>st</sup> *Fifth Weekly Report*:

In the Tilbury Shelter front part, three tier bunks have been put up. On the whole they are not popular yet. Regulars tend to resent having the floor space on which they had been accustomed to spreading their bedding and food, taken away. And it is difficult to sit up in any of the bunks, so that you must either lie or stand. This breaks up the picnicing that went on from 4p.m. onwards. When a family has taken a complete tier of bunks, they quite often take out the middle one, which makes it possible to sit on the bottom one. There is a feeling that one is somehow nearer to a neighbour when vertically above or below, than when side to side...Probably, when people have got used to them, they will be more popular.<sup>47</sup>

Ongoing updates by Mass Observation provided additional feedback on shelter enhancement programs. For example, the November 8<sup>th</sup> update noted that shelterers at the Holland Park Tube station appreciated the addition of a canteen.<sup>48</sup> Whereas the November 22<sup>nd</sup> *Weekly Report* identified several challenges including the delay in adding bunks to some shelters. In addition, the report commented on the cold and dampness of surface and trench shelters. It also specifically called out the flooding in trenches in

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<sup>46</sup> *Air Raid Shelter Policy, Minister's Broadcast*, Herbert Morrison, Minister of Home Security October 31, 1940, 2, accessed February 7, 2021, [cab-67-8.pdf \(nationalarchives.gov.uk\)](https://nationalarchives.gov.uk/cab-67-8.pdf).

<sup>47</sup> Mass Observation, *The Fifth Weekly Report*, 12.

<sup>48</sup> Mass Observation, *The Sixth Weekly Report*, November 8, 1940, 13, Mass Observation Online.

Southwark and noted that the Morecombe street surface shelter had between a half to one inch of standing water on the floors of the shelter. With concerns over the potential of an epidemic for those living in these conditions, in response the Government added heating units to some of the shelters to assist with the cold issue.<sup>49</sup> Furthermore, by April 1941, officials had installed bunks for approximately 600,000 shelterers in the London area. In addition, the Ministry of Health worked with local officials to add catering services to most shelters along with improved heating, lighting, and ventilation.<sup>50</sup>

For those sheltering in underground stations, this did not guarantee protection from a bomb, and throughout the Blitz people were killed during bombing raids, confirming Government concerns about mass groups of people together at one time.

**Table 5-3. Station Bombings, September 1940-January 1941**

<i>Station</i>	<i>Bombing Date</i>	<i>Deaths</i>
Colindale	September 25, 1940	8
Marble Arch	September 17, 1940	7
Trafalgar Square	October 12, 1940	7
Bounds Green	October 13, 1940	17
Paddington	October 13, 1940	9
Balham	October 14, 1940	66
Camden Town	October 14, 1940	5
Lambeth North	January 1, 1941	1

*Source:* Data adapted from Nick Cooper, “The Underground At War,” Last updated 2010, accessed February 6, 2021, <http://www.nickcooper.org.uk/subterra/lu/tuaw.htm>.

The public also had concerns about street level communal shelters, which were not designed to withstand a direct hit. In spite of Government efforts to reverse the concerns of the public, many avoided using these shelters. The October 4, 1940 issue of

<sup>49</sup> Mass Observation, *The Eighth Weekly Report*, 12.

<sup>50</sup> Ray, *The Night Blitz*, 252.

*War Illustrated*, under the headline “Surface Shelters Have Saved Thousands of Lives,” published photos of surface shelters unscathed after bombing raids with the following commentary: “Surface shelters... which, as the photographs in this page show, have stood up quite well against the bombs... The public shelter had 159 people in it; it was undamaged and the people in it escaped unharmed when a bomb fell nearby and covered it with debris.”<sup>51</sup>



Figure 5-4. Surface shelter emerges unscathed after bombing raid, 1940, *War Illustrated*.

In an October 1940 BIPO Poll, people were asked: Do you think the Government has been wise or unwise in favoring the building of surface shelters rather than underground shelters? Over 65 percent of respondents thought the Government’s policy was unwise.

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<sup>51</sup> “Surface Shelters Have Saved Thousands of Lives,” *War Illustrated*, October 4, 1940, *War Illustrated Archive* (1939-1941), accessed September 27, 2018, <http://www.ibiblio.org/pha/TWI/>.

**Table 5-4. BIPO Poll – Surface Shelter Policy, Oct. 1940**

	<i>% of Respondents</i>
<b>Wise</b>	15.35%
<b>Unwise</b>	65.20%
<b>Don't know</b>	18.64%

*Source:* Question, Do you think the Government has been wise or unwise in favoring the building of surface shelters rather than underground shelters?, Liddell, I., Hinton, J., Thompson, P. (1996). British Institute of Public Opinion (Gallup) Polls, 1938-1946. [data collection], October 1940, British Institute of Public Opinion, [original data producer(s)]. British Institute of Public Opinion. SN: 3331, accessed November 6, 2020, <http://doi.org/10.5255/UKDA-SN-3331-1>.

By November, the perception of surface shelters had deteriorated further and in a Mass Observation survey 71 percent of those interviewed believed the government should have built underground shelters.<sup>52</sup>



Figure 5-5. Surface Shelter Poster, Ministry of Home Security, Imperial War Museum, Art.IWM PST 13867, [The Surface Shelter Stands Up to it Well | Imperial War Museums \(iwm.org.uk\)](http://www.iwm.org.uk).

In some instances, surface shelters also had issues with the strength of the materials used, therefore justifying the negative public perception. Robert MacKay in *Half the Battle Civilian Morale During the Second World War* concludes, “This was a consequence partly of cost saving by firms contracted to build the shelters, and partly of misleading Ministry of Home Security instructions to local authorities in April 1940,

<sup>52</sup> Mass Observation, *Nineth Weekly Report*, November 29, 1940, 10, Mass Observation Online.

which led some borough engineers to believe that cement-less mortar had official approval.”<sup>53</sup> As a result, after air raids destroyed multiple surface shelters, officials replaced many of the older surface shelters with ones made from concrete and steel rods.

In addition, at the end of October, the Government reversed its prior decision and authorized the construction of several bomb-proof shelters next to existing underground transit stations. During the October 30, 1940 War Cabinet meeting, the Minister of Home Security, Morrison, described the changing air raid requirements fueling this decision:

Our Air Raid Shelter Policy had been governed by the assumption that raids would be comparatively short, and that shelters must be readily accessible. Prolonged night raiding had, however, led certain sections of the public to seek shelter, irrespective of warnings, towards nightfall and to stay there until morning. The arguments against deep shelters which had hitherto prevailed were, therefore, no longer entirely valid... While it was impossible to apply any widespread policy of deep shelter which could be applied evenly over the vulnerable areas of the country, the Minister felt that it would not be right, on this account, to dismiss the possibility of deep shelters.”<sup>54</sup>

By 1942, ten shelters with a capacity of 8,000 people each had been completed at an average cost to build of £35 to £45 per person. Although, they were not completed until after the Blitz, they were available for bombing raids later in the war.

Other complaints by the public centered around the Anderson Shelters, which were prone to flooding and uncomfortable for those trying to sleep inside them. As described by Kathleen Brockington who spent nights in her family’s Anderson shelter,

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<sup>53</sup> Robert Mackay, *Half the Battle Civilian Morale in Britain During the Second World War* (Manchester: Manchester University Press, 2003), 188.

<sup>54</sup> War Cabinet (280), *Conclusions of a Meeting of the War Cabinet, held in the Cabinet War Room, S.W. 1, on Wednesday, October 30, 1940, at 1 2 NOON*, October 30, 1940, 269, accessed February 6, 2021, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-65-9.pdf>.

“In 1940 the air raids started up proper. Like lots of others down our street we had an Anderson shelter in our garden, but it was dreadfully damp so in the end we used to sleep under our big oak table.”<sup>55</sup> In order to assist with the uncomfortable conditions of the Anderson shelters, the Government issued instructions on how to build above ground beds and provided heating options to shelterers. In spite of these challenges, the Anderson Shelter saved countless lives with about 20 percent of the population using them throughout the Blitz.



Figure 5-6. An Anderson shelter remains intact amidst destruction in Latham Street, Poplar, London during 1941, Ministry of Information Divisional Photographer, Imperial War Museum, D 5949, <https://www.iwm.org.uk/collections/item/object/205198906>.

By 1941, most civilians chose to remain in their home versus use a public shelter. In a BIPO poll conducted in January, of the 2,175 people interviewed, almost 40 percent used Anderson shelters or reinforced basements while only 15 percent utilized public shelters. Moreover, approximately 44 percent of those polled did not have any type of protection during a raid.<sup>56</sup>

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<sup>55</sup> Kathleen Brockington, “Kathleen’s story: Bombed out in the London Blitz,” Time Witnesses, Transcribed from a tape-recorded conversation by Harvinder Jauhal. August 1994, Accessed September 19, 2018, <http://www.timewitnesses.org/english/blitz.html>.

<sup>56</sup> British Institute of Public Opinion, January 1941.

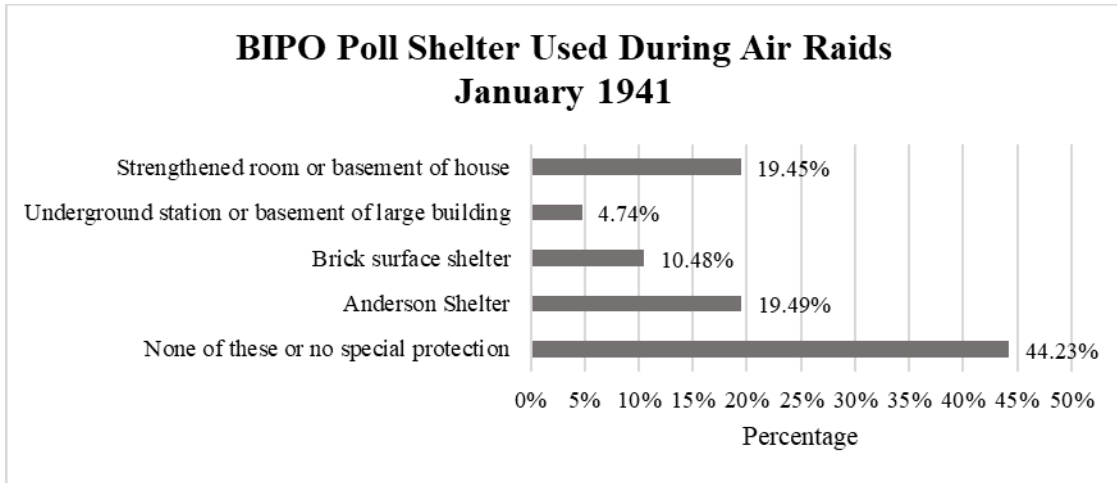


Figure 5-7. Shelter Used During Air Raids. Source: Question, What kind of shelter do you use during night raids?, British Institute of Public Opinion, January 1941.

In the same BIPO poll, 41 percent of civilians were satisfied with their shelters. However, other civilians continued to express dissatisfaction with their existing shelter options due to safety, health, and comfort issues.

**Table 5-5. Shelter Satisfaction, January 1941**

<i>Shelter Satisfaction Reason</i>	<i>Interviewees (%)</i>
Satisfied	41.11%
Best we can do; it's all we've got	3.85%
Don't want any, don't bother	6.26%
Haven't had to use them yet	4.50%
Rather risk than discomfort	1.61%
Damp	5.41%
Cold and Drafty	5.41%
Not Strong enough	3.00%
None Nearby	5.68%
Inadequate shelters, unhealthy, etc. so stay home	3.37%
Dissatisfied but unspecific	5.14%
Would like better shelters	4.28%
Want deep shelters	4.76%
Need improvement in existing shelters	1.50%
Fatalistic	1.39%
Insanitary and uncomfortable	2.73%

Source: Question, Are you satisfied with your shelter?, January 1941, British Institute of Public Opinion.



To support civilians with no home shelter options, the Government developed the Morrison Table Top Shelter for use inside the dwelling. Morrisons had multi-purpose functional and could be used as both a shelter and dining table. These shelters were provided free of charge to those who made less than £350 per year plus allowances for children.<sup>57</sup> Although not widely available until the end of the Blitz, over 500,000 of them were provided and used during the remainder of the war.



Figure 5-8. A Morrison shelter set up in a dining room, 1941, Ministry of Information Photo Division Photographer, Imperial War Museum, D 2053, <https://www.iwm.org.uk/collections/item/object/205197886>.

With the September onset of Luftwaffe bombing raids, explosive bombs, and fires destroyed or damaged a significant number of homes. According to the *Civil Defence Report (No. 22)*:

For the week ending 21<sup>st</sup> September 1940, it is estimated that 43,800 houses were damaged of which 39,000 were repairable, while the following week 54,300 houses were damaged, of which 51,000 were repairable. Roughly two-thirds of the damage occurred in the London Civil Defence Region.. These figures compare with the roughly estimated total of 93,000 houses damaged from the beginning of the war until 14 September, 1940, of which 87,000 were repairable.<sup>58</sup>

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<sup>57</sup> “Morrisons Are On The Way: Shelter Dining Table and Bed Combined,” *Kensington Post*, April 12, 1941, The British Newspaper Archive.

<sup>58</sup> *Civil Defence Report (No. 22)*, 4.

In addition, the scale of destruction revealed deficiencies in the process of helping people made homeless by the attacks. As displaced civilians crowded into rest centers, these facilities became overwhelmed. Rest centers, which had been established to support people for short periods of time, were not adequately supplied or staffed to handle the magnitude of long-term homeless people. Moreover, the German use of delayed action bombs and bomb disposal squad delays added to the overcrowding as people waited for information on the status of their homes. In response, ARP personnel added daily hot meals and other amenities to the centers. Furthermore, in London the Government required that all centers have a nurse on duty twenty-four hours a day. Moreover, Westminster facilitated better coordination between agencies to assist displaced civilians transition from rest centers into housing.<sup>59</sup>

In September, the Minister of Health, Malcolm MacDonald issued a communication to local authorities summarizing the help available to those displaced due to enemy raiding. This information was also publicized in newspapers throughout Great Britain. According to the September 19th *Daily Mirror* article “Rest, Meals, Money for the Homeless:”

People rendered homeless should go to rest centres for meals and temporary shelter, it is stated. Travel vouchers can be supplied if they can go to friends, and financial aid will be given to those in temporary need. Advances will be made towards the cost of replacing furniture and clothing. Injury allowances are payable after several days’ incapacitation, or before, if necessary, and pensions for wage earners suffering prolonged displacement and their dependents. Local authorities will effect repairs to houses, protect furniture and goods in damaged

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<sup>59</sup> *Civil Defence Report (No. 22)*, 9.

premises and find billets...Arrangements have also been made for replacing lost ration books, identity cards, gas masks and pension books.”<sup>60</sup>

Furthermore, the article encouraged people impacted by the raids to go to the rest centers for information on next steps.

MacDonald also sent a separate communication to local authorities instructing them to quickly repair houses when possible to help reduce the number of people located in temporary housing. As noted in a September 16th *Daily Mirror* article “Raid Damage-Call for Quick Action:”

With air attacks on a wider scale, the most important aspect of first-aid repairs is their completion with the utmost possible speed, so as to avoid the necessity for removal of the occupants and to prevent further damage to-houses and contents by exposure to the weather. The aim of the local authorities in all cases should be to see that before less urgent repairs are undertaken, no damaged house capable of repair is left with roof and windows uncovered.<sup>61</sup>

By the end of November, the numbers of people living in rest centers had declined from 24,000 at its peak to 6,000.<sup>62</sup> Throughout the remainder of the Blitz, rest centers continued to serve an important role and the number of displaced people housed within them fluctuated based upon the severity of an assault. Furthermore, the speed at which people transitioned out of the centers significantly improved. For example, of the

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<sup>60</sup> “Rest, Meals, Money for the Homeless,” *Daily Mirror*, September 19, 1940, The British Newspaper Archive.

<sup>61</sup> “Raid Damage-Call for Quick Action,” *Daily Mirror*, September 16, 1940, The British Newspaper Archive.

<sup>62</sup> War Cabinet (297), *Conclusions of a Meeting of the War Cabinet, held in the Cabinet War Room, S.W. 1, on Wednesday, November 27, 1940, at 5 P.M.*, November 27, 1940, 137, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-65-10.pdf>.

11,834 people made homeless after the last German night raid of the Blitz, within one week, 70 percent of those displaced had been transitioned into another form of housing.<sup>63</sup>

In addition to services for those made homeless, the Government continued to evacuate women and children from high risk or recently bombed areas including areas outside of London. For example, on September 11th, officials began evacuating members of the public from East and South East coastal towns to safer reception areas such as Berkshire, Somerset, and Northamptonshire. For those unable to provide their own transportation, ARP personnel arranged special trains to transport evacuees. Within three days 48,000 mothers with their children and elderly or frail civilians were evacuated by the trains and an additional 60,000 left by other methods.<sup>64</sup> Furthermore, in the London area, the Government evacuated 30,000 children, relocated 10,000 mothers with their children, and set up additional country residential nurseries for children under the age of five traveling without their mothers. In addition, authorities transported elderly and ill civilians residing in the rest centers to hospitals and other institutions outside of the city.

Despite multiple requests, some people refused to evacuate, and children continued returning to their homes on a daily basis. Even after two weeks of daily raids, by September 21<sup>st</sup> 4,000 evacuees had arrived back in London. On October 1, 1940, Malcolm McDonald extended the evacuation area of London from an existing eight

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<sup>63</sup> Laurence Ward, *The London County Council: Bomb Damage Maps 1939-1945* (London: Thames and Hudson LTD, 2015), 35.

<sup>64</sup> *Civil Defence Report (No. 22)*, 6-7.

boroughs to an additional six areas and pressed people to evacuate when possible.

According to an October 2<sup>nd</sup> *Daily Mirror* article:

More than 10,000 mothers and children have already gone, and 2,000 more will be going today. There are still nearly 100,000 mothers and children remaining in the eight London boroughs where opportunity for evacuation has already been given. Mothers in these eight boroughs, as well as the six additional boroughs where notices are posted, are again urged to evacuate. Any mother who has lost her home anywhere in the London County Council area, or in the boroughs of East Ham and West Ham, can be evacuated with her children of any age if they register at the nearest emergency rest center.<sup>65</sup>

In October, Mass Observation conducted a study to determine why so many children remained in London and identified a variety of reasons why parents would not evacuate their kids:

- i. One place is little safer than another.
- ii. Anxiety of waiting for news if children are far away in possibly bombed area outside of London.
- iii. Family should stay together in times like this.
- iv. Lack of time limit for the separation – might be ten years.
- v. Child itself feels less nervous with parents.
- vi. Child seems unaffected by raids.
- vii. Evacuation fiasco at beginning of war.
- viii. The worst of the raids on London are over.<sup>66</sup>

Over the next month, the Government debated whether or not to forcibly evacuate children and decided against it. However, appeals to parents to remove their children from London continued and on November 3<sup>rd</sup> Home Secretary Morrison made the following public speech:

Hundreds of thousands still remain in the Blitzkrieg. The front line is not the place for children. None of us can be happy to think of them, needlessly subjected to danger and strain with no fair change for health and education. It is

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<sup>65</sup> “Off to Safety,” *Daily Mirror*, October 2, 1940, The British Newspaper Archive.

<sup>66</sup> Mass Observation *Second Weekly Report for Home Intelligence*, October 11, 1940, 16, Mass Observation Online.

the duty of parents to let us get their children out, as we can do, effectively and kindly, to where they can live more normal lives. Moreover, those who remain are hindrances to our war effort, and their removal will help the work of Civil Defence.<sup>67</sup>

While 100 percent evacuation of children never occurred, by year end 1940, the Government had successfully evacuated 83 percent of the children from London with only one in six still remaining.<sup>68</sup>



Figure 5-9. Evacuation poster, children sitting against the brick wall of an air raid shelter, Ministry of Health, Imperial War Museum, Art.IWM PST 15104, <https://www.iwm.org.uk/collections/item/object/32476>.

Throughout the remainder of the Blitz, evacuations continued with people returning during bombing lulls. For those evacuating, the process worked satisfactorily. However, the massive displacement of people throughout the country led to a lack of space for evacuees. As noted by Mass Observation:

The Government scheme is working reasonably well except for a tendency to send people to places already full of Government and voluntary evacuees, so that a Government batch arrive and there is no room for them anywhere. This difficulty is usually overcome but produces friction... Voluntary evacuees have now got as far as Scotland and Yorkshire from London. The home counties North

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<sup>67</sup> *Air Raid Shelter Policy, Minister's Broadcast, 2.*

<sup>68</sup> Minister of Home Security, *Front Line*, 66.

and West of London are now heavily overpopulated...The whole thing has much more goodwill, both from residents and refugees, than before.<sup>69</sup>

With the onset of the Blitz, the realities of bombing attacks necessitated several changes to the air raid warning system. With a goal to protect workers while continuing wartime manufacturing, on September 10<sup>th</sup> the Government issued the leaflet “Working after the Siren” to workers and employers. This circular encouraged them to keep working during a warning and to only stop if a raid was imminent. Furthermore, it recommended companies add roof watchers as well as protection to factories to help ensure the safety of workers. This policy was also extended to public transportation services to assist with keeping traffic flowing throughout the city. In October, officials began adding Alarm Officers to Royal Observer Corps Centres across Great Britain as a way to augment the roof spotters. These Officers were tasked with communicating air raid warnings directly to local firms engaged in critical wartime production activities.

Enhancements continued with the addition of a second warning for incendiary devices. In January, in response to a massive German incendiary attack on the night of December 29, the Government added a short sharp whistle by wardens and police to warn the public about this type of bomb. Officials also made changes to the warning process. Beginning in February 1941, the Government modified air raid warning districts into smaller sub-districts in order reduce the number of warnings given in areas less likely to be attacked. Furthermore, the communication of air raid warnings moved from Fighter

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<sup>69</sup> Mass Observation *Second Weekly Report*, 15.

Command to the Headquarters of Fighter Groups to ensure more accurate warnings.

These changes were completed in June 1941.<sup>70</sup>

Luftwaffe bombing attacks made it difficult for fire fighters to manage all of the blazes caused by explosive bombs. Moreover, the thousands of incendiary devices released on a nightly basis further exacerbated the situation by causing larging numbers of small fires, which rapidly spread. After the first month of the Blitz, the impact became apparent as fire brigades in specific districts became overtaxed. To resolve this issue, officials increased the number of fire service personnel and implemented a fire-watching system to help catch fires at their onset. According to the October 18<sup>th</sup> Mass Observation *Weekly Report*, “The fire-watching system now in use in several areas seems to be going well, and to satisfy many people. In Streatham, the fire-watchers take over wardens’ duties for some hours each night.”<sup>71</sup> Westminster also mandated that companies with more than 30 employees, large warehouses, and lumber yards have full-time fire watchers monitor the premises. As noted in the *Yorkshire Post and Leeds Intelligencer*, “Watchers must be in readiness to detect any outbreak fire, or to take other action, all times when hostile attack is in progress and at any time when public warning is in operation.”<sup>72</sup>

At the local level, teams of fire-watchers worked together by patrolling streets during raids in order to prevent fires when possible. According to the Air Raid

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<sup>70</sup> Home Office, *History of the Air Raid Warning System, September 1939 – March 1944*, Approx. date 1945-1957), 7-9, 14, The National Archives, Kew, Item HO 186/2464.

<sup>71</sup> Mass Observation, *Third Weekly Report*, 12.

<sup>72</sup> “City of Leeds Fire Watcher Order, 1940,” *Yorkshire Post and Leeds Intelligencer*, September 30, 1940, The British Newspaper Archive.



Precautions Handbook No. 9 *Incendiary Bombs and Fire Precautions* the equipment used for fire-watchers included a stirrup-hand pump used to put out the fire, two or more buckets to hold water, and a supply of sandmats. In addition, The guide also recommended the use of an axe and hand-lamp as needed to break up floorboards or paneling and as light in the event of a power failure.<sup>73</sup>



Figure 5-10. Stirrup Pump with Bucket, Imperial War Museum, FEQ 418, [stirrup pump \(with hose\) | Imperial War Museums \(iwm.org.uk\)](https://www.iwm.org.uk/collections/object/feq-418).

Moreover, recommended duties were classified down to the specific member of the fire watching team.

**Table 5-6. Local Fire Party Duties, 1940**

<i>Team Member</i>		
<i>No. 1</i>	<i>No. 2</i>	<i>No. 3</i>
Is in charge of the team. Selects position for pump. Goes forward with the nozzle to deal with incendiary bomb and resulting fire. Gives orders “Water on” or “Water off” as required.	Operates pump at about 70 full strokes per minute for jet and 35 strokes per minute for spray asking No. 3 to relieve him when desired.	Lifts hose forward to No. 1; maintains water supply and relieves No. 2 as necessary; keeps in touch with No. 1.

Source: Air Raid Precautions, *Handbook No. 9*, 52

<sup>73</sup> Air Raid Precautions, *Handbook No. 9 (1st Edition): Incendiary Bombs and Fire Precautions*, June 1940, The National Archive, Kew, Item HO 186/1780, 50.

In September 1940, although wardens and fire-watchers had a significant role in extinguishing fires caused by incendiaries, they could not legally enter a burning building, which limited their effectiveness as a supplemental fire service. This issue, however, was rectified in October, when the Government issued a regulation giving wardens and voluntary street fire-fighting parties the authority to enter a dwelling for fire-fighting purposes. According to the October 29, *Birmingham Daily Gazette* article, “Wardens May Enter Houses If On Fire” “The order provides that these powers may be exercised for the purposes of extinguishing fires or for protecting property or rescuing persons, or property from fire. Special authority in writing will be issued by local councils to members of recognised firefighting parties. The air raid wardens card of appointment and identity card will be his authority.”<sup>74</sup>

On the night of December 29<sup>th</sup> more than 120 aircraft attacked the City of London, docks, and several boroughs. Bombers dropped approximately 120 tons of high explosives and 11,000 incendiaries during this raid causing 1,500 fires, six conflagrations, and sixteen other major fires.<sup>75</sup> Called the “Second Great Fire of London” the inferno caused by this raid destroyed about two-thirds of the buildings in an area surrounding St. Paul’s Cathedral. According to the account from one reporter:

In the first half of a genuine lightning raid enemy bombers showered fire bombs in the vicinity. There was a remarkable absence of high-explosives. Again and again planes came back, dropping more and more incendiaries. The firemen, A.F.S. men, climbed over roofs and leaned perilously out over windows to deal with the brilliantly burning bombs. As fast as they extinguished them, however,

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<sup>74</sup> “Wardens May Enter Houses If On Fire,” *Birmingham Daily Gazette*, October 29, 1940, The British Newspaper Archive

<sup>75</sup> Ray, *The Night Blitz*, 176; *Front Line*, 32.

the air became filled with the machine-gun-like patter of another Molotov breadbasket. Gunfire rumbled practically continuously.<sup>76</sup>

Another article published in the *Western Mail* titled “Nazis’ Flaming Malice

Only Stiffens London's Will” described the fire-bombing of the city:

Monday Night, malice, desperation, and fury reached their zenith during last night—a night which no one who experienced it will ever forget—when incendiary bombs literally rained on London in an attempt to fire the city. Thousands of bombs came down in this the greatest fire-raising raid of the war. At times the whole area of Greater London was illuminated from the red and orange glow over the City itself, and that not surprising when one considers that in one district 40 fires were seen burning at one time. And as the brave fire-fighters got some of the outbreaks under control new fires were continually breaking out. All through the night the stupendous struggle continued, and what amazed me as I toured the city to-day was the triumph of all concerned keeping the destruction within bounds...to-day London carried on as usual amid the smouldering ruins sad about the havoc and more than ever determined to see this thing through to the victory which will mean the doom of Hitler and his Nazi maniacs.<sup>77</sup>

After the destruction caused by this raid, it became apparent that additional fire service changes needed to be made. According to the Ministry of Home Security’s *Front Line* published in 1941, “He (Hitler) used skill, choosing a time when the City was empty – far emptier of fire-watchers than it should have been. He had luck, too, doing damage to mains which could not have been aimed for, but affected vitally the firefighter’s prospects.”<sup>78</sup> The severity of these fires and deficiency in fire prevention efforts led the

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<sup>76</sup> “London Raid: Fire Bombs Showed Down,” *The Scotsman*, December 30, 1940, The British Newspaper Archive.

<sup>77</sup> “Nazis’ Flaming Malice Only Strengthens London’s Will,” *Western Mail*, December 31, 1940, The British Newspaper Archive.

<sup>78</sup> Ministry of Home Security, *Front Line*, 32.

War Cabinet to approved the creation of a Fire Prevention Executive and formal fire-watching organization.<sup>79</sup>

In January, the Government followed up with two additional regulations focused on improving Fire Services and made civil defense volunteering mandatory. The first regulation required that all men between the ages of 16 and 60 help support civil defense. This involved volunteering outside of normal working hours up to 48 hours per month. The second regulation required all factories and commercial businesses to implement fire-bomb fighting schemes. It also gave the Government the authority to make fire-watching compulsory as needed.<sup>80</sup> According to the *Times* article “Compulsory Civil Defence:”

The Compulsory Fire Fighting Order issued under the new Defence Regulations will be made operative in all areas where the risk of fires from incendiary bombs is great enough to require such precautions, and in those areas considered most important it will be applied at once...In introducing the scheme the Minister (Morrison) said that it would achieve the Government's aim of ensuring that “there will not be a house, a factory, a warehouse, or an office that will not be well guarded from the fire bomb.”<sup>81</sup>

This regulation extended beyond commercial businesses and personal dwellings to include bridges and roads, wartime industries, and movie theaters and churches. Moreover, Westminster divided up the coordination of fire-bomb fighting between

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<sup>79</sup> War Cabinet (311), *Conclusions of a Meeting of the War Cabinet held at 10 Downing Street, S.W. 1, on Monday, December 30, 1940, at 1 2 NOON*, December 30, 1940, 218, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-65-10.pdf>.

<sup>80</sup> War Cabinet (5), *Conclusions of a Meeting of the War Cabinet held at 10 Downing Street, S.W. 1, on Monday, January 13, 1941, at 6 P.M.*, January 13, 1941, 27, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-65-17.pdf>.

<sup>81</sup> From Our Parliamentary Correspondent, "Compulsory Civil Defence." *Times*, January 20, 1941, The Times Digital Archive.

Government offices including the Admiralty, Ministry of Supply, Ministry of Labour, and Ministry of Transport. Local authorities had responsibility for “coordinating parties of fire-bomb fighters to protect all buildings other than factories and commercial premises.”<sup>82</sup>

Throughout the remainder of the Blitz, fire-watchers guarded commercial buildings against incendiaries while groups of street fire parties recruited by the ARP and under the authority of local communities protected civilian residences. In August 1941, British authorities consolidated the independent local brigades and the Auxiliary Fire Service (AFS) to form the National Fire Service (NFS). In order to centrally manage the NFS, it was controlled by the Home Office with regional autonomy. In addition, as part of this consolidation, the Government combined fire-watchers and street fire parties to form the Fire Guard.

This service had the combined responsibility of watching over private and public properties to catch incendiaries prior to them catching on fire. Communities were divided into sectors comprised of either 150 yards of street or thirty houses depending upon the population density of the area. In order to ensure adequate protection, multiple teams of three people staffed each sector covering all black-out periods each night. Moreover, in large industrial factories and cities, officials used Key Watchers positioned on buildings overlooking multiple sectors. In the event of a raid, additional Fire Guard teams were brought in to assist with fire watching.

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<sup>82</sup> "Compulsory Civil Defence." *The Times*, 4.

German bombing raids during the Blitz extended beyond London into communities across the country with many bombed multiple times. For civilians, the death and destruction caused by these raids had a profound impact on those who survived them. For example, after a September 30, 1940 bombing raid over the Southeast coastal town of Hastings, a Mass Observation researcher who witnessed the event wrote an account of his terrifying experience:

At 10:35 a.m. like a bolt from the blue the noise of enemy aircraft was heard and a heavy calibre bomb was dropped striking a projecting cornice of the Plaza cinema. This cause the bomb to explode in mid-air...causing wide-spread damage by reason of flying glass and debris which was hurled in all directions over an almost unbelievable distance. Our flat windows were directly opposite the explosion and took the full brunt of the blast...The shop premises below, like dozens of others, were twisted and torn out of recognition...As I approached our premises four people, two men, and two women, as far as I could tell, lay spread in pitiful and grotesque positions on the pavement. Two of them were outside the shop premises below our flat horribly gashed from flying glass. There were great piles of glass everywhere, in places over a foot deep. Doors were wrenched from their settings, and as I ascended to our flat plaster and various debris fell all round. The air was thick with dust which caught at one's throat. I was amazed and horrified at the scene of desolation presented by formally neat and pleasant rooms. Window frames were wrenched away, and through every wall were great gaping shrapnel holes.<sup>83</sup>



Figure 5-11. Aftermath of September 30, 1940 bombing of the Plaza Cinema in Hastings, Veronica Seymour, *Hasting's In World War II*, 2015, accessed November 21, 2020, [Hastings in WW2 - Victoria Seymour.com](https://www.victoriaseymour.com).

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<sup>83</sup> Mass Observation, *Fourth Weekly Report*, 13.

Hastings like many coastal towns experienced numerous bombing raids with many occurring during the year leading up to the Blitz. The town of 65,000 people suffered 40 aerial attacks from the beginning of the war until November 1941. These raids killed 46 civilians and destroyed or damaged 6,250 homes.<sup>84</sup> After another Luftwaffe attack in October 1940, the Government evacuated most of the town reducing its population from 65,000 to 22,000 people.<sup>85</sup>

**Table 5-7. British Coastal Bombing Raids, September 1939 – November 1941**

<i>Town</i>	<i>Number of Raids</i>	<i>Civilians Killed</i>	<i>Houses Damaged</i>
Fraserburgh	18	40	700
Peterhead	16	36	700
Aberdeen	24	68	2,000
Scarborough	17	30	2,250
Bridlington	30	24	3,000
Grimsby	22	18	1,700
Gt. Yarmouth	72	110	11,500
Lowestoft	54	94	9,000
Clacton	31	10	4,400
Margate	47	19	8,000
Ramsgate	41	71	8,500
Deal	24	14	2,000
Dover	53 (and shelling)	92	9,000
Folkestone	42	52	7,000
Hastings	40	46	6,250
Bexhill	37	14	2,600
Eastbourne	49	36	3,700
Brighton/Hove	25	127	4,500
Worthing	29	20	3,000
Bournemouth	33	77	4,000
Weymouth	42	48	3,600
Falmouth	33	31	1,100
<b>Total</b>	<b>779</b>	<b>1,077</b>	<b>98,500</b>

Source: Ministry of Home Security, *Front Line*, 132.

<sup>84</sup> Ministry of Home Security, *Front Line*, 132.

<sup>85</sup> Veronica Seymour, *Hastings in World War II*.

Attacks across Great Britain continued with many raids focused on industrial centers and major shipping ports including Portsmouth, Coventry, Liverpool, and Birmingham. During the night of November 14th, the Luftwaffe engaged in an extremely destructive assault on Coventry killing approximately 568 people and badly injuring 863 more. In addition, one in twelve homes were either destroyed or rendered unlivable and two thirds of all homes had some damage.<sup>86</sup> The attack, which began at 7:20 p.m. and continued until 6:15 the next morning, began with the dropping of incendiary devices. The resulting fires provided a target and over 350 aircraft dropped high explosive bombs and mines in a concentrated area in the center of the town.<sup>87</sup>

According to the *Times* article dated November 16, 1940, the Coventry attack was similar in size to the largest air raids on London. “Relays of German aircraft arrived over the city from dusk to dawn, and bombs, calculated by the enemy themselves to total nearly 450 tons, were dropped indiscriminately. Casualties were heavy, and many buildings, including the fourteenth-century cathedral, were destroyed.”<sup>88</sup> It also printed a formal statement issued by the Ministry of Home Security:

Preliminary reports indicate that the number of casualties may be of the order of 1,000. The attack was begun by the scattering of incendiary bombs over a wide area. Fires broke out at many points and indiscriminate bombardment of the whole city followed. It is feared that extensive damage was done and many buildings destroyed, including the cathedral. The people of Coventry bore their ordeal with great courage.

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<sup>86</sup> Ray, *The Night Blitz*, 155.

<sup>87</sup> War Cabinet, *Weekly Resume (No. 64) of the Naval, Military and Air Situation from 12 noon November 14<sup>th</sup> to 12 noon November 21st, 1940*, November 21, 1940, 12, accessed December 17, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-66-13.pdf>.

<sup>88</sup> “Big Attack on Coventry - 1000 Casualties – Big Cathedral Destroyed,” *Times*, November 16, 1940, The Times Digital Archive.



The *Sphere* in its November 23<sup>rd</sup> article “The Savagery of Coventry German

Methods of Warfare Brought to a British Town” expressed the horror of the attack:

We have all heard of how German dive-bombers wiped out the town of Guernica in Spain and deliberately wrecked the cities of Warsaw and Rotterdam, killing right and left and wreaking such havoc as to make civilisation gasp. The same methods have now been used against Britain. During the night of Thursday November 14, 2,000 high explosive bombs and thousands of incendiaries were showered on the City of Coventry. 250 people are known to be killed, and about 800 seriously injured. The city itself consists of masses of rubble—Cathedral, famous public buildings, cinemas, shops and houses have all been obliterated, and in places it was almost impossible to tell which was roadway and which were buildings.”<sup>89</sup>

The paper also published a picture taken the morning after the raid.



Figure 5-12. Center of Coventry, formally a busy shopping center, November. 15, 1940, “The Savagery of Coventry,” *The Sphere*.

To help support the community, military and civil authorities worked together to reestablish services and evacuate civilians as needed. While the Government arranged to evacuate 10,000 people, only 300 chose to leave via Westminster-supported

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<sup>89</sup> “The Savagery of Coventry German Methods of Warfare Brought to a British Town,” *The Sphere*, November 23, 1940, The British Newspaper Archive.

transportation services. Additional support came from the King who visited Coventry to assess the damage and help restore civilian morale.<sup>90</sup>

According to a November 29th Mass Observation assessment of the people of Coventry after the attack. “People are still far from cheerful in Coventry, and the atmosphere is rather one of grim determination and increased fed-upness with the inconvenience of life in Coventry at the moment.”<sup>91</sup> The update noted that numbers of people including skilled labor had evacuated the town. Moreover, many of the people remaining were cold due to broken windows, leaky roofs, and a shortage of coal. In addition, the restoring of utilities was taking a long time due to the shortage of labor. It also stated that in addition to ensuring the populace had sufficient supplies of food, authorities had established a communal feeding center at the Technical College. The Mass Observation report also identified the fear civilians had of another attack. “While people are anxious to rebuild and make things go again, there is a very strong underlying feeling that as soon as they have got things straight another raid will put them back where they started. It is commonly said that the Germans left the spire of the Cathedral as a landmark.”<sup>92</sup>

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<sup>90</sup> War Cabinet (290), *Conclusions of a Meeting of the War Cabinet held in the Cabinet War Room, S.W. 1, on Monday, November 18, 1940, at 5 P.M.*, November 18, 1940, 75, accessed February 6, 2021, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-65-10.pdf>.

<sup>91</sup> Mass Observation, *Nineth Weekly Report*, 12.

<sup>92</sup> Mass Observation, *Nineth Weekly Report*, 15.



Figure 5-13. Holy Trinity Church rises above a scene of devastation in Coventry, Mr. Taylor, War Office official photographer, November 16, 1940, Imperial War Museum, November 16, 1940, <https://www.iwm.org.uk/collections/item/object/205197332>.

On November 22nd, the Germans bombed the city of Birmingham killing 407 civilians, seriously injuring 429, and slightly injuring approximately 300 more. As recorded in the *War Cabinet Conclusions* from the meeting held on November 25, 1940, “Birmingham has not been given as much publicity as Coventry, but the damage in Birmingham was probably more serious.”<sup>93</sup> The War Cabinet also noted the impact of failed utility services on wartime production in raided communities and the difficulty in quickly restoring services.

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<sup>93</sup> War Cabinet (295), *Conclusions of a Meeting of the War Cabinet held in the Cabinet War Room, S.W. 1. on Monday, November 25, 1940, at 5 P.M.*, November 25, 1940, 123, accessed February 7, 2021, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-65-10.pdf>.

In response to the bombing attacks on important war armament centers like Coventry and Birmingham, the Government established a “mobile column” of workers dispatched to heavily raided communities in order to rapidly repair utilities and damaged houses. To quickly standup this team, the Government utilized members of the military to repair utilities. In addition, the army provided Engineer Construction Units to assist with home rebuilding while officials recruited skilled civilian labor. Although the War Cabinet had a primary goal of ensuring wartime industry continued, the efforts of the “mobile column” positively impacted the health and morale of civilians living in deplorable post bombing raid conditions.

German raids on cities throughout Great Britain continued and during the nights of November 30th and December 1st the Luftwaffe bombed Southampton killing more than 137 people. To help support the civilians of Southampton, officials brought ARP mobile canteens and utilities service workers into the town. On the night of December 12<sup>th</sup> a raid over the city of Sheffield caused 150 fires, killed approximately 24 civilians, injured 26 more and rendered 10,000 people homeless.<sup>94</sup> This attack was followed by a second one December 15th, which increased the number of displaced civilians to 20,000. According to the December 19, 1940 *War Cabinet Conclusions*, “The total casualties so far reported were: 370 dead, 455 seriously injured and 822 slightly injured. 12,000 people were still homeless. The civic authorities had stood the strain well, and public

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<sup>94</sup> War Cabinet (306), *Conclusions of a Meeting of the War Cabinet, held in the Cabinet War Room, S.W. 1, on Monday, December 16, 1940, at 5 P.M. December 16, 1940*, 188, accessed February 6, 2021, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-65-10.pdf>.

morale had been excellent.”<sup>95</sup> By the end of the month, less than 1,500 people remained homeless.<sup>96</sup>

Although Air Raid Precautions services existed in all boroughs, some communities did not expect to be bombed and were therefore unprepared for an attack. For example, on the night of November 19th, the Luftwaffe bombed Leicester surprising its civilians and killing 108 people. Prior to this raid, the community of 250,000 people had few air raid warnings and less than six bombs dropped on it. As a result, civilians and civil defense workers did not expect a major attack. According to a Mass Observation reporter located within the city at the time of the attack, “Before the raid there was a general air of complacency.” On the night of the attack, the sirens began at 8:00 p.m. and incendiary bombs were dropped. A shoe factory then caught fire, which provided German planes with a target and 8:00 p.m. until 1:30 a.m. the city was bombed in fifteen minute intervals.”<sup>97</sup>

The report also provided an opinion about how operational the ARP services were in Leicester. Although fire and casualty services worked effectively, there were an inadequate number of wardens, weak evacuation services, and no bomb disposal squads or special police. In order to help fill the civil defense gap, the army assisted by guarding

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<sup>95</sup> War Cabinet (308), *Conclusions of a Meeting of the War Cabinet held in the Cabinet War Room, S.W. 1, on Thursday, December 19, 1940, at 4-3 0 P.M.*, accessed February 6, 2021, December 19, 1940, 197, accessed February 7, 2021, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-65-10.pdf>.

<sup>96</sup> War Cabinet (310), *Conclusions of a Meeting of the War Cabinet held at 1 0 Downing Street, S.W.1, on Friday, December 27, 1940, at 1 2 NOON*, December 27, 1940, 211, accessed February 6, 2021, December 19, 1940, 197, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-65-10.pdf>.

<sup>97</sup> Mass Observation, *Nineth Weekly Report*, 17.

areas with unexploded bombs. The reporter commented, “The next morning people seemed more stunned and astonished than frightened. There was no joking at all about the night before, and everyone was rather serious and depressed.”<sup>98</sup>



Figure 5-14. Bomb damage to Tichborne Street, Leicester, on the evening after the raid November 19, 1940, Jane Goddard “Before and after views show extent of destruction to Leicester street during 1940 Blitz,” *LeicestershireLive*, July 1, 2021, [‘Before’ and ‘after’ views show extent of destruction to Leicester street during 1940 Blitz - Leicestershire Live \(leicestermcury.co.uk\)](https://www.leicestershirelive.co.uk/news/local-news/bomb-damage-to-tichborne-street-leicester-1940-blitz-101517).

After the raid, civilian protection became a higher priority. According to the report, “It seems that very few were going to public shelters before the raids started. For one thing, many of these were locked; but the idea did not seem to occur to many people... Those with cars are taking their cars into the country, parking them in the lane, and spending the night there... Those stopping at home are bringing their beds downstairs and arranging to sleep downstairs permanently, raid or no raid. Many of these have

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<sup>98</sup> Mass Observation, *Nineth Weekly Report*, 17.

Anderson shelters full of water, and these are heard complaining not at the authorities but at themselves for not looking after them.”<sup>99</sup>

Air raids continued throughout the winter with lulls in activity depending on the weather. From March 10<sup>th</sup> until the last attack of the Blitz on May 10<sup>th</sup>, the Luftwaffe engaged in 34 heavy raids outside of London with attacks extending into Scotland and Northern Ireland. On two nights March 12<sup>th</sup> and 14<sup>th</sup> the region of Clydeside Scotland was severely attacked resulting in 796 killed and 620 injured. Due to the extensive damage to the town of Clydebank, the Government evacuated 10,000 people and an additional 15,000 people left on their own.<sup>100</sup> On March 19<sup>th</sup> the Luftwaffe bombed London killing 504 people and injuring an additional 1,511. A day later, 250 planes dropped bombs on Plymouth killing 150 civilians and injuring an additional 280 people.<sup>101</sup> On April 15<sup>th</sup>, a large scale attack by the Luftwaffe extended across multiple regions of the country in one night. As noted in the War Cabinet *Weekly Resume* dated April 17, 1941:

Tynemouth was attacked three times and mines were dropped and a good deal of damage done. Fires were caused at Sunderland and there was damage and some casualties as Middlesbrough and Thornaby. At Hull the extent of the damage is not yet known, but a hospital and some public and commercial buildings were damaged. The Merseyside area was also attacked and industrial damage and casualties were caused at Liverpool, Birkenhead and in many suburbs. Belfast

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<sup>99</sup> Mass Observation, *Nineth Weekly Report*, 9.

<sup>100</sup> War Cabinet, *Weekly Resume (No. 81) of the Naval, Military and Air Situation from 12 noon March 13<sup>th</sup>, to 12 noon March 20<sup>th</sup>, 1941*, March 20, 1941, 11, accessed December 1, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-66-15.pdf>.

<sup>101</sup> War Cabinet (31), *Conclusions of a Meeting of the War Cabinet held at 10 Downing Street, S.W. 1, on Monday, March 24, 1941, at 5 P.M.*, March 24, 1941, 164, accessed February 7, 2021, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-65-18.pdf>.

was bombed for nearly six hours. Many fires were caused and all available reinforcements had to be called in.”<sup>102</sup>

The assault on Belfast resulted in approximately 323 civilians killed and an additional 320 seriously injured. Moreover, enemy raiders left 20,000 people homeless.

**Table 5-8. Major Bombing Raids on Ports and Armament Towns, 1940-1941**

<i>Town</i>	<i>Dates of Major Raids</i>	<i>Estimated enemy planes engaged</i>	<i>Total civilians killed in all raids to end of 1941</i>
Coventry	November 14 <sup>th</sup>	400	1,236
	April 8 <sup>th</sup>	300	
	April 10 <sup>th</sup>	200	
Birmingham	November 1 <sup>st</sup>	-	2,162
	November 19 <sup>th</sup>	350	
	November 22 <sup>nd</sup>	200	
	December 3 <sup>rd</sup>	50	
	December 11 <sup>th</sup>	200	
	April 9 <sup>th</sup> -10 <sup>th</sup>	250	
Bristol (And Avonmouth)	November 24 <sup>th</sup>	50	1,159
	December 2 <sup>nd</sup>	100	
	December 6 <sup>th</sup>	50	
	January 3 <sup>rd</sup> -4 <sup>th</sup>	150	
	March 16 <sup>th</sup>	150	
	April 11 <sup>th</sup>	150	
Sheffield	December 12 <sup>th</sup>	300	624
	December 15 <sup>th</sup>		
Manchester	December 22 <sup>nd</sup> -23 <sup>rd</sup>	150	1,005
Portsmouth	January 10 <sup>th</sup>	110	756
	March 10 <sup>th</sup>	120	
	April 27 <sup>th</sup>	50	
Southampton	November 23 <sup>rd</sup>	60	558
	November 30 <sup>th</sup>	200	
	December 1 <sup>st</sup>		
Cardiff	January 2 <sup>nd</sup>	125	299
Swansea	February 19 <sup>th</sup> -21 <sup>st</sup>	250	352
Liverpool / Merseyside)	November 28 <sup>th</sup>	150	4,100
	December 20 <sup>th</sup> -22 <sup>nd</sup>	500	

<sup>102</sup> War Cabinet, *Weekly Resume (No. 85) of the Naval, Military and Air Situation from 12 noon April 10<sup>th</sup>, to 12 noon April 17<sup>th</sup>, 1941*, April 17, 1941, 11, accessed December 17, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-66-16.pdf>.



<i>Town</i>	<i>Dates of Major Raids</i>	<i>Estimated enemy planes engaged</i>	<i>Total civilians killed in all raids to end of 1941</i>
	March 13 <sup>th</sup> and 21 <sup>st</sup>	250	
	May 1 <sup>st</sup> -7 <sup>th</sup>	800	
Plymouth	March 20 <sup>th</sup> and 21 <sup>st</sup>	250	1,073
	April 21 <sup>st</sup> -29 <sup>th</sup>	750	
Clydeside	March 13 <sup>th</sup> -14 <sup>th</sup>	460	1,828
	May 5 <sup>th</sup> -6 <sup>th</sup>	350	
Belfast	April 15 <sup>th</sup>	100	946
	May 4 <sup>th</sup> -5 <sup>th</sup>	110	
Hull	March 18 <sup>th</sup>	75	1,055
	May 7 <sup>th</sup> -8 <sup>th</sup>	100	
	July 17 <sup>th</sup>	75	
<b>Total</b>		<b>7,7935</b>	<b>17,153</b>

Source: Ministry of Home Security, *Front Line*, 87-88.

While continuous bombing attacks no longer took place over London, the city was subjected to several major raids during the final months of the Blitz. For example, the night of April 19<sup>th</sup> the Luftwaffe initiated a heavy aerial assault over London killing 442 people and injuring an additional 1,354. According to the April 21, 1941 *War Cabinet Conclusions*, on the night of April 19<sup>th</sup> “London had again been heavily attacked by some 350 aircraft, some of which had made two sorties. The main weight of the attack had been on the Eastern boroughs, especially the dock areas. A high proportion of incendiary bombs had been used, but few fires had been caused. Some parachute mines had fallen in the river. Railways had been damaged at several points.”<sup>103</sup>

The last great raid of the Blitz took place for six hours on May 10, 1941 during which German bombers released over 1,000 bombs over London causing 2,154 fires and

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<sup>103</sup> War Cabinet (42), *Conclusions of a Meeting of the War Cabinet held at 10, Downing Street, S. W. 1, on Monday, April 21, 1941, at 5 P.M.*, April 21, 1941, 220, accessed February 6, 2021, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-65-18.pdf>.

damaging important public buildings including The British Museum, The Houses of Parliament, and St. James Palace. Due to over 40 fractured water mains and a low Thames tide, fire brigades struggled to put out the fires resulting in the destruction of 5,000 homes. Moreover, this final attack killed 1,436 people and severely wounded an additional 1,793.<sup>104</sup> While this assault like many others tested the civil defenses of Great Britain it failed to deliver a “knock out” blow.

From September 1940 until May 1941, German bombers engaged in nightly attacks on London and other industrial cities, ports, and seaside communities across Great Britain. These raids aimed at forcing a British surrender through civilian terror challenged Air Raid Precautions to meet the realities of aerial bombing. While planners made significant preparations prior to the Blitz, the first month of nightly assaults highlighted deficiencies in multiple areas of civil defense including shelters, homeless services, and fire precautions. As a result, the Government took steps to better protect civilians by opening up the underground rail stations, installing bunks and other amenities, and rebuilding surface shelters. Moreover, officials expanded their evacuation plans and added additional publicity to remove children and other vulnerable persons out of high risk areas. The widespread destruction highlighted the need to improve services for displaced civilians and the Government worked with local authorities to improve rest centers and speed up the process of fixing damaged homes. In addition, throughout the Blitz, civil defense volunteer shortages impacted the Government’s ability to reduce the number of fires caused per bombing raid as well as repair and restore vital services. To

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<sup>104</sup> John Philip Ray, *The Night Blitz 1940-1941* (Cassell Military, 1996), 231-232.

combat these challenges, Westminster supplemented civil defense resources with military personnel, expanded ARP services, and made civil defense compulsory.

Although planners worried about civilian morale and its impact on wartime productivity, the public remained resolved to hold out against German aggression. The efforts made by the King and Queen, Winston Churchill, and other key members of the Government to support the people by remaining in London, visiting bomb sites, and providing words of encouragement helped create a sense of solidarity. The British people along with their leaders showed a tremendous amount of bravery and commitment to their nation during a period of daily aerial assaults aimed at destroying their will to fight. By the end of the Blitz, civilian fatalities totaled almost 40,000 with another 51,000 people seriously injured. While impactful, these numbers fell far short of the level of bloodshed predicted by aerial warfare theorists and Government planners.

## Chapter 6 – Casualties and Conclusions Assumptions, Outcomes, and Impacts

During the remaining four years of the war, the Luftwaffe continued to bomb Great Britain though on a lesser scale. In addition, Nazi Germany introduced new weapons including flying bombs and long-range rockets, killing or wounding an additional 33,000 British people.<sup>1</sup> After almost six years of fighting, the unconditional surrender of Germany in May 1945 finally ended the bombing threat to non-combatants. The Luftwaffe raids during the Blitz impacted millions of people, destroyed homes and businesses, and killed and maimed tens of thousands. However, the number of victims significantly deviated from pre-war estimates, resulting in questions about the accuracy of initial assumptions. This chapter will compare actual casualties to projections and evaluate the most impactful government programs. It will also discuss the discrepancies in casualty estimates and validate the success of Great Britain's civil defense efforts.

After the failed Disarmament Conference and Hitler's rise to power in 1933, Great Britain engaged in an arms race with a rapidly expanding Germany military. As the likelihood of war grew more apparent, the Government made assumptions about how Hitler would conduct an aerial campaign against British civilians. Officials concluded that the Luftwaffe would use explosive and incendiary bombs along with gas against non-combatants in order to force Great Britain out of the war. Moreover, Westminster assumed a prolonged German bombing campaign would result in a substantial number of

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<sup>1</sup> Basil Collier, *Defence of the United Kingdom: History of the Second World War: United Kingdom Military Series: Official Campaign History*, 1957. (United Kingdom: Naval & Military Press, 2004), 9771, Kindle.

fatalities based upon World War I casualty rates of 17 civilians killed and 33 seriously wounded per ton of bombs.

The advances in aviation and development of new bombing methods reinforced these assumptions. British “policing” activities in Iraq during the 1920s, the Italian use of airpower and chemical warfare in both Ethiopia and Libya and bombing raids during the Spanish Civil War validated the deadly power of these weapons. The invasion of Poland further established the impact of land and aerial bombing raids and highlighted German military capabilities. During the month of September 1939, Nazi Germany bombarded Warsaw with over 5,000 bomb tons killing 3,000 soldiers and approximately 24,000 civilians.<sup>2</sup> According to Lee Kennett in *A History of Strategic Bombing*, “There is no doubt that the generation of 1939 was stunned and horrified by the spectacle of Warsaw in flames. It seemed to fulfill perfectly the most dire predictions that Douhet and other military Cassandras had been making for years.”<sup>3</sup> The Luftwaffe followed this up in May 1940, with a bombing raid over Rotterdam, Netherlands, killing approximately 900 people, destroying 30,000 buildings, and leaving 79,600 people homeless.<sup>4</sup>

After years of analyzing the potential impact of an aerial bombing campaign over Great Britain, in 1940 Government officials predicted that the Luftwaffe could drop 3,500 bomb tons during the first 24-hours and 950 tons each day afterward, killing or

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<sup>2</sup> Lee B. Kennett, *A History of Strategic Bombing: From the First Hot-Air Balloon to Hiroshima and Nagasaki* (New York: Scribner, 1982), 109.

<sup>3</sup> Kennett, *A History of Strategic Bombing*, 109.

<sup>4</sup> “The Bombing of Rotterdam: 14 May 1940,” Stadsarchief Rotterdam, Museum Rotterdam, accessed February 6, 2021, <http://www.brandgrens.nl/en/the-bombing-of-rotterdam#rotterdam-14th-of-may-1940>.

wounding 1.8 million people in the first six months of a sustained air attack. This translated into almost 300,000 bombing victims per month which differed significantly from the actual number of casualties sustained during the Blitz. Winston Churchill later acknowledged the inaccuracy of initial air raid projections. “Before the war we were greatly misled by the pictures they painted of the destruction that would be wrought by Air Raids. This is illustrated by the fact that 750,000 beds were actually provided for air raid casualties, never more than 6,000 being required.”<sup>5</sup>

**Table 6-1. British Civilian Casualties, September 1940 – May 1941**

<i>Month</i>	<i>Killed</i>	<i>Injured</i>	<i>Total</i>
Sep-40	6,954	10,615	17,569
Oct-40	6,334	8,695	15,029
Nov-40	4,588	6,202	10,790
Dec-40	3,793	5,044	8,837
Jan-41	1,502	2,012	3,514
Feb-41	789	1,068	1,857
Mar-41	4,259	5,557	9,816
Apr-41	6,065	6,926	12,991
May-41	5,394	5,181	10,575
Totals	39,678	51,300	90,978

Source: “The Air Battle of Britain Civilian Losses” *War Illustrated*, July 4, 1941, War Illustrated Archive.

During the years leading up to the Blitz, Westminster relied heavily on post-World War I bombing records to establish casualty projections. These forecasts based upon British data, underestimated the airplane tonnage released over Great Britain during the Great War. German accounts reported 30 to 40 percent more bombs dropped than

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<sup>5</sup> Alfred Price, *Blitz on Britain 1939-45*. 2<sup>nd</sup> ed. (1977) (U.K.: Sutton Publishing, 2000), 138.

documented by British officials.<sup>6</sup> Alfred Price in *Blitz On Britain* concludes, “During these attacks the German bombers had carried a considerably greater weight of bombs than those known to have exploded, which were chronicled in British records. In fact, about 110 tons had been carried...the number of casualties per ton of bombs carried to urban areas in Britain during the First World War was about twenty-six.”<sup>7</sup> As a result, planners overestimated World War I civilian fatalities per bomb ton by almost triple the actual number.

However, even with a revised estimate of six people killed and another 20 seriously injured per bomb ton, anticipated casualties of 960,00 people would have still been considerable.

**Table 6-2. Blitz Six Month Casualty Estimates**

<i>Government Projections Using WWI Data</i>			<i>Revised Projections Using Updated WWI Data</i>		
Civilian Fatalities (17 per ton)	Seriously Wounded (33 per ton)	Total Casualties (50 per ton)	Civilian Fatalities (6 per ton)	Seriously Wounded (20 per ton)	Total Casualties (26 per ton)
600,000	1,200,000	1,800,000	232,941	727,273	960,214

Furthermore, these adjusted bombing projections, reflect a Luftwaffe campaign of six months, whereas the Blitz lasted for approximately eight. Updated timeframes increase British casualties to 1.28 million, which is 14 times more than actual Blitz casualties and

<sup>6</sup> H.A. Jones, *The War In the Air: The Part Played in the Great War by the Royal AirForce Vol. 5* (Oxford: University Press, 1935), 153, accessed July 8, 2020, <https://ia801604.us.archive.org/29/items/warinairbeingsto05rale/warinairbeingsto05rale.pdf>.

<sup>7</sup> Price, *Blitz on Britain*, 3.

8.7 times more than the 146,000 civilians living in the United Kingdom hurt or killed during the entire war.

Air raids in Europe from 1937-1940 further reinforced these estimates and provided statistics confirming the expected ‘worst case’ scenario. For example, during the Spanish Civil War civilian casualties topped 38 people killed or wounded per bombing ton, and during the September 1, 1939 Wieluń-Poland raid approximately 26 civilians died per ton. Moreover, on September 25<sup>th</sup>, the Luftwaffe dropped 632 tons of high explosives and incendiaries on Warsaw killing large numbers of people. Depending upon the source, civilian fatalities during this raid ranged from 10.3 to 31.6 deaths per bomb ton. All of these scenarios provided a chilling picture of what an aerial bombing war would mean to civilians.

**Table 6-3. European Civilian Bombing Raids, 1937-1940**

<i>Year</i>	<i>City/Location Bombed</i>	<i>Bombing Tonnage</i>	<i>Civilian Deaths</i>	<i>Deaths Per Ton</i>
<b>1937</b>	Guernica-Spain	22	250-300	12.5
<b>1938</b>	Barcelona- Spain	46	1,300	28.3
<b>1939</b>	Wieluń-Poland	46	1,200	26.1
<b>1939</b>	Warsaw – Poland	632	6,000-20,000	10.28–31.65
<b>1940</b>	Rotterdam – Netherlands	97	900	9.3
<b>Total</b>		<b>843</b>	<b>9,650-23,700</b>	<b>11.45-28.11</b>

Prior to the War, planners also estimated the expected daily bombing tonnage based upon the size of the German air fleet, and time and frequency of raids. According to German records, in September 1939 the Luftwaffe had 1,008 available twin engine bombers capable of reaching Great Britain.



**Table 6-4. Luftwaffe Bombers, September 1939**

<i>Plane Type</i>	<i>Number of Planes</i>	<i>Bomb Capacity (Pounds)</i>	<i>Bomb Capacity (Tons)</i>	<i>Total Bombing (Tonnage)</i>	<i>Incendiaries (Cannisters)</i>	<i>Total Incendiaries (Cannisters)</i>
Heinkel 111 <sup>1</sup>	800	4,400	1.96	1,571	32	25,600
Dornier 17	208	2,200	0.98	204		
<b>Total</b>	<b>1,008</b>	<b>3,946</b>	<b>1.76</b>	<b>1,776</b>	<b>32</b>	<b>25,600</b>

*Source:* Data derived from Price, *Blitz on Britain*, 2.

<sup>1</sup>The Heinkel 111 was capable of carrying either the Bomb Tonnage or Incendiary Cannisters or a combination of the two.



Figure 6-1. Heinkel 111 J, 1938, Price, *Blitz on Britain*, 2.

In early June 1940, British officials increased the German fleet size to include the Junker JU 87 and 88 bombers with a total bombing raid capacity of 3,200 tons. However, by the end of the German conquest of France in mid-June 1940, the Luftwaffe's bombing fleet had decreased to a total of 1,400 aircraft with 1,064 operational for use against Great Britain.<sup>8</sup> Westminster further revised its air raid estimates and assumed that Germany would use 50 percent of its bombers against the

<sup>8</sup> Collier, *In Defence of the Kingdom*, 9982, Kindle.

British and could potentially release 1,800 bombing tons on average per day for a period of time.<sup>9</sup>

**Table 6-5. Luftwaffe Bombing Capacity, June 6, 1940**

<i>Bomber Type</i>	<i>Number of Planes</i>	<i>Bomb-load (Tons)</i>	<i>Total (Tons)</i>
Heinkel 111 Long-range	1,100	2	2,200
Junker JU 88 Long-range	300	2	600
Dornier 17 Long-range	200	1	200
Junker JU 87 Short-range	400	0.5	200
<b>Total</b>	<b>2,000</b>	<b>1.6</b>	<b>3,200</b>

Source: Estimated German Bomber fleet capacity<sup>10</sup>

During the Blitz, several raids over Great Britain met the estimated bomber counts, although, the Luftwaffe rarely used more than 25 percent of its fleet. While aerial attacks ranged from just a few aircraft to over 700 used during one raid, the average number of planes per aerial assault was only 179.<sup>11</sup> Furthermore, the Government’s ‘worst case’ scenario assumed a daily bombing load of 950 tons of high explosives, whereas only one major raid over London on April 19, 1941 exceeded that number. According to German records, the attack that night involved 712 Luftwaffe bombers, 1,026 tons of high explosives, and 4,252 incendiary cannisters. Only three additional raids ever exceeded 500 ton of high explosives.

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<sup>9</sup> *Estimated Scale of Air Attack Upon United Kingdom*, Winston Churchill, Prime Minister, July 8, 1940, 1, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-66-9.pdf>.

<sup>10</sup> Chiefs of Staff Committee, Joint Intelligence Sub-Committee, *Summary of the Likely Forms and Scales of Attack That Germany Could Bring to Bear on the British Isles in the Near Future*, June 6, 1940, 7, accessed February 6, 2021, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-66-9.pdf>.

<sup>11</sup> Collier, *In Defence of the Kingdom*, 9408, Kindle.

**Table 6-6. Blitz Bombing Raids, Over 500 Tons of High Explosives**

<i>City</i>	<i>Night</i>	<i>High Explosives</i>	<i>Incendiary Cannisters</i>
London	October 15, 1940	538 tons	177
Coventry	November 14, 1940	503 tons	881
London	April 16, 1941	890 tons	4,200
London	April 19, 1941	1,026 tons	4,252

Source: Collier, *In Defence of the Kingdom*: 9348-9352, 9405-9409, Kindle.

On average, German bombers dropped 209 tons of high explosives and over 19,500 incendiaries (approximately 19 tons assuming 1kg incendiaries) during each nightly bombing attack. This lower tonnage, 75 percent less than predicted, highlights the large discrepancy between pre-war projections and Blitz actuals. It also emphasizes the imprecise science British planners used to predict German capabilities. For example, the ‘worst case’ airplane estimates in September 1939 assumed a 25 percent larger fleet than the Germans had.<sup>12</sup> In addition, officials calculated bomb tonnage at 100 percent per plane and did not reduce the capacity to account for fuel weight. Furthermore, planes carried a combination of high explosive, incendiaries, and parachute mines, all with varying weights and capacity implications.

During the Blitz, the Luftwaffe released more than 32,600 tons of explosive bombs and over 3 million incendiaries over Great Britain. According to German records bombers in notable raids dropped more than 19,000 tons of high explosives and in excess of one million incendiaries over London alone. Additionally, there were 127 major attacks during which planes dropped more than 100 tons of explosive bombs.

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<sup>12</sup> Price, *Blitz on Britain*, 2.

**Table 6-7. Major German Attacks on British Cities: 1940-1941**

<i>Target Area</i>	<i>Number of Major Attacks</i>	<i>Tonnage of High Explosives</i>	<i>Average Tonnage Per Raid</i>
<b>London</b>	71	18,291	258
<b>Liverpool-Birkenhead</b>	8	1,957	245
<b>Birmingham</b>	8	1,852	232
<b>Glasgow-Clydeside</b>	5	1,329	266
<b>Plymouth-Devonport</b>	8	1,228	154
<b>Bristol-Avonmounth</b>	6	919	153
<b>Coventry</b>	2	818	409
<b>Portsmouth</b>	3	687	229
<b>Southampton</b>	4	647	162
<b>Hull</b>	3	593	198
<b>Manchester</b>	3	578	193
<b>Belfast</b>	2	440	220
<b>Sheffield</b>	1	355	355
<b>Newcastle-Tyneside</b>	1	152	152
<b>Nottingham</b>	1	137	137
<b>Cardiff</b>	1	115	115
<b>Total</b>	<b>127</b>	<b>30,098</b>	<b>3,475</b>

Source: Terence O'Brien, *History of the Second World War: Civil Defence* (London: HMSO, 1955), accessed January 30, 2021, 681, <https://ia800603.us.archive.org/21/items/HistoryOfTheSecondWorldWarCivilSeriesCivilDefence/obrien-civil-defence.pdf>.

Even with the reduced casualty estimates of 26 casualties per bomb ton and the reduced per raid tonnage, German aerial attacks should have killed or injured more than 926,000 people during the Blitz. However, based upon actual counts, less than three people died or had serious injuries per ton.

**Table 6-8. Blitz Casualties - Projected vs Actual**

<i>Projected Casualties (Tons 35.6K – HE &amp; Incendiaries)</i>			<i>Actual Casualties (Tons 35.6K – HE &amp; Incendiaries)</i>		
Civilian Fatalities	Seriously Wounded	Total Casualties	Civilian Fatalities	Seriously Wounded	Total Casualties
(6 per ton)	(20 per ton)	(26 per ton)	(1.1 per ton)	(1.4 per ton)	(2.55 per ton)
213,762	712,540	926,302	39,678	51,300	90,978

Source: Data derived from revised projected casualties per bomb ton and from actual casualties per bombing ton based upon actual tonnage data.

There are several reasons why Blitz casualties varied so significantly from expected civilian losses. These include external factors such as the impact of poor weather on bombing raids and the quality of German bombing materials. With rain showers of 109 days a year in London and over 200 days in parts of Western Scotland, depending on the weather, bombers had a greater difficulty locating targets. Also, weather over the English Channel from October to April is cloudy and wet, with strong winds and poor visibility, which made it risky for Luftwaffe pilots to fly across the Channel to Great Britain.<sup>13</sup> To illustrate, during the month of February 1941, only two concentrated raids over Swansea took place on the nights of February 19<sup>th</sup> and 29<sup>th</sup>. Less than 65 bombers participated in each raid dropping a total of 112 tons of high explosives.<sup>14</sup> Poor weather forced the Luftwaffe to limit its bombing activities for the rest of the month.

In addition, the quality of the high explosives used by the Germans impacted the casualty totals. During World War I, bomb detonation failures and resulting discrepancies between British and German records significantly changed the tonnage impact. While not as extreme as the tonnage difference during the Great War, it is estimated that during the Blitz, at least ten percent of all bombs dropped failed to detonate.<sup>15</sup> For example, during the week of October 17<sup>th</sup>, 1940, bomb squads

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<sup>13</sup> Christopher Frederick Wooldridge and Cyril Ernest Everard, "English Channel." Encyclopedia Britannica, accessed February 6, 2021, <https://www.britannica.com/place/English-Channel>.

<sup>14</sup> Collier, *In Defence of the Kingdom*, 9408, Kindle.

<sup>15</sup> Alastair McKenzie, "Who Had the Most Reliable Bombs in World War II", March 18, 2018, Mechtraveller, accessed January 12, 2021, [Who had the most reliable bombs in WW2? | Mechtraveller](#).

deactivated 1,392 unexploded bombs. During another two week period from November 14<sup>th</sup> to November 28<sup>th</sup> approximately 1,720 undetonated bombs had to be disabled.<sup>16</sup> A ten percent failure rate translates into 9,100 fewer air raid victims.

The actions of Britain's home defense forces proved to be arguably the key factor that protected people from enemy bombers. Defensive attacks by the Royal Air Force and anti-aircraft weapons in major cities helped counter Nazi Germany's air raid strategy. For example, the military's use of anti-aircraft guns and balloon barrages over major cities forced Luftwaffe dive bombers to remain at higher altitudes reducing the number of civilian casualties from machine gunning and low level bombing. As demonstrated during the Spanish Civil War, pilots that released their bombs at 1,000 feet or lower inflicted more damage as bombs penetrated homes through the walls versus the roof, destroying three to four homes at a time.<sup>17</sup>

Moreover, communities without adequate air defenses enabled German planes to gun down civilians. In Guernica for example, machine guns fired upon non-combatants as they attempted to escape. According to César Vidal "Among the victims of the bombardment were...machine gun victims like Pedro de Zabalauren and his girlfriend, shot when they were trying to flee along the railway line. In some cases, the machine-gunning carried out by Hitler's pilots took place up to four kilometres from Guernica, for

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<sup>16</sup> War Cabinet, *Weekly Resume (No. 60)*, 13; *Weekly Resume (No. 65) of the NAVAL, MILITARY AND AIR SITUATION from 12 noon November 21st to 12 noon November 28th, 1940*, November 28, 1940, 11, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-66-13.pdf>.

<sup>17</sup> Air Raid Precautions Department, Intelligence Branch, *Monthly Intelligence Report (No. 231), Effects of Air Raids in Spain and China*, August 15, 1938, 2, The National Archives, Kew, Item CO 323/1592/66.

motives that seem to owe more to sadism than any supposed military necessity”<sup>18</sup>

Similarly, during the September 1939 invasion of Poland, once Polish defenses were knocked out, the Luftwaffe descended from 7,000 ft to 60 to 100 ft. brutally machine gunning civilians.<sup>19</sup> During the Blitz, in areas without adequate protection, there were instances of daytime dive bombing and machine gunning of civilians. Without air defenses, this form of violence would have been more widespread and added to the number of casualties.

Successful counter attacks by the Royal Air Force during the month of September also forced Hermann Göring to change the Luftwaffe’s bombing strategy to predominately night raiding. This made it more difficult for the enemy to locate military and industrial targets. According to the War Cabinet *Weekly Resume* for the week of September 12, 1940, “The enemy continued to direct his main attack on London, and latterly his bombing, especially at night, appears to have been entirely indiscriminate and he has achieved no very important results. Our fighters have successfully broken up large enemy formations attacking by day.”<sup>20</sup>

During the daylight raids of September, the Luftwaffe still released their bomb loads but often over less populated areas thereby reducing the number of civilians injured or killed in London. In another report distributed on September 20<sup>th</sup> officials noted, “By

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<sup>18</sup> César Vidal Manzanares, *La destrucción de Guernica: un balance sesenta años después*. trans Peter Miller (Madrid: Espasa, 1997), Chapter 9, accessed September 23, 2020, <http://www.buber.net/Basque/History/guernica-ix.html>.

<sup>19</sup> Ministry of Home Security, *Front Line 1940-41: The Official Story of The Civil Defense of Britain*. (London: HMSO, 1942), 136.

<sup>20</sup> War Cabinet, *Weekly Resume (No. 55)*, 7.

day there has been no penetration in-strength in the London area, all raids have shown marked tendency to disperse on being intercepted by our fighters, and generally have dropped their bombs indiscriminately over a wide area, principally in Kent and Sussex. Enemy aircraft also appear to be disinclined to press home their attacks in the face of the heavy anti-aircraft barrage.’<sup>21</sup>

During the course of the Blitz, home defense forces damaged or destroyed 1,464 bombers and 3,404 escort planes. However, once the Germans transitioned to primarily night raiding, British air defenses encountered the same visibility challenges rendering them almost powerless against the Luftwaffe. To demonstrate, the largest number of bombers destroyed during a night raid occurred on May 10, 1941 when the British military destroyed fourteen of them.

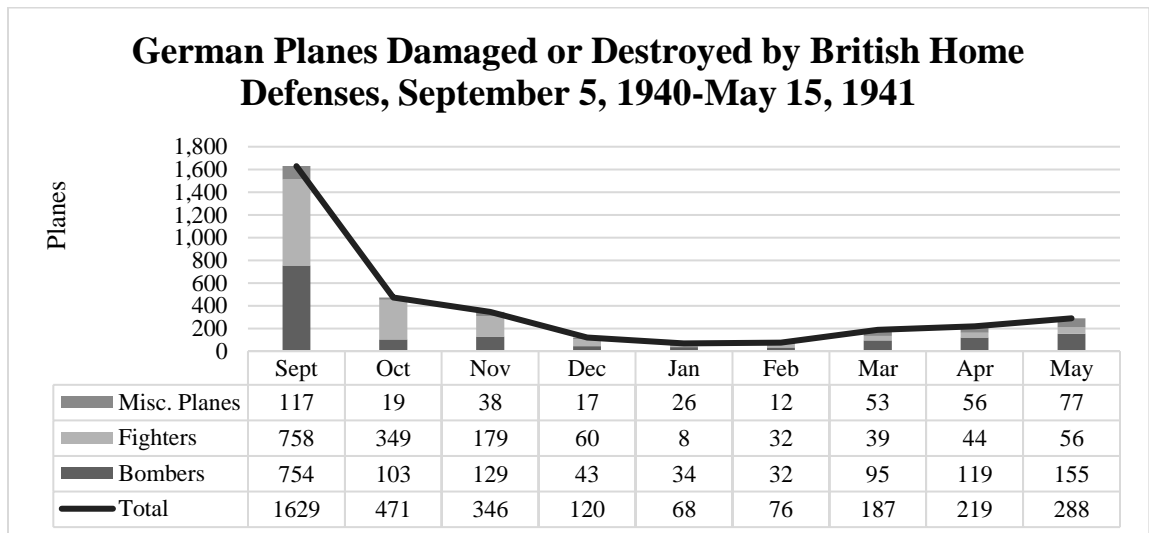


Figure 6-2. Luftwaffe aircraft casualties from RAF counter attacks and British anti-aircraft guns. Compiled from War Cabinet, *Weekly Resumes (No 54 – No. 89) September 5, 1940 – May 15, 1941. (No. 54), September 5-12, 20, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-66-11.pdf>; (No. 55), 18; (No. 56), 22; (No. 57), September 26-Oct 3, 19; (No. 58), October 3 – 10, 18; (No. 59), October 10-17, 19; (No. 60), October 17 -24, 22; (No. 61), October 24- 31, 20,*

<sup>21</sup> War Cabinet, *Weekly Resume (No. 56) of the NAVAL, MILITARY AND AIR SITUATION from 12 noon September 19th to 12 noon September 26th, 1940, September 27, 1940, 10, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-66-12.pdf>.*



<http://filestore.nationalarchives.gov.uk/pdfs/large/cab-66-12.pdf>; (No. 62), October 31- Nov 7, 20; (No. 63), November 7-14, 20; (No. 64), November 14-21, 21; (No. 65), November 21-28, 18, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-66-13.pdf>; (No. 66), November 28-Dec 5, 19; (No. 67), December 5-12, 20; (No. 68), December 12-19, 17; (No. 69), December 19-26, 20; (No. 70), December 27-January 2, 19; (No. 71), January 2-9<sup>th</sup>, 18; (No. 72), January 19-16, 20; (No. 73), January 16-23, 19; (No. 74), January 23-30, 17; (No. 75), January 30 - Feb 6, 17, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-66-14.pdf>; (No. 76), February 6-13, 20; (No. 77), February 13-20, 18; (No. 78), February 20-27, 18; (No. 79), February 27-March 6, 19; (No. 80), March 6 - 13, 19; (No. 81), March 13-20, 18; (No. 82), March 20-27, 20; (No. 83), March 27-April 3, 19; (No. 84), April 3-10, 21; (No. 85), April 10-17, 20; (No. 86), April 17-24, 19, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-66-15.pdf>; (No. 87), April 24-May 1, 21; (No. 88), May 1-8, 15; (No.89), May 8-15, 21, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-66-16.pdf>.

Anti-aircraft guns also assisted in the effort to reduce the number of German bombers and during the Blitz damaged or destroyed 260 planes. Gun crews had a larger impact during the daytime raids in September 1940, and during the later night time raids of March to May 1941.

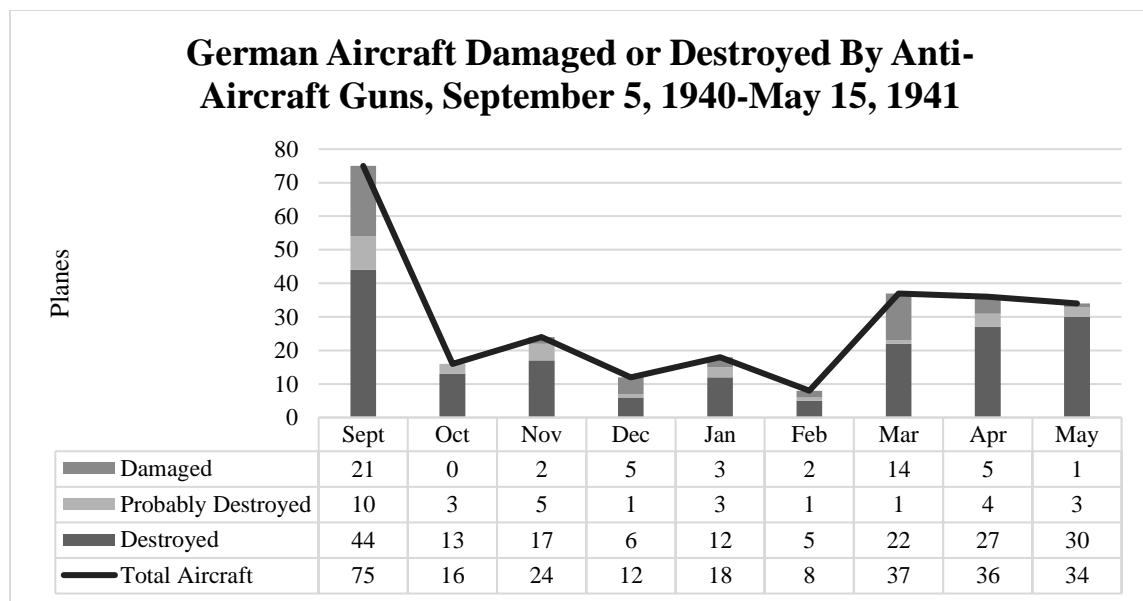


Figure 6-3. Luftwaffe aircraft casualties from British anti-aircraft guns. Compiled from *War Cabinet Weekly Resumes* (No 54 – No. 89) September 5, 1940 – May 15, 1941.

By damaging or destroying Luftwaffe bombers, the British military ensured that a percentage of their explosives would not be dropped. In addition, during various

bombing raids, the pressure exerted on the enemy by anti-aircraft guns and the RAF, forced bombers out of their formation consequently affecting the accuracy of their bomb drops.

Even though the impact of these military efforts cannot be fully measured, a reduced civilian casualty range can be established. To illustrate, based upon actual casualties, if home defense actions damaged or destroyed ten percent of Luftwaffe bombers prior to releasing their explosives, this reduces the number of victims by 510 people. Whereas if the British military prevented 100 percent of the damaged bombers from dropping their loads, over 5,000 casualties would have been averted. Furthermore, this analysis does not consider the impact of the RAFs interception of German planes outside of major cities. Potentially the Luftwaffe would have still dropped their bomb loads but in less populated areas of the country.

**Table 6-9. Potential Reduction in Civilian Casualties Due to the Damage/Destruction of German Bombers, September 1940 – May 1941**

<i>% of Bombers Destroyed/Damaged (Prior to dropping bombs)</i>	<i># of Bombers (Fail to Drop Bomb Load)</i>	<i>Avg Tons (HE and Incendiaries)</i>	<i>Civilian Fatalities Avoided (1.1 per ton)</i>	<i>Civilians Wounded Avoided (1.4 per ton)</i>	<i>Total Civilian Casualties Avoided (2.55 per ton)</i>
10%	146	187	209	270	479
20%	293	375	417	600	1,017
30%	439	562	626	899	1,526
40%	586	750	835	1,199	2,034
50%	732	937	1,043	1,499	2,543
60%	878	1,124	1,252	1,799	3,051
70%	1,025	1,312	1,461	2,099	3,560
80%	1,171	1,499	1,670	2,399	4,068
90%	1,318	1,687	1,878	2,698	4,577
100%	1,464	1,874	2,087	2,998	5,085

*Source:* Data assumptions utilize actual average tons carried per bomber and per ton civilian casualties.

Throughout the Blitz a small number of planes, mainly reconnaissance, continued to fly over Great Britain and release modest numbers of bombs throughout the day. However, the loss of 1,629 German planes in September, ensured that sizable raids occurred at night. By eliminating substantial daytime bombing raids, the Government appreciably reduced the number of civilian casualties. Instead of the Luftwaffe conducting additional sorties per 24-hour period, large scale raiding was confined to after dark. In addition, the months with longer nights corresponded with the more precarious winter weather, thereby reducing the potential number of sorties after dark. As shown in the chart below the number of monthly air attacks diminished during the poor weather months.

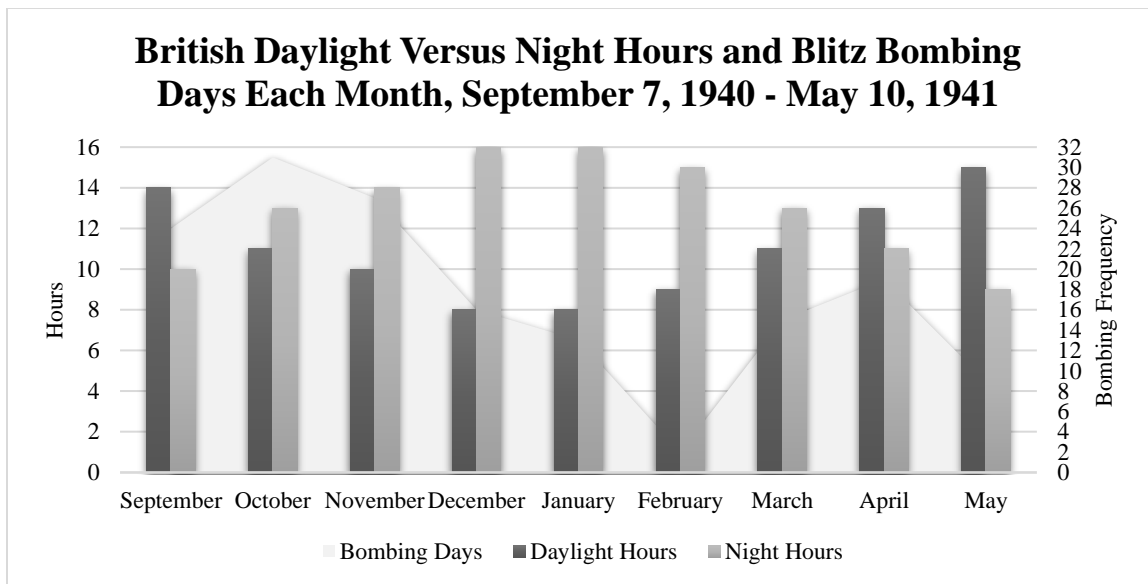


Figure 6-4. Blitz bombing days per month and corresponding daylight and night hours. Bombing days compiled from German bombing data. Collier, *In Defence of the Kingdom*, 9348-9352, 9405-9409, Kindle.

Factors including available ammunition, manpower, and refueling and loading timeframes also affected the feasibility of multiple raids per day. However, with bomber

speeds of 250 to 286 miles per hour, and the proximity of German bases along the French coast of the English Channel (ranging from 21 to 150 miles away depending upon the location), it is likely that the Nazis would have engaged in multiple daily raids.

**Table 6-10. Luftwaffe Bomber Speeds, 1940-1941**

<i>Bomber Type</i>	<i>Speeds Per Hour</i>
Heinkel 111	250 mph at 16,000 feet
Junker JU 88	286 mph 18,000 feet
Dornier 17	255 mph

Source: Ray, *Night Blitz*, 82-83.

If the Luftwaffe had succeeded in around the clock attacks on British cities, depending upon the size and frequency of raids, actual casualties would have potentially grown from 91,000 to more than 360,000 people. The addition of multiple daylight raids in each 24-hour period, increases Luftwaffe bombing tonnage to 912 tons on average per day, which corresponds with initial British assumptions. The chart below depicts the increase in people killed or severely wounded with each additional daylight raid using linear assumptions.

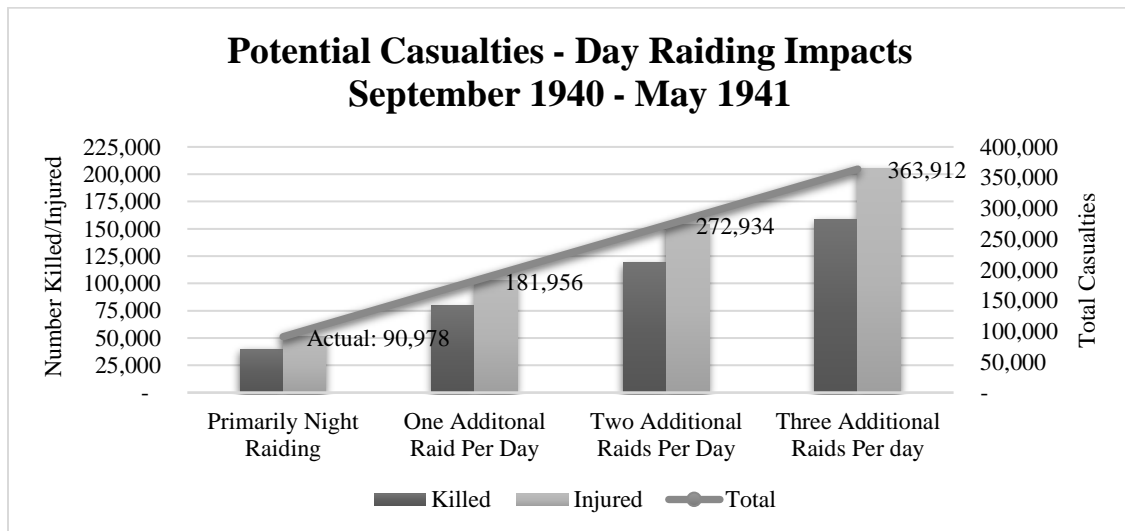


Figure 6-5. Potential Casualties from daytime bombing raids based upon actual casualties. Casualty growth assumes straight line increase per additional raid.

However, these casualty assumptions do not account for the societal impact of constant bombardment on civilians and the potential breakdown of civil defense services. The final raid on May 10, 1941 illustrates how this could occur. On that night over 507 German planes bombed London. After dropping their loads, many returned to their home bases, reloaded and released a second round of bombs. The tonnage dropped included 711 tons of high explosives and 86 tons of incendiaries. This resulted in about 3,200 civilians killed or badly wounded and 12,000 people left homeless.<sup>22</sup> Neil Wallington in *Fireman at War* states “After that massive raid, the LFS (London Fire Service) was literally on its knees, bowed but still wearily unyielding. Had the massed Luftwaffe squadrons of Air Fleet Two returned to London in the darkness of 11 May 1941, the direction of the war might well have been dramatically changed.”<sup>23</sup> Large scale nightly bombing raids taxed civil defense efforts. By removing the daytime bombing threat civil defense personnel had time to restore services, rescue people, and evacuate those impacted by the nightly raids. If the Luftwaffe had been able to continuously assault British cities, civilian casualties per ton would have increased exponentially.

Equally important to home defense efforts, ARP personnel and Government programs reduced civilian casualties by evacuating civilians out of danger zones, shelter provisioning, and fire and rescue services. Westminster’s civil defense organization also helped ensure bombing victims received the care needed thereby reducing post-raid fatalities. During the Blitz, Government officials evacuated vulnerable civilians

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<sup>22</sup> Neil Wallington, *Firemen at War: The Work of London’s Fire-fighters in the Second World War* (Huddersfield UK: Jeremy Milles Publishing, 2005), 119.

<sup>23</sup> Wallington, *Firemen at Work*, 141.

including children, expectant mothers, and the elderly. People from high risk areas including parts of London, coastal communities, and industrial cities throughout Great Britain received Government evacuation assistance. By the end of September 1940, officials had moved over 410,000 women and children from the London area, approximately five percent of the pre-war population of 8.6 million people.<sup>24</sup> Based upon the actual casualty ratio of 1.1 fatalities per bombing ton, Government sponsored evacuations reduced over 1,000 fatalities in London alone. Furthermore, by removing 80 percent of the children out of London, it helped free up rescue workers to focus on those remaining, saving people who would have died without assistance.



Figure 6-6. Evacuee Children (with their labels) going to a safer area, May 18, 1940, Imperial War Museum, LN 6194, <https://www.iwm.org.uk/history/the-evacuated-children-of-the-second-world-war>.

Civil defense personnel also relocated hundreds of thousands of people impacted by bombing raids. By February 1941, Government workers had evacuated approximately

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<sup>24</sup> London Online, *Historical Overview of London Population*, 2021.

260,000 displaced adults. These efforts reduced casualties by removing civilians from towns subjected to multiple bombing raids such as Birmingham, Bristol, and Liverpool. For example, Clydebank sustained two major raids during the nights of March 13<sup>th</sup> and May 5<sup>th</sup>. After the raid in March, ARP personnel evacuated 10,000 people and an additional 15,000 left on their own. This reduced those impacted by the May 5<sup>th</sup> raid.<sup>25</sup>

**Table 6-11. Evacuations Great Britain, September 1939-February 1941**

<i>Region</i>	<i>Evacuation Group</i>	<i>Sep-39</i>	<i>Jan-40</i>	<i>Aug-40</i>	<i>Feb-41</i>
<b>England and Wales</b>	Unaccompanied children	765,000	420,000	421,000	480,500
	Mothers and children	426,500	56,000	57,000	571,000
	Teachers and helpers	89,000	43,400	27,000	25,000
	Other adults <sup>1</sup>	18,000	3,380	14,000	262,200 <sup>2</sup>
	<b>Total</b>	<b>1,298,500</b>	<b>522,780</b>	<b>519,000</b>	<b>1,338,700</b>
<b>Scotland</b>	Unaccompanied children	62,000	37,600	17,900	11,800
	Mothers and children	99,000	8,900	7,400	15,700
	Teachers and helpers	13,000	3,100	1,600	1,000
	Other adults <sup>1</sup>	1,000	200	100	1,500
	<b>Total</b>	<b>175,000</b>	<b>49,800</b>	<b>27,000</b>	<b>30,000<sup>3</sup></b>
<b>Grand Total</b>		<b>1,473,500</b>	<b>572,580</b>	<b>546,000</b>	<b>1,368,700</b>

Source: Total number billeted in all areas, 1939-1941. Richard Titmuss, *History of The Second World War Problems of Social Policy* (London: HMSO, 1950), 562, accessed January 30, 2021, <http://www.ibiblio.org/hyperwar/UN/UK/UK-Civil-Social/UK-Civil-Social-25.html>.

<sup>1</sup> Includes homeless persons, expectant mothers, children in nurseries, camps and hostels, invalids, old people, the crippled, the blind, civil defense personnel, emergency medical service staff and war workers.

<sup>2</sup> Mainly homeless people billeted in evacuation areas.

<sup>3</sup> Including 11,700 evacuees from English areas billeted in Scotland.

Most civilians, however, did not have the option to evacuate and remained in their homes relying on ARP services when needed. Nightly raids forced civilians to sleep in Government provided shelters, reinforced basements or cellars, or in the Tube stations for those residing in London. Another 40 percent of the public chose not to take any special

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<sup>25</sup> War Cabinet, *Weekly Resume* (No. 81), 11.

precautions during raids. Some historians have criticized Government's provisioning of shelters and contend that Westminster failed to adequately protect civilians. For example, James Richards in "The Blitz: Sorting the Myth from the Reality" argues the Government was unconcerned with supporting the needs of its citizens and failed to provide deep shelters. "At first no one in authority seemed concerned about the people of Britain's towns...Hitler had provided large, sanitary and comfortable indestructible shelters for his people, but in this country it was a different story."<sup>26</sup> Ironically, Germany's deep shelters only accommodated approximately 10 percent of its 80.6 million pre-war population while the remainder were forced to shelter in basements.<sup>27</sup>

Historians have argued that the provisioning of shelters did not begin early enough due to the Government's early decentralized approach to civil defense preparations. As stated by Geoffrey Field in "Nights Underground in Darkest London: The Blitz 1940-1941," "Much of civil defence preparations was left in the hands of local authorities without clear guarantees that their outlays would be covered. Some, as a result, moved slowly, so that when war came the supply of shelters was seriously deficient in towns like Birmingham and Coventry, while in April 1941 Belfast still had

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<sup>26</sup> James Richards, "The Blitz: Sorting the Myth from the Reality," (BBC. Last modified February 2, 2011), 3, accessed September 11, 2017, [http://www.bbc.co.uk/history/british/britain\\_wwtwo/blitz\\_01.shtml](http://www.bbc.co.uk/history/british/britain_wwtwo/blitz_01.shtml) Richards, "The Blitz: Sorting the Myth."

<sup>27</sup> *United States Strategic Bombing Survey: Summary Reports (European War) (Pacific War)*, Washington, D.C.: Government Printing Office, 1946. Reprinted October 1987, 15, accessed January 20, 2021, <https://archive.org/details/unitedstatesstra00cent>.



spaces for only a quarter of its population.”<sup>28</sup> To counter this argument, although all three cities experienced significant raids, in each instance, civilian fatalities averaged less than 1 per ton of bombs, substantially less than expected based upon criticisms of the Government’s shelter policy.

**Table 6-12. Fatality Comparison**

<i>City</i>	<i>Fatalities</i>	<i>Fatalities (Per Ton)</i>
London	19,826	1.02
Birmingham	2,162	.93
Coventry	1,236	.70
Belfast	946	.58

*Source:* Data compiled from actual fatalities and tonnage dropped by city.

It is important to recognize the assumptions made prior to World War II about how attacks would occur and to understand the anti-war climate of the 1930s. With limited financial resources, the Government invested in the build-up of its military, ultimately reducing the scope of the bombing raids during the Blitz. Furthermore, for several years leading up to the war, ARP officials worked with local authorities to implement a comprehensive shelter plan. This included the production and distribution of 2.25 million Anderson shelters and financial and legislative support to ensure local authorities had an adequate number of shelters in their communities.

ARP personnel also used multiple communication tactics to bring awareness and offered guidance to civilians on ways to protect themselves during an aerial attack. By the start of the Blitz, public or domestic Anderson shelters were available for 17.5 million

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<sup>28</sup> Geoffrey Field, “Nights Underground in Darkest London: The Blitz, 1940-1941,” *International Labor and Working Class History*, No. 62, *Class and Catastrophe: September 11 and Other Working Class Disasters* (Fall, 2002), pp. 11-49, 13, accessed October 2, 2017, <http://www.jstor.org/stable/27672803>.

people representing 64 percent of the public in specific high risk areas. Furthermore, factories and offices had another 5 million shelters ready for employees.<sup>29</sup> Once the Luftwaffe began daily bombing raids over London, Churchill and his ministers adjusted policy as needed in response to the realities of the bombing attacks. These efforts included the improvement of the living conditions of existing Air Raid shelters and the investment in additional shelter options.

During the Blitz, approximately twenty percent of civilians used Government supplied Anderson shelters (distributed initially to 11.5 million people or 25 percent of the population). These shelters protected millions of people from the impact of blast and splinters as well as from house fires caused by incendiary devices. According to Teresa Wilkinson, Air Raid Warden, West Ham, “They were very, very effective. They stood up to a lot of punishment.”<sup>30</sup> Terence O’Brien in *Civil Defence* concludes, “Andersons properly sited and covered were usually undamaged by 50 kg bombs falling 6 ft. away or 250 kg bombs falling 20 ft away, and their occupants suffered no more than shock. Occasionally, they resisted bombs falling even nearer.”<sup>31</sup> However, while Anderson’s were shown to be a very effective defense in a bombing raid, some casualties did occur. According to Wilkinson, “The Anderson shelters were very good. They would stand up to everything except a direct hit.”<sup>32</sup>

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<sup>29</sup> O’Brien, *Civil Defence*, 504.

<sup>30</sup> Joshua Levine, *Forgotten Voices of the Blitz and the Battle of Britain* (UK: Ebury Press, 2006), 353.

<sup>31</sup> O’Brien, *Civil Defence*, 505.

<sup>32</sup> Levine, *Forgotten Voices*, 355.



Figure 6-7. Anderson Shelter after a raid, Peter Geekie, “The London Blitz - Terrifying five years of death and horror every day and night - could we cope with this today?,” Hub Pages, March 26, 2017, [The London Blitz - Terrifying five years of death and horror every day and night - could we cope with this today? - HubPages](https://www.hubpages.com/hub/The-London-Blitz-Terrifying-five-years-of-death-and-horror-every-day-and-night-could-we-cope-with-this-today?hpid=hp).

By February 15, 1941, bombing raids had damaged or destroyed more than 390,000 homes across Great Britain. For many, this Government provided shelter saved their lives. Based upon the average household size of 3.7 people, approximately 288,000 people with damaged or destroyed homes found refuge during the Blitz in an Anderson shelter.

**Table 6-13. Damage to Homes During the Blitz**

<i>Type of Damage</i>	<i>Homes Impacted</i>
<b>Destroyed and damaged beyond repair</b>	
In London	33,595
Elsewhere (excluding Scotland)	60,292
<b>Total</b>	<b>93,887</b>
<b>Seriously damaged but repairable</b>	
In London	123,395
Elsewhere (excluding Scotland)	175,520
<b>Total</b>	<b>298,915</b>

Source: War Cabinet, *Weekly Resume (No. 74)*, NAVAL, MILITARY AND AIR SITUATION from 12 noon January 23rd, to 12 noon January 30th, 1941, 11, accessed February 6, 2021, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-66-14.pdf>.

In addition to providing domestic shelters to large segments of the population, the information provided by ARP officials on how to create a strengthened room allowed large segments of the population to remain in their own homes. While this education did not guarantee immunity during an attack, it did help add an additional level of protection for those civilians.

Not all shelter types were as effective, however, and brick and concrete surface shelters provided less support against bomb blasts.<sup>33</sup> During the Blitz, public shelters across Great Britain were hit by high explosives killing or injuring people in them. As reported in *The War Cabinet Weekly Resume* for the week of October 24<sup>th</sup>, 1940:

A number of shelters, mostly public, have been hit. Two serious incidents of this kind occurred in London, one at the Druid Street railway arch shelter, Bermondsey, where 50 people were killed and 100 injured, and the other at St. Peter's Crypt, Southwark, resulting in 18 fatal casualties and 36 seriously wounded. At the latter some people are still missing (30th October, 1940). Other shelter incidents occurred in Kensington (brick), Poplar (under- ground), Battersea (trench) and Croydon (electrical showrooms used as a shelter). In Birmingham two public shelters were hit on the 24th-25th; on the 26th-27th. 24 people were killed and a number buried in a public basement shelter.<sup>34</sup>

Due to the large numbers of people taking refuge together in a public shelters, each direct hit had a greater impact. While numerous casualties did occur, over ten percent of the public used them on an ongoing basis, protected from blast and splinters from adjacent buildings.

In addition to the use of private and public shelters, about four percent of those living in London utilized underground stations or large shelters during bombing raids.

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<sup>33</sup> O'Brien, *Civil Defence*, 505.

<sup>34</sup> War Cabinet, *Weekly Resume (No. 61)*, 13.

Although the Government did not initially sanction these accommodations, the change in policy and subsequent living condition improvements protected the civilians sheltering in them. During the Blitz, on average, approximately 115,000 people slept in the Tubes nightly and during the month of September 175,000 civilians used this form of shelter. While this number fluctuated, during periods of intensive Luftwaffe attacks, people sleeping in the underground stations increased.

**Table 6-14. Civilians Sheltering in Tubes September 1940 – January 1941**

<i>Month/Timeframe</i>	<i>Civilians</i>
Late September, 1940	175,000
October	160,000
November	125,000
December	75,000
January – Post December 29 <sup>th</sup> raid	100,000
End of January	65,000

*Source:* London Transport estimates, in the *Daily Express* January 24, 1941, Amy Helen Bell, *London Was Ours: Diaries and Memoirs of the London Blitz* (London: I.B. Tauris & Co Ltd., 2008), 60.

Although bombing raids did hit several Tube stations resulting in 120 fatalities, this number represents a fraction of the number of people saved by this type of refuge. Without these underground shelters, a reasonable estimate of an additional 800 casualties can be argued.

While it is difficult to quantify the impact of Westminster’s shelter program during the Blitz, a comparison can be made to the early raids of World War I when civilians had no warning of an impending raid or access to any Government provided protection. It was not until after several raids over London killed 199 people and injured 563 (135 people per bomb ton), that in July 1917 the Government established a basic

civil defense organization.<sup>35</sup> The chart below illustrates civilian casualties during these early airplane raids. The high casualties per ton ratio represents the impact on civilians unprepared for any type of aerial assault. This leads to the conclusion that the Government shelter strategy of World War II substantially reduced civilian casualties.

**Table 6-15. Civilians Killed in London, Early Airplane Raids of the Great War, (May-December 1917)**

<i>Date</i>	<i>Incendiaries</i>	<i>Explosives</i>	<i>Weight (In lb.)</i>	<i>Tonnage</i>	<i>Killed</i>	<i>Injured</i>	<i>Total Casualties</i>	<i>Casualties Per Ton</i>
May 6		5	133	0.06	1	1	2	33.68
June 13		92	6,457	2.88	145	382	527	182.82
July 7		64	6,051	2.70	53	180	233	86.25
Sept 4/5		40	2,483	1.11	14	48	62	55.93
Sept 24	16	13	1,519	0.68	14	49	63	92.90
Sept 25	19	7	961	0.43	6	21	27	62.93
Sept 29	0	24	1,892	0.84	13	86	99	117.21
Sept 30	2	12	1,343	0.60	3	29	32	53.37
Oct 1	0	28	2,585	1.15	11	41	52	45.06
Oct 31	17	21	1,563	0.70	6	5	11	15.76
Dec 6	258	9	3,773	1.68	3	15	18	10.69
Dec 18	47	42	4,392	1.96	13	79	92	46.92
<b>Total</b>	<b>359</b>	<b>357</b>	<b>33,152</b>	<b>14.80</b>	<b>282</b>	<b>936</b>	<b>1218</b>	<b>82.30</b>

Source: Air Raid Statistics for the County of London 1917, Jones, *War in the Air* (Vol. 5), 549.

In addition to shelter and evacuation programs, the Government expanded British fire defenses with the creation of the Auxiliary Fire Service. By June 1940, almost 250,000 people worked in the Fire Services and during the Blitz the Government added an additional 24,000 more. Westminster also financed and distributed fire equipment to

<sup>35</sup> Jones, *War in the Air* (Vol. 5), 549; Edgar Jones, “Air Raid Casualties in the First World War”, Govt. UK, January 19, 2015, accessed January 23, 2021, [Air-raid casualties in the First World War - History of government \(blog.gov.uk\)](https://www.blog.gov.uk/2015/01/19/air-raid-casualties-in-the-first-world-war-history-of-government/).

ensure brigades had sufficient supplies in the event of an attack. ARP officials also focused on fire precautions education for communities and the general public.

In December 1940, Nazi Germany substantially increased their use of incendiaries and after the destruction of much of the City of London the night of December 29th, the Government mandated a formal fire watching program to reduce the damage and casualties caused by incendiaries. These efforts helped saved people's lives by reducing the size and number of fires per raid. During the week of January 9<sup>th</sup>, the Luftwaffe dropped approximately 154,000 incendiaries and 645 tons of high explosives. According to the *Weekly Resume* for that week, "There was a noticeable increase in the proportion of H.E. included in the initial fire-raising attacks and, although many fires were started, the prompt action of the civil defence services and public in getting them under control was a marked feature."<sup>36</sup> In addition, the sheer number of calls the Fire Service responded to is a testament to the work they performed. In London alone they responded to over 50,000 fires during the Blitz.<sup>37</sup> Furthermore, the creation of the National Fire Service in August 1941 helped support civilians for the remainder of the war.

A case can also be made that fire-fighting improved over the course of the Blitz. As the Luftwaffe increased the use of incendiaries while maintaining approximately the same amount of high explosives, the casualties per raid did not proportionately increase. Instead, the number of people killed or wounded remained consistent or declined each

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<sup>36</sup> War Cabinet, *Weekly Resume (No. 72) of the NAVAL, MILITARY AND AIR SITUATION from 12 noon January 9th, to 12 noon January 16th, 1941*, January 16, 1941, 8, accessed February 6, 2021, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-66-14.pdf>.

<sup>37</sup> "Firefighters of the Second World War," London Fire Brigade, 2021, accessed January 20, 2021 <http://www.london-fire.gov.uk>.

month leading to the conclusion that incendiaries were put out prior to turning into large fires. As shown in the chart below, the German use of incendiaries increased significantly from December until May, although casualties remained between .30 and .69 per bomb ton and incendiary cannister excluding February, which had only a couple of small raids.

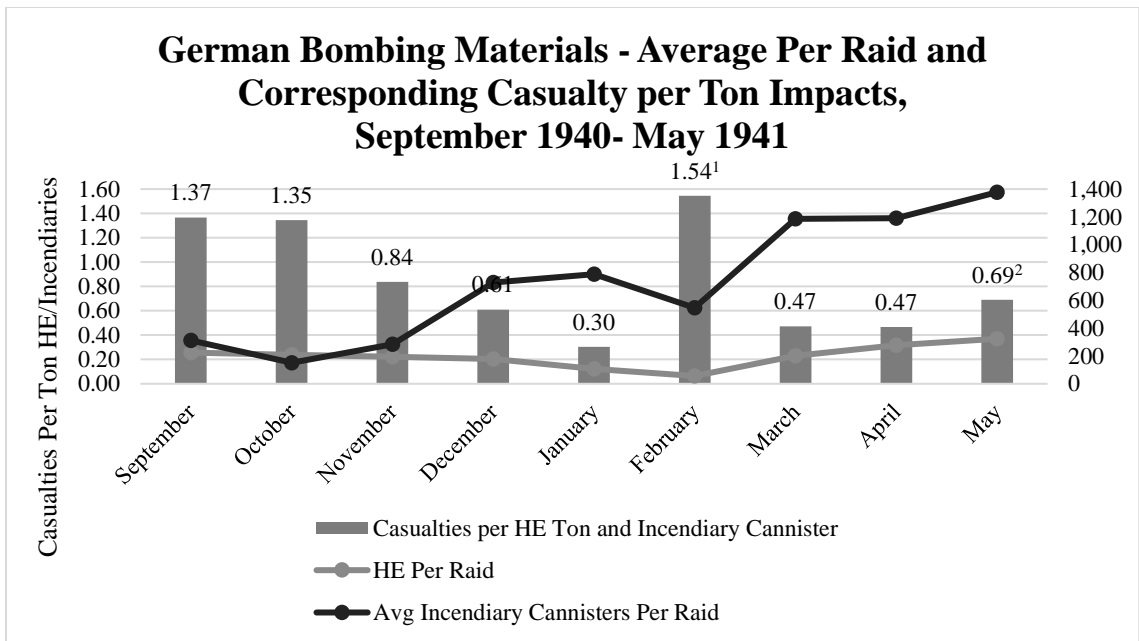


Figure 6-8. German bombing materials and casualties per ton. Data compiled from tonnage, incendiary cannister, and casualties per raid data.

<sup>1</sup>789 total fatalities for the month. Almost half caused by two raids over Swansea. The remainder caused by small raids throughout the month. One of which killed 68 people sheltering at the Stainer Street Arch in London.<sup>38</sup>

<sup>2</sup>Final raid of the war on London – 507 German bombers, 711 tons of HE and 2,393 Incendiary cannisters containing 76,576 Incendiaries. Extensive number of fires and multiple water main breaks

In order to ensure the success of Westminster’s civil defense programs, Government officials created an organization of almost 1.8 million men and women who

<sup>38</sup> “Londoner Remembers the Stainer Street Bombings,” BBC News, February 23, 2010, accessed January 20, 2021, [BBC - Londoner remembers the Stainer Street bombings](https://www.bbc.com/news/uk-10811111).



performed critical, yet dangerous tasks. These included helping the public find shelter, rescuing trapped victims, and performing stretcher and first aid duties. Moreover, almost 80 percent of civil defense personnel did it on a part-time basis while continuing to work their regular jobs.

**Table 6-16. Civil Defense and Police Services, 1940-1941 (Thousands)**

Service	Jun-40			Jun-41		
	Men	Women	Total	Men	Women	Total
<b>A.R.P. Services<sup>1</sup></b>	828.1	151.8	<b>979.9</b>	869.3	165.1	<b>1034.4</b>
<b>Fire Services<sup>2</sup></b>	233.8	13.6	<b>247.4</b>	256.2	15.4	<b>271.6</b>
<b>Casualty Services<sup>3</sup></b>	61.6	167.2	<b>228.8</b>	61.7	158.2	<b>219.9</b>
<b>Regular Police</b>	64.4	0.3	<b>64.7</b>	64.4	0.4	<b>64.8</b>
<b>Auxiliary Police<sup>4</sup></b>	191.2	0.8	<b>192</b>	194.4	1	<b>195.4</b>
<b>Total</b>	<b>1379.1</b>	<b>333.7</b>	<b>1,712.8</b>	<b>1,446</b>	<b>340.1</b>	<b>1,786.1</b>

Source: O'Brien, *Civil Defence*, 690.

<sup>1</sup>Civil Defense Services: Wardens, rescue and first-aid parties, report and control centers, messengers

<sup>2</sup>Includes regular fire brigades, Auxiliary Fire Service, and Works Brigades

<sup>3</sup>Emergency ambulance service and first-aid post service.

<sup>4</sup>Police War Reserve, First Police Reserve, Special Constables, and Women's Auxiliary Police Corps.

The efforts of civil defense workers saved thousands of lives by providing essential support. For example, in London alone the Rescue Services attended between 15,000 and 20,000 incidents and saved 10,000 trapped civilians.<sup>39</sup> In one example, workers freed people trapped after a bombing raid the night of September 19<sup>th</sup> as described in the following account, "At Petherton Road, where a large calibre bomb had demolished a five-storey building, a tunnel 5 feet horizontally was cut into the debris to release two casualties. The whole operation took seven hours to complete and was

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<sup>39</sup> Laurence Ward, *The London County Council: Bomb Damage Maps 1939-1945* (London: Thames and Hudson LTD, 2015), 17.

performed whilst the raid was still in progress, in the presence of coal gas and in wreckage which was in imminent danger of collapse.”<sup>40</sup> By the end of World War II, the London Rescue Service had provided aid to over 22,000 injured people.<sup>41</sup>



Figure 6-9. Petherton Road, Islington, following an attack on September 16, 1940. Heavy Rescue party leader Fred Bashom was awarded the George Medal for his part in the rescue of two casualties. Adams, “The Blitz Period in Islington (1940-1941).”

The actions of stretcher parties and first aid workers also reduced casualties by treating injuries quickly and identifying those needing hospital care. During the first two years of the war, over 98,000 people were treated by first-aid personnel with 20 percent of those sent on to a hospital. The treatment of minor injuries at First Aid Posts reduced the chances of infection leading to more serious medical issues or death. In addition to First Aid posts, stretcher teams and ambulances transported seriously injured civilians. In

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<sup>40</sup> W. Eric Adams (Islington Town Clerk and ARP Controller), “The Blitz Period in Islington (1940-1941),” Friends of Islington Museum, September 2, 2020, accessed January 20, 2021, [The Blitz Period in Islington \(1940-41\) – Friends of Islington Museum \(friendsofim.com\)](https://www.friendsofism.com/).

<sup>41</sup> Ward, *London County Council Bomb Damage Maps*, 17.

London alone, ambulances delivered 30,000 air raid casualties to area hospitals.<sup>42</sup>

Without their services, civilian deaths would have increased significantly due to the lack of rapid medical care.

**Table 6-17. British Civilians Injured During World War II, September 1939-December 31, 1941**

<i>Timeframe</i>	<i>Admitted to Hospital</i>			<i>Slightly Injured</i>			<i>Treated At First Aid Posts and Mobile First Aid Units (estimated one-fifth sent on to hospital)</i>
	<i>London</i>	<i>Elsewhere</i>	<i>Total</i>	<i>London</i>	<i>Elsewhere</i>	<i>Total</i>	<i>Total</i>
Sept. 3, 1939 - Sept. 7, 1940	441	1,848	2,289	33,756	20,254	54,010	54,700
Sept. 7, 1940 - Dec. 31, 1940	17,937	10,303	28,240				
1941	7,641	13,524	21,165	13,236	20,880	34,116	43,775
<b>Total</b>	<b>26,019</b>	<b>25,675</b>	<b>51,694</b>	<b>46,992</b>	<b>41,134</b>	<b>88,126</b>	<b>98,475</b>

Source: O'Brien, *Civil Defence*, 677.

Comparing the Blitz to other bombing raids from 1937 to 1940 provides additional clarity around the differences in casualty rates and further validates British air and civil defense efforts. Guernica, Rotterdam, and Wieluń had negligible air defenses allowing German planes to identify key targets and attack at will. In Warsaw, after several weeks of raiding, and the loss of the Polish air force, the city had only a few anti-aircraft guns to defend it. Conversely, during the Blitz, British home defenses impacted Germany's air strategy while gaining experience, which by May 1941, made them more effective against night raiding.

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<sup>42</sup> Geekie, "The London Blitz."

For civilians living in Rotterdam and Warsaw, an advancing German army led to massive numbers of refugees fleeing the city. In Rotterdam, the large number of people who left the city prior to the raid actually reduced the number of casualties. After the May 10, 1940 raid, newspapers reported that over 30,000 people had been killed in the attack. However, due to this voluntary evacuation only 900 died in the raid. Conversely the British evacuation strategy focused on removing vulnerable civilians from high risk areas and evacuating civilians from air raid damaged communities.

Civilians in Guernica and Wieluń had no advanced warning and as a result were caught unprepared. Moreover, civilians hid in their basements and houses lacking air raid shelters. In addition, while Barcelona had large numbers of shelters for its civilians, short warning periods did not give people enough time to reach them. Great Britain, on the other hand, used lessons from World War I and the Spanish Civil War, and equipped civilians with domestic and public shelter options.

British civil defense services also had the time and resources to assist casualties and perform recovery tasks before the next bombing raid. In both Warsaw and Rotterdam after relatively short bombardments, German land invasions followed, limiting civilian support options. Furthermore, in Warsaw, fighting continued in the streets making it difficult for rescue workers to help injured people and German soldiers deliberately killed civilians as punishment for Warsaw's "defiance."

In Rotterdam and Guernica, fires resulting from high explosives and incendiaries spread quickly making it difficult for fire brigades to contain the blazes. Whereas in Warsaw, after weeks of defending the city from the German military, fire-services

personnel were evacuated prior to the September 25<sup>th</sup> bombing raid leaving the fires to burn uncontrollably. Although Great Britain experienced numerous large fires during the Blitz, the eight month timeframe gave the Government time to adjust its fire prevention and control policies as needed. Furthermore, it had a large Fire Services organization and the ability to mandate civilian fire watching.

Prior to World War II, British Government projections overestimated the number of civilians expected to die in a prolonged aerial bombing raid. However, these forecasts used available information along with conflicts throughout Europe to establish a 'worst case' scenario. During the Blitz, Germany did not engage in the expected level of bombing, although the tonnage dropped should have resulted in significantly more casualties. The efforts of the RAF and anti-aircraft gun crews saved thousands of lives by destroying German bombers and escort planes and forcing raiders to attack primarily at night. Moreover, the Government's evacuation and shelter programs helped keep people safe by removing vulnerable civilians out of high risk areas and by protecting civilians via domestic and public shelters. Furthermore, the establishment of the AFS and schemes to limited the number of fires caused by incendiary devices made a significant impact as Nazi Germany exponentially increased the number of incendiaries dropped per raid. Westminster's investment in a civil defense organization helped ensure bombing attack victims received the best care possible, which further reduced casualties during the Blitz.

The comparison between cities exposed to aerial warfare during this same period further reinforces the success of the British Government's civil defense programs and

personnel. It also provides several case studies highlighting the importance of having strong air defenses. While the evidence suggests Great Britain's civil defense measures were better than that of many other countries, there is an opportunity to further explore the defense strategies and attacks made on each of the comparison nations and to expand this research to include later World War II bombing raids.

Powerful images and personal accounts of devastation and resilience during the Blitz are facets of the larger history of modern warfare. One such symbol, St Clement Danes Church in the City of Westminster still bears the scars of shrapnel as a reminder of the devastation from the bombing attacks on the city. Almost destroyed by the Blitz in 1941 and re-consecrated in 1958, it stands as a testament to the strength of the British people. Dedicated to the Royal Air Force, it also represents the horror of aerial warfare, forever remembered by those who survived it.



Figure 6-10. St Clement Danes Church on fire May 11, 1941, St Clement Danes Church, History, 1941, St Clement Danes Church. History, <https://stclementdanesraf.org/history/>.



Figure 6-11. St Clement Danes preserved shrapnel damage, June 2, 2019, St Clement Danes Church. author's personal collection.

The advent of the airplane has forever changed conflicts between countries and civilians living away from the battlefield are no longer immune from the violence of war. Before technology made it possible to inflict widespread damage from the air, philosophers envisioned the possibility of an Armageddon unleashed on a nation. World War I first tested the impact of aerial bombing raids on civilians and during World War II large scale attacks killed people in massive numbers.

During the 1930s the British Government prepared for a potential war with a future enemy. Armed with ‘worst case’ scenarios and limited funds, Westminster worked with local authorities on civil defense measures. As war with Nazi Germany loomed ever closer, the Government assumed greater control and preparations ramped up for the expected large scale attack. When the Blitz began in September 1940, civilians adapted to the realities of daily bombing raids and the Government enhanced its civil defense programs. By the last raid on September 10, 1941 over 90,000 men, women, and children had died or been seriously injured. In the years following the war, Great Britain rebuilt its cities and mourned its dead. Its people forever changed by their experiences.

In the years after the Blitz, written accounts have focused on Government failures and those who died, forgetting the millions who survived. The British Government, though far from perfect, deserves due credit for saving the lives of its citizens while fighting a war to remain independent and free from tyranny.

**“If we win, nobody will care. If we lose, there will be nobody to care.”**  
Winston Churchill, House of Commons Secret Session, June 25, 1941<sup>43</sup>

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<sup>43</sup> Robert Rhodes James ed. *Winston S. Churchill: His Complete Speeches, 1897–1963*, ed. Robert Rhodes James, (London: Chelsea House Publishers / R.R. Bowker Company, January 1, 1974), vol. 6, 6438.

## Bibliography

### Primary Sources

#### Books

- Douhet, Giulio *The Command of The Air*. 1921. Translated by Dino Ferrari. New York: Coward-McCann, 1942. Rep. in 1983 by the Office of Air Force History. New Imprint by AIR FORCE HISTORY AND MUSEUMS PROGRAM Washington, D.C. 1998 Accessed September 19, 2018, <http://www.airforcemag.com/MagazineArchive/Documents/2013/April%202013/0413keeperfull.pdf>.
- Fuller, Col. J.F.C. *The Reformation of War* London: Hutchinson & Co., 1923. Accessed May 31, 2020, <https://archive.org/details/reformationofwar00fulluoft/page/n17/mode/2up>.
- Scott, James Brown (edt). *The Hague Conventions and Declarations of 1899 and 1907*. New York: Oxford University Press, 1915. Accessed July 21, 2020, <https://archive.org/details/hagueconventions00inteuft/page/n1/mode/2up>.
- Spaight, J.M. *Aircraft in War*. London: Macmillan, 1914. Accessed July 6, 2020, [https://archive.org/details/BombingVindicated\\_201711/page/n3/mode/2up?q=civilian](https://archive.org/details/BombingVindicated_201711/page/n3/mode/2up?q=civilian)
- Spaight, J.M. *Air Power and War Rights*. New York: Longmans, Green, and Co. 1924. Accessed July 6, 2020, <https://ia801308.us.archive.org/35/items/in.ernet.dli.2015.278562/2015.278562.Air-Power.pdf>.
- Spaight, J.M. *Air Power in the Next War*. London: Geoffrey Bles, 1938. Accessed July 6, 2020, <https://archive.org/details/in.ernet.dli.2015.72924/page/n37/mode/2up>.
- Wells, H.G. *The War in The Air: And Particularly How Mr. Bert Smallways Fared While It Lasted*. London: George Bell and Sons, 1908. Accessed June 29, 2020, <https://library.si.edu/digital-library/book/warair00wella>.

#### Government Documents – United States

- Eliot, Martha M., Associate Chief, Children's Bureau, United States Department of Labor *Civil Defense Measures for the Protection of Children Report of Observations in Great Britain*, February 1941. Washington: United States Government Printing Office Washington, 1942. Accessed September 18, 2018, <https://ia801406.us.archive.org/31/items/civildefensemeas00elio/civildefensemeas00elio.pdf>.



*Peace and War: United States Foreign Policy 1931-1941* Washington D.C. Government Printing Office 1943. Accessed June 2, 2020, <https://www.ibiblio.org/hyperwar/Dip/PaW/index.html>

*United States Strategic Bombing Survey: Summary Reports (European War) (Pacific War)*, Washington, D.C.: Government Printing Office, 1946. Reprinted October 1987. Accessed January 20, 2021, <https://archive.org/details/unitedstatesstra00cent>.

## **Government Documents – Great Britain**

### **Air Raid Precautions Pamphlets/Guides**

Air Raid Precautions. *Handbook No. 8 (2<sup>nd</sup> Edition): The Duties of Air Raid Wardens*, 1938. The National Archives, Kew, Item HO 186/1377.

Air Raid Precautions. *Handbook No. 9 (First Edition): Incendiary Bombs and Fire Precautions*, June 1940. The National Archives, Kew, Item HO 186/1780.

Air Raid Precautions. *Householders' Handbook*, March 31, 1937. Accessed August 8, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-269.pdf>.

County Borough of Croydon. *Civil Defence: An Exploratory Handbook*, December 1939. The National Archives, Key, Item HO 207/568.

Keely, Pat. "Lookout in the blackout," 1940, The National Archives, INF 3/293, Accessed November 11, 2020. [http://www.nationalarchives.gov.uk/theartofwar/prop/home\\_front/INF3\\_0293.htm](http://www.nationalarchives.gov.uk/theartofwar/prop/home_front/INF3_0293.htm).

MacRoberts, Major N. de. P. *A.R.P. Lessons from Barcelona: Some Hints for Local Authorities and for Private Citizens*, May 1938. The National Archives, Kew, Item MEPO 2/3632.

*National Service A Guide to the Ways in Which the People of This Country May Give Service*, January 1939. Accessed September 17, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-280.pdf>

Public Information Leaflets and Householders' Book *The Protection of your Home against Air Raids*, 1939. The National Archives, Kew, Item HO 186/113.

*Publicity for Pamphlet 'Your Home as an Air Raid Shelter'*, 1940-1943. The National Archives, Kew, Item HO 186/1214.

*Some Things You Should Know if War Should Come*, Leaflet No. 1, 1939, 1900s.org, Accessed November 13, 2020, <https://www.1900s.org.uk/civ-def-leaflets/front.jpg>.

## **Cabinet Minutes/Conclusions**

- Cabinet (15). *Conclusions*, March 8, 1933. Accessed July 29, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-23-75.pdf>
- Cabinet (31). *Conclusions* May 29, 1935. Accessed July 29, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-23-81.pdf>.
- Cabinet (58). *Meeting Minutes*, December 9, 1925. Accessed April 9, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/small/cab-23-51-cc-58-25-12.pdf>.
- Cabinet (61). *Meeting Minutes*, November 16, 1932. Accessed September 9, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-23-73.pdf>.
- Cabinet (45). *Meeting Minutes*, December 5, 1934. Accessed April 10, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-23-80.pdf>.
- Cabinet (46). *Meeting Minutes*, December 12, 1934. Accessed April 10, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-23-80.pdf>.
- Cabinet (48). *Meeting Minutes*, October 23, 1935. Accessed September 9, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-23-82.pdf>.
- Cabinet (96). *Meeting Minutes*, October 19 – December 21, 1938. Accessed April 10, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-23-96.pdf>.
- War Cabinet (121). *Conclusions*, December 21, 1939. Accessed September 17, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-65-2.pdf>.
- War Cabinet (280). *Conclusions*, October 30, 1940. Accessed September 19, 2018, <http://discovery.nationalarchives.gov.uk/details/r/C9110708>.
- War Cabinet (295). *Conclusions of a Meeting of the War Cabinet held in the Cabinet War Room, S.W. 1. on Monday, November 25, 1940, at 5 P.M.*, November 25, 1940. Accessed February 7, 2021, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-65-10.pdf>.
- War Cabinet (306). *Conclusions of a Meeting of the War Cabinet, held in the Cabinet War Room, S.W. 1, on Monday, December 16, 1940, at 5 P.M. December 16, 1940.* Accessed February 6, 2021, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-65-10.pdf>.

War Cabinet (308), *Conclusions of a Meeting of the War Cabinet held in the Cabinet War Room, S.W. 1, on Thursday, December 19, 1940, at 4-3 0 P.M.*, accessed February 6, 2021, December 19, 1940. Accessed February 7, 2021, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-65-10.pdf>.

War Cabinet (310), *Conclusions of a Meeting of the War Cabinet held at 1 0 Downing Street, S.W.1, on Friday, December 27, 1940, at 1 2 NOON*, December 27, 1940, 211, accessed February 6, 2021, December 19, 1940, 197, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-65-10.pdf>.

War Cabinet (31), *Conclusions of a Meeting of the War Cabinet held at 10 Downing Street, S.W. 1, on Monday, March 24, 1941, at 5 P.M*, March 24, 1941. Accessed, February 7, 2021 <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-65-18.pdf>.

War Cabinet (42), *Conclusions of a Meeting of the War Cabinet held at 10, Downing Street, S. W. 1, on Monday, April 21, 1941, at 5 P.M.*, April 21, 1941. Accessed February 6, 2021, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-65-18.pdf>.

#### **Civil Defense Reports (1939 – 1940)**

*Civil Defence Report (No. 7) Seventh Report submitted by the Minister of Home Security covering the period from midnight 29th October to midnight 12th November 1939*, John Anderson, November 17, 1939. Accessed February 3, 2021, [Record Type: Memorandum Former Reference: WP \(R\) \(39\) 84 Title: Civil... | The National Archives](#).

*Civil Defence Report (No. 9) Ninth Report submitted by the Minister of Home Security covering the period from Midnight 26th November to Midnight 10th December 1939*, John Anderson, December 10, 1939. Accessed February 3, 2021, [Record Type: Memorandum Former Reference: WP \(R\) \(39\) 117 Title: Civil... | The National Archives](#).

*Civil Defence Report (No. 12) Twelfth Report submitted by the Minister of Home Security, covering the period from Midnight 21st January to Midnight 4th February, 1940*, John Anderson, February 4, 1940. Accessed February 3, 2021, [Record Type: Memorandum Former Reference: WP \(R\) \(40\) 51 Title: Civil... | The National Archives](#).

*Civil Defence Report (No. 13) Thirteenth Report submitted by the Minister of Home Security, covering the period from Midnight 4th February to Midnight 18th February, 1940*, John Anderson, February 23, 1940. Accessed February 3, 2021, [Record Type: Memorandum Former Reference: WP \(R\) \(40\) 70 Title: Civil... | The National Archives](#).

*Civil Defence Report (No. 16) Sixteenth Report submitted by the Minister of Home Security, covering the period from Midnight 17th March, to Midnight 14th April 1940, John Anderson, April 17, 1940. Accessed February 3, 2021, [Record Type: Memorandum Former Reference: WP \(R\) \(40\) 124 Title: Civil... | The National Archives.](#)*

*Civil Defence Report (No. 19) Nineteenth Report submitted by the Minister of Home Security, covering the period from Midnight, 9th June, 1940 to Midnight, 7th July, 1940, John Anderson. July 13, 1940. Accessed February 3, 2021, [Record Type: Memorandum Former Reference: WP \(R\) \(40\) 178 Title: Civil... | The National Archives.](#)*

*Civil Defence Report (No. 20) Twentieth Report submitted by the Minister of Home Security, covering the Period from Midnight 7th July, 1940, to Midnight 4th August, 1940, John Anderson August 4, 1940. Accessed February 1, 2021, [Record Type: Memorandum Former Reference: WP \(R\) \(40\) 185 Title: Civil... | The National Archives.](#)*

*Civil Defence Report (No. 21) Twenty-first Report submitted by the Minister of Home Security, covering the period from Midnight 4th August, 1940, to Midnight 1st September, 1940, John Anderson, September 7, 1940. Accessed February 1, 2021, [Record Type: Memorandum Former Reference: WP \(R\) \(40\) 191 Title: Civil... | The National Archives.](#)*

*Civil Defence Report (No. 22) Twenty-second Report submitted by the Minister of Home Security, covering the period from Midnight 1st September, 1940, to Midnight 29th September, 1940, Herbert Morrison, October 10, 1940. Accessed February 3, 2021, [Record Type: Memorandum Former Reference: WP \(R\) \(40\) 196 Title: Civil... | The National Archives](#)*

## **Documents/Papers**

*Air Defence Imperial Conference Meeting, February 7, 1924. Accessed July 25, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-164.pdf>.*

*Air Estimates, and the Course of Air Expenditure in this Country and Abroad, January 14, 1929. Accessed August 5, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-201.pdf>.*

*Air Force Expansion for Home Defence, October 1925. Accessed July 25, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-175.pdf>.*

- Air Ministry, *Air Raid Precautions*, Lord Rothermere, February 20, 1918. Accessed February 3, 2021, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-42.pdf>.
- Air Parity in Western Europe*, Secretary of State for Air, May 31, 1935. Accessed August 5, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-255.pdf>.
- Air Policy and A One-Power Air Standard*, Secretary of State for Air, February 1923. Accessed August 5, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-158.pdf>.
- Air Raid Precautions*, May 31, 1935. Accessed August 8, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-255.pdf>.
- Air Raid Precautions*, Home Secretary, November 14, 1933. Accessed August 8, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-244.pdf>.
- Air Raid Precautions*, Home Secretary, May 13, 1935. Accessed August 8, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-255.pdf>.
- Air Raid Precautions*, Home Secretary, May 24, 1935. Accessed August 27, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-255.pdf>.
- Air Raid Precautions*, University of Toledo Digital Repository, March 1941. Accessed September 10, 2018, <http://utdr.utoledo.edu/cgi/viewcontent.cgi?article=1481&context=ur-87-68>.
- Air Raid Precautions Allocation of Cost Between Exchequer and Local Authorities*, Home Secretary, September 24, 1937. Accessed September 15, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-271.pdf>.
- Air Raid Precautions and National Voluntary Service*, October 28, 1938. Accessed September 17, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-279.pdf>.
- Air Raid Precautions Bill: Financial Provisions*, March 3, 1939. Accessed September 22, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-284.pdf>.
- Air Raid Precautions. *Defence: Passive Defence 1938*, The National Archives, Kew, Item CO 323/1592/66.
- Air Raid Precautions Expenditure*, Home Secretary, July 26, 1937. Accessed September 15, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-271.pdf>.

Air Raid Precautions Department, Intelligence Branch. *Monthly Intelligence Report (No. 231), Effects of Air Raids in Spain and China*, August 15, 1938. The National Archives, Kew, Item CO 323/1592/66.

*Air Raid Precautions, Need for Legislation*, Home Secretary, March 19, 1937. Accessed September 9, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-269.pdf>.

Air Raid Precautions. *Underground Shelter Policy 1941*. The National Archives, Kew, Item T 221/14.

*Air Raid Warnings: Copy of a letter addressed to the Prime Minister by the Air Officer Commanding-in-Chief, Fighter Command*, June 29, 1940, Accessed September 18, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-66-9.pdf>.

*A Memorandum on the Present and Future Position in Europe*, August 28, 1933. Accessed August 5, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-243.pdf>.

*A Military Appreciation of the Present World Situation*, Secretary of State for War, October 28, 1932. Accessed August 8, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-239.pdf>.

*Anglo-French-Italian Air Parity*, May 24, 1928. Accessed August 5, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-195.pdf>.

*Appreciation of the Situation in the Event of War Against Germany*, September 14, 1938. Accessed July 25, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-278.pdf>.

Cabinet Committee on Preparation for The Disarmament Conference. *Report*, January 11, 1932. Accessed August 8, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-227.pdf>.

Chemical Warfare Committee. *Memorandum on the Protection of the Civil Population Against Gas Attack*, May 1925. Accessed August 5, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-175.pdf>.

Chiefs of Staff Committee, Joint Intelligence Sub-Committee, *Summary of the Likely Forms and Scales of Attack That Germany Could Bring to Bear on the British Isles in the Near Future*, June 6, 1940, 7, accessed February 6, 2021, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-66-9.pdf>.

Committee on German Re-Armament. *Report*, December 11, 1934. Accessed August 8, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-251.pdf>.

- Committee on German Re-Armament. *Report*, December 18, 1934. Accessed August 8, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-251.pdf>.
- Committee of Imperial Defence. *Air Raid Precautions in the Event of War 1923-1932*. The National Archives, Kew, Item HO 45/14650B.
- Committee of Imperial Defence. *Air Raid Precautions: Suggested Administrative Organisation for Air Raids Precautions Services*, Chairman of the Air Raids Precautions (Policy) Sub-Committee, October 12, 1933. Accessed August 5, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-234.pdf>.
- Committee of Imperial Defence. *Chemical Warfare Policy*, October 8, 1926. Accessed August 5, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-181.pdf>.
- Committee of Imperial Defence. *Communications for Air Raid Intelligence in London and the Hackney Decontamination Scheme*. December 1932 – June 1934. The National Archives, Kew, Item CAB 46/24.
- Committee of Imperial Defence, Chiefs of Staff Subcommittee. *Comparison of the Strength of Great Britain With That of Certain Other Nations As of May 1937 Report*, February 9, 1937. Accessed August 8, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-268.pdf>.
- Committee of Imperial Defence, Chiefs of Staff Subcommittee. *Imperial Defence Policy: Annual Review 1933*, October 12, 1933. Accessed August 8, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-244.pdf>.
- Committee of Imperial Defence, Chiefs of Staff Subcommittee. *The Proposed Five-Power Conference: Germany and Italy Objections to a Guarantee to the United Kingdom* November 9, 1936. Accessed August 8, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-265.pdf>.
- Committee of Imperial Defence. *Coast Defence, Report of Sub-Committee*, June 9, 1932. Accessed August 8, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-231.pdf>.
- Committee of Imperial Defence. *Defence Co-ordination*, February 7, 1936. Accessed August 8, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-259.pdf>.
- Committee of Imperial Defence. *German Rearmament: Memoranda Prepared in the Admiralty, War Office and Air Ministry*, November 23, 1934. Accessed August 8, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-251.pdf>.



- Committee of Imperial Defence, Chiefs of Staff Subcommittee. *Imperial Conference 1937 – Review of Imperial Defence*, February 22, 1937. Accessed August 8, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-268.pdf>.
- Committee of Imperial Defence, Sub-Committee on Air Raid Precautions. A *Memorandum on The Preparation for the Passive Defence of London Against Aerial Bombardment*, July 20, 1933. The National Archives, Kew, Item CAB 46/6.
- Committee of Imperial Defence, Sub-Committee on Air Raid Precautions. *Effects of Aerial Attack on the United Kingdom During the Great War*, June 18, 1924. The National Archives, Kew, Item CAB 46/3.
- Committee of Imperial Defence, Sub-Committee on Air Raid Precautions. *Note on the Estimated Scale of Gas Attack on London*, October 18, 1927. The National Archives, Kew, Item CAB 46/4.
- Committee of Imperial Defence, Sub-Committee on Air Raid Precautions. *Policy with Regard To Respirators*, October 14, 1935. Accessed August 8, 2020 <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-257.pdf>.
- Committee of Imperial Defence, Sub-Committee on Air Raid Precautions. *Proposal for a Broadcast Dealing with Gas Attacks Upon the Civil Population*, June 15, 1934. Accessed May 31, 2020 <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-250.pdf>.
- Committee of Imperial Defence, Sub-Committee on Air Raid Precautions. *Provision for Air Raids Services*, December 3, 1934. Accessed August 8, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-251.pdf>.
- Committee of Imperial Defence. Sub-Committee on Air Raid Precautions. *Report* July 8, 1925. Accessed September 9, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-175.pdf>.
- Committee of Imperial Defence, Sub-Committee on Air Raid Precautions. *Fourth Annual Report*, November 15, 1928. Accessed September 9, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-199.pdf>.
- Committee of Imperial Defence, Sub-Committee on Air Raid Precautions. *Fourth Annual Report*, November 10, 1932. Accessed August 8, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-239.pdf>.
- Committee of Imperial Defence, Sub-Committee on Air Raid Precautions. *Report*, June 30, 1937. Accessed May 31, 2020 <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-270.pdf>.



- Committee of Imperial Defence, Sub-Committee on Defence Policy and Requirements. *Financial Aspects of Air Raid Precautions*, March 1937. Accessed May 31, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-269.pdf>.
- Committee of Imperial Defence, Sub-Committee on Defence Policy and Requirements. *Plan for the Further Expansion of the Royal Air Force*, February 20, 1937. Accessed August 8, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-268.pdf>.
- Committee of Imperial Defence, Sub-Committee on Defence Policy and Requirements. *Programmes of the Defence Services*, February 12, 1936. Accessed August 8, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-256.pdf>.
- Committee of Imperial Defence: Sub-Committee on Defence Policy and Requirements. *The Re-Orientation of the Air Defence System of Great Britain*, July 9, 1935. Accessed August 8, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-269.pdf>.
- Committee of Imperial Defence, Sub-Committee on Defence Requirements. *Report*, February 28, 1934. Accessed August 8, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-247.pdf>.
- Defence Expenditure*, June 25, 1937. Accessed August 8, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-270.pdf>.
- Defence Expenditure In Future Years*, October 1937. Accessed September 15, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-272.pdf>.
- Defence Expenditure in Future Years*, Minister for Co-Ordination of Defence, February 1938, Accessed August 13, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-274.pdf>.
- Developments in French Air Force*, Secretary of State for Air, March 24, 1922. Accessed August 5, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-136.pdf>.
- Disarmament*, November 5, 1932. Accessed August 5, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-234.pdf>.
- Draft Disarmament Convention, Submitted to the Disarmament Conference at Geneva*, Presented by the Secretary of State for Foreign Affairs to Parliament, March 16, 1933. Accessed August 8, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-239.pdf>.

- Enrollment of Personnel for Anti-Aircraft Emergency Services*, October 13, 1930.  
Access August 6, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-215.pdf>.
- Imperial Defence Policy*, October 7, 1930. Accessed August 6, 2020,  
<http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-215.pdf>.
- Indications of Germany's Disregard of Part V of Versailles Treaty*, July 14, 1933.  
Accessed August 8, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-242.pdf>.
- German Declaration on Rearmament. Proposed Reply to German announcement*,  
Secretary of State for Foreign Affairs, March 17, 1935. Accessed August 8, 2020,  
<http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-254.pdf>.
- German Ministers' Speeches – May 1934 to January 1936*, Secretary of State for Foreign  
Affairs, February 10, 1936. Accessed August 8, 2020,  
<http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-260.pdf>.
- German Observance of International Law, Report*, Chiefs of Staff Committee. September  
14, 1939. Accessed August 13, 2020,  
<http://filestore.nationalarchives.gov.uk/pdfs/large/cab-66-1.pdf>.
- German Rearmament*, Secretary of State for Foreign Affairs, April 23, 1934. Accessed  
August 8, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-249.pdf>.
- Germany*, Secretary of State for Foreign Affairs, July 20, 1936. Accessed August 8,  
2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-263.pdf>.
- Germany's Illegal Rearmament and Its Effect on British Policy*, March 24, 1934.  
Accessed August 8, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-248.pdf>.
- Home Office, *The Protection of Your Home Against Air Raids* London: His Majesty's  
Stationary Office, March 31, 1937. Accessed November 13, 2020,  
<http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-269.pdf>.
- Home Office, Air Raid Precautions Department, *Memorandum on the Position of Air  
Raid Precautions by the Spring of 1937*, John Simon, December 31, 1936, Accessed  
September 9, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-268.pdf>.
- Home Office, *History of the Air Raid Warning System, September 1939 - March 1944*,  
The National Archives, Kew, Item HO 186/2464.

Home Office War Book; *Air Raid Precautions, 1935-1939*, The National Archives, Kew, Item HO 144/21266.

*Home Opinion As Shewn in the Mails to U.S.A. and Eire*, October 4, 1940, , The National Archive CAB 66/12.

*Material for Deciding British Policy in View of Germany's Withdrawal from the Disarmament Conference*, October 20, 1933. Accessed August 5, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-243.pdf>.

Ministerial Committee on Defence Requirements, Sub-Committee on Air Parity. *Interim Report*, May 8, 1935. Accessed August 8, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-255.pdf>.

Ministerial Committee. *Disarmament Conference, 1932: The German Disarmament Proposals: Technical Aspect*, November 10, 1933. Accessed August 5, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-245.pdf>.

Ministerial Committee. *The Disarmament Conference 1932: Defence Requirements Report*, July 31, 1934. Accessed August 8, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-250.pdf>.

Ministerial Committee on Disarmament Dealing with Air Defence. *Imperial Defence Policy: Interim Report*, June 16, 1934, Accessed August 8, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-250.pdf>.

*Minister's Broadcast*, October 31, 1940: 2. CAB 67/8/80. Accessed December 17, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-67-8.pdf>.

National and Imperial Defence Sub-Committee of the Committee of Imperial Defence. *Interim Report*, June 12, 1923. Accessed August 5, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-160.pdf>.

Office of the Lord Privy Seal. *Sectional Steel Shelters Report: Upon the Investigations of Protection Afforded*, July 1939. Accessed September 18, 2018, [https://archive.org/details/Anderson\\_shelter](https://archive.org/details/Anderson_shelter).

*Peace Plan of the German Government*, Secretary of State for Foreign Affairs, March 31, 1936. Accessed August 8, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-261.pdf>.

*Plan for Further Expansion of the First Line Strength of the Royal Air Force*, Secretary of State for Air, January 14, 1937. Accessed August 8, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-267.pdf>.

*Pledges Given As Regards Parity with the German Air Force*, Secretary of State for Air, January 22, 1937. Accessed August 8, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-267.pdf>.

*Progress in Defence Requirements*, Minister for the Co-ordination of Defence, February 1, 1937. Accessed August 8, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-267.pdf>.

*Proposed European Convention Against Air Bombardment*, May 14, 1934. Accessed August 8, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-249.pdf>.

*Report of Committee on Evacuation*, Presented by Secretary of State for the Home Department, July 1938, Accessed September 17, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-279.pdf>

*Report of the Warren Fisher Committee on Air Raid Precautions Services*, July 3, 1937. Accessed May 31, 2020 <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-270.pdf>.

Shelter from Air Attack, 1939. The National Archives, Kew, Item MH 79/178.

*Spain*, Secretary of State for Foreign Affairs, January 8, 1937. Accessed August 8, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-267.pdf>.

*Statement Relating to Defence*, Presented by the Prime Minister to Parliament, March 14, 1935. Accessed August 8, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-253.pdf>.

*Statement Relating to Defence*, Presented by the Prime Minister to Parliament, March 3, 1936. Accessed August 8, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-260.pdf>.

*The Crisis in Europe*, February 28, 1933. Accessed August 8, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-239.pdf>.

*The Development of Air Control in Iraq*. Secretary of State for Air, October 1922. Accessed May 31, 2020, [http://www.nationalarchives.gov.uk/pathways/firstworldwar/aftermath/p\\_iraq.htm](http://www.nationalarchives.gov.uk/pathways/firstworldwar/aftermath/p_iraq.htm).

*The Disarmament Conference – Policy of the United Kingdom Delegation*, Secretary of State for Foreign Affairs, May 30, 1933. Accessed August 8, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-241.pdf>.

- The Disarmament Crisis*, Foreign Office, October 17, 1932. Accessed August 8, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-233.pdf>.
- The Foreign Policy of the Present German Government*, May 16, 1933. Accessed August 8, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-241.pdf>.
- The Future of Germany*, April 9, 1934. Accessed August 8, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-248.pdf>.
- The Future of the Home Defence Scheme and the Royal Air Force Programme for 1934*, October 24, 1933. Accessed August 5, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-243.pdf>.
- The German Air Programme and Its Bearing on British Air Strength*, Secretary of State for Air, April 15, 1935. Accessed August 8, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-254.pdf>.
- The German Danger*, January 17, 1936, Accessed August 5, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-259.pdf>.
- The Military Situation in Germany*, December 19, 1928, Accessed August 5, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-199.pdf>.
- The Separate Existence of the Royal Air Force and the Air Ministry Scheme of Expansion for Home Defence*, Memorandum by the Secretary of State for Air, July 5, 1923, Accessed August 5, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-161.pdf>.
- Use of Tube Stations During Air Raids and Improvement of Shelter Position in London*, 1940. The National Archives, Kew, Item HO 186/321.
- Warden's Services: Shelter wardens, 1939-1943*. The National Archives, Kew, Item HO 186/1104.
- Withdrawal of Germany From the Disarmament Conference*, Secretary of State for Foreign Affairs, October 17, 1933. Accessed August 5, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-243.pdf>.

## **Laws/Regulations**

- Civil Defence Act of 1939. Accessed September 18, 2018, [http://www.legislation.gov.uk/ukpga/1939/31/pdfs/ukpga\\_19390031\\_en.pdf](http://www.legislation.gov.uk/ukpga/1939/31/pdfs/ukpga_19390031_en.pdf).

*Defence Bill and Regulations*, Cabinet Committee, July 21, 1939. Accessed September 27, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-24-288.pdf>.

Defence Regulation 23 AB: Public Shelter Rules 1940-1941. The National Archives, Kew, Item HO 186/549.

*Fire Brigades Bill*, Joint Memorandum By the Home Secretary and the Secretary of State for Scotland, Samuel Hoare, Walter Elliot, October 11, 1937, 2-3, [cab-24-271.pdf \(nationalarchives.gov.uk\)](http://nationalarchives.gov.uk/cab-24-271.pdf).

### **Parliament Debates**

House of Commons. *Debate on the Address*, November 28, 1934. Accessed July 24, 2020, [https://api.parliament.uk/historic-hansard/commons/1934/nov/28/debate-on-the-address#S5CV0295P0\\_19341128\\_HOC\\_213](https://api.parliament.uk/historic-hansard/commons/1934/nov/28/debate-on-the-address#S5CV0295P0_19341128_HOC_213).

House of Commons. *International Affairs*, November 10, 1932. Accessed October 22, 2020, [https://api.parliament.uk/historic-hansard/commons/1932/nov/10/international-affairs#S5CV0270P0\\_19321110\\_HOC\\_284](https://api.parliament.uk/historic-hansard/commons/1932/nov/10/international-affairs#S5CV0270P0_19321110_HOC_284).

House of Commons. *Oral Answers to Questions — Civil Defence. — in the House of Commons*, January 25, 1940. Accessed September 18, 2018, <https://www.theyworkforyou.com/debates/?id=1940-01-25a.758.1>.

House of Commons. *Shelter Policy*. April 20, 1939 (HC Deb 20 April 1939 vol 346 cc471-6) Accessed September 18, 2018, <http://hansard.millbanksystems.com/commons/1939/apr/20/shelter-policy>.

### **Supply and Production Reports**

Supply and Production. *Civil Defence Report (No. 1), Reported by the Minister of Home Security, for September 1939*, John Anderson, October 3, 1939. Accessed February 2, 2021, [Record Type: Memorandum Former Reference: WP \(R\) \(39\) 110 Title: Supply... | The National Archives](#).

Supply and Production. *Civil Defence Report (No. 2), Reported by the Minister of Home Security, for October*, John Anderson. Accessed February 2, 2021, [Record Type: Memorandum Former Reference: WP \(R\) \(39\) 72 Title: Supply and... | The National Archives](#).

Supply and Production. *Civil Defence Report (No. 3), Report by the Minister of Home Security for November 1939*, John Anderson, December 7, 1939. Accessed February 2, 2021, [Record Type: Memorandum Former Reference: WP \(R\) \(39\) 110 Title: Supply... | The National Archives.](#)

Supply and Production. *Civil Defence Report (No. 4), Report by the Minister of Home Security for December 1939*, John Anderson, January 9, 1940. Accessed February 2, 2021, [Record Type: Memorandum Former Reference: WP \(R\) \(40\) 14 Title: Supply and... | The National Archives.](#)

Supply and Production. *Civil Defence Report (No. 5), Report by the Minister of Home Security for February 1940, March 8, 1940*, John Anderson, January 12, 1940. Accessed February 2, 2021, [Record Type: Memorandum Former Reference: WP \(R\) \(40\) 54 Title: Supply and... | The National Archives.](#)

Supply and Production, *Civil Defence Report (No. 6), Report by the Minister of Home Security for February 1940, March 8, 1940*, John Anderson. Accessed February 2, 2021, [Record Type: Memorandum Former Reference: WP \(R\) \(40\) 85 Title: Supply and... | The National Archives.](#)

#### **Weekly Resumes (1940-1941)**

War Cabinet, *Weekly Resume (No. 54) of the Naval, Military and Air Situation from 12 noon September 4<sup>th</sup> to 12 noon September 12, 1940*, September 20, 1940. Accessed December 17, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-66-12.pdf>.

War Cabinet, *Weekly Resume (No. 55) of the Naval, Military and Air Situation from 12 noon September 12<sup>th</sup> to 12 noon September 19, 1940*, September 20, 1940. Accessed December 17, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-66-12.pdf>.

War Cabinet, *Weekly Resume (No. 56) of the NAVAL, MILITARY AND AIR SITUATION from 12 noon September 19<sup>th</sup> to 12 noon September 26<sup>th</sup>, 1940*, September 27, 1940. Accessed December 17, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-66-12.pdf>

War Cabinet, *Weekly Resume (No. 57) of the NAVAL, MILITARY AND AIR -SITUATION from 12 noon September 26<sup>th</sup> to 12 noon October 3<sup>rd</sup>, 1940*, October 4, 1940. Accessed December 17, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-66-12.pdf>.

War Cabinet, *Weekly Resume (No. 58) of the NAVAL, MILITARY AND AIR SITUATION from 12 noon October 3<sup>rd</sup> to 12 noon October 10<sup>th</sup>, 1940*. Accessed December 17, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-66-12.pdf>.



- War Cabinet, *Weekly Resume (No. 59): Naval, Military and Air Situation from 12 noon October 10<sup>th</sup> to 12 noon October 17, 1940*, October 18, 1940. Accessed December 1, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-66-13.pdf>.
- War Cabinet, *Weekly Resume (No. 60) of the Naval, Military and Air Situation from 12 noon October 17<sup>th</sup> to 12 noon October 24, 1940*, October 24, 1940. Accessed December 17, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-66-13.pdf>.
- War Cabinet, *Weekly Resume (No. 61) of the Naval, Military and Air Situation from 12 noon October 24<sup>th</sup> to 12 noon October 31, 1940*, October 31, 1940. Accessed December 17, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-66-13.pdf>.
- War Cabinet, *Weekly Resume (No. 62) of the Naval, Military and Air Situation from 12 noon October 31<sup>st</sup> to 12 noon November 7, 1940*, November 7, 1940. Accessed December 17, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-66-13.pdf>.
- War Cabinet, *Weekly Resume (No. 63) of the NAVAL, MILITARY AND AIR SITUATION from 12 noon November 7<sup>th</sup> to 12 noon November 14<sup>th</sup>, 1940*, November 14, 1940. Accessed December 17, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-66-13.pdf>.
- War Cabinet, *Weekly Resume (No. 64) of the Naval, Military and Air Situation from 12 noon November 14<sup>th</sup> to 12 noon November 21<sup>st</sup>, 1940*, November 21, 1940. Accessed December 17, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-66-13.pdf>.
- War Cabinet, *Weekly Resume (No. 65) of the NAVAL, MILITARY AND AIR SITUATION from 12 noon November 21<sup>st</sup> to 12 noon November 28<sup>th</sup>, 1940*, November 28, 1940. Accessed December 17, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-66-13.pdf>.
- War Cabinet, *Weekly Resume (No. 66) of the NAVAL, MILITARY AND AIR SITUATION from 12 noon November 28<sup>th</sup> to 12 noon December 5<sup>th</sup>, 1940*, December 5, 1940. Accessed February 6, 2021, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-66-14.pdf>.
- War Cabinet, *Weekly Resume (No. 67) of the NAVAL, MILITARY AND AIR SITUATION from 12 noon December 5<sup>th</sup> to 12 noon December 12<sup>th</sup>, 1940*, December 12, 1940. Accessed February 6, 2021, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-66-14.pdf>.
- War Cabinet, *Weekly Resume (No. 68) of the NAVAL, MILITARY AND AIR SITUATION from 12 noon December 12<sup>th</sup> to 12 noon December 19<sup>th</sup>, 1940*, December 19, 1940. Accessed February 6, 2021, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-66-14.pdf>.



- War Cabinet, *Weekly Resume (No. 69) of the NAVAL, MILITARY AND AIR SITUATION from 12 noon December 19th to 12 noon December 26th, 1940*, December 26, 1940. Accessed February 6, 2021, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-66-14.pdf>.
- War Cabinet, *Weekly Resume (No. 70) of the NAVAL, MILITARY AND AIR SITUATION from 12 noon December 26th, 1940, to 12 noon January 2nd, 1941*, January 2, 1941. Accessed February 6, 2021, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-66-14.pdf>.
- War Cabinet, *Weekly Resume (No. 71) of the NAVAL, MILITARY AND AIR SITUATION from 12 noon January 2nd, to 12 noon January 9th, 1941*, January 9, 1941. Accessed February 6, 2021, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-66-14.pdf>.
- War Cabinet, *Weekly Resume (No. 72) of the NAVAL, MILITARY AND AIR SITUATION from 12 noon January 9th, to 12 noon January 16<sup>th</sup>, 1941*, January 16, 1941. Accessed February 6, 2021, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-66-14.pdf>.
- War Cabinet, *Weekly Resume (No. 73) of the NAVAL, MILITARY AND AIR SITUATION from 12 noon January 16th, to 12 noon January 23rd, 1941*, January 22, 1941. Accessed February 6, 2021, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-66-14.pdf>.
- War Cabinet, *Weekly Resume (No. 74), NAVAL, MILITARY AND AIR SITUATION from 12 noon January 23rd, to 12 noon January 30th, 1941*, January 30, 1941. Accessed February 6, 2021, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-66-14.pdf>.
- War Cabinet, *Weekly Resume (No. 75), NAVAL, MILITARY AND AIR SITUATION from 12 noon January 30th, to 12 noon February 6th, 1941*, February 6, 1941. Accessed February 6, 2021, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-66-14.pdf>.
- War Cabinet, *Weekly Resume (No. 76): Naval, Military and Air Situation from 12 noon February 6th, to 12 noon February 13th, 1941*, February 13, 1941. Accessed December 1, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-66-15.pdf>.
- War Cabinet, *Weekly Resume (No. 77): Naval, Military and Air Situation from 12 noon February 13th, to 12 noon February 20th, 1941*. February 20. Accessed December 1, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-66-15.pdf>.
- War Cabinet, *Weekly Resume (No. 78): Naval, Military and Air Situation from 12 noon February 20<sup>th</sup> to 12 noon February 27, 1941*. February 27, 1941. Accessed December 1, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-66-15.pdf>.

War Cabinet, *Weekly Resume (No. 79): Naval, Military and Air Situation from 12 noon February 27<sup>th</sup> to 12 noon March 6<sup>th</sup>, 1941*. March 6, 1941. Accessed December 1, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-66-15.pdf>.

War Cabinet, *Weekly Resume (No. 80): Naval, Military and Air Situation from 12 noon March 6<sup>th</sup> to 12 noon March 13<sup>th</sup>, 1941*. March 13, 1941. Accessed December 1, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-66-15.pdf>.

War Cabinet, *Weekly Resume (No. 81): Naval, Military and Air Situation from 12 noon March 13<sup>th</sup> to 12 noon March 20<sup>th</sup>, 1941*. March 20, 1941. Accessed December 1, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-66-15.pdf>.

War Cabinet, *Weekly Resume (No. 82): Naval, Military and Air Situation from 12 noon March 20<sup>th</sup> to 12 noon March 27<sup>th</sup>, 1941*. March 27, 1941. Accessed December 1, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-66-15.pdf>.

War Cabinet, *Weekly Resume (No. 83) of the Naval, Military and Air Situation from 12 noon March 27<sup>th</sup>, to 12 noon April 3<sup>rd</sup>, 1941*, April 3, 1941. Accessed December 17, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-66-16.pdf>.

War Cabinet, *Weekly Resume (No. 84) of the Naval, Military and Air Situation from 12 noon April 3<sup>rd</sup> to 12 noon April 10<sup>th</sup>, 1941*, April 10, 1941. Accessed December 17, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-66-16.pdf>.

War Cabinet, *Weekly Resume (No. 85) of the Naval, Military and Air Situation from 12 noon April 10<sup>th</sup>, to 12 noon April 17<sup>th</sup>, 1941*, April 17, 1941. Accessed December 17, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-66-16.pdf>.

War Cabinet, *Weekly Resume (No. 86) of the Naval, Military and Air Situation from 12 noon April 17<sup>th</sup>, to 12 noon April 24<sup>th</sup>, 1941*, April 24, 1941. Accessed December 17, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-66-16.pdf>.

War Cabinet, *Weekly Resume (No. 87) of the Naval, Military and Air Situation from 12 noon April 24<sup>th</sup>, to 12 noon May 1<sup>st</sup>, 1941*, May 1, 1941. Accessed December 17, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-66-16.pdf>.

War Cabinet, *Weekly Resume (No. 88) of the Naval, Military and Air Situation from 12 noon May 1<sup>st</sup>, to 12 noon May 8<sup>th</sup>, 1941*, May 8, 1941. Accessed December 17, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-66-16.pdf>.

War Cabinet, *Weekly Resume (No. 89) of the Naval, Military and Air Situation from 12 noon May 8<sup>th</sup>, to 12 noon May 15<sup>th</sup>, 1941*, May 15, 1941. Accessed December 17, 2020, <http://filestore.nationalarchives.gov.uk/pdfs/large/cab-66-16.pdf>.

## **Interviews/Opinion Polls**

Brockington, Kathleen. "Kathleen's story: Bombed out in the London Blitz." Time Witnesses. Transcribed from a tape-recorded conversation by Harvinder Jauhal. August 1994. Accessed September 19, 2018, <http://www.timewitnesses.org/english/blitz.html>.

Hinton, J., Thompson, P., Liddell, I. (1996). *British Institute of Public Opinion (Gallup) Polls, 1938-1946*. [data collection]. British Institute of Public Opinion, [original data producer(s)]. UK Data Service. SN: 3331. Accessed November 6, 2020, <https://beta.ukdataservice.ac.uk/datacatalogue/studies/study?id=3331#!/documentation>.

Mass Observation Online, Day Surveys, Diaries. Accessed November 13, 2020, <http://www.massobservation.amdigital.co.uk.ezpl.lib.umn.edu/>.

Mass Observation File Reports, 1938-1942. Accessed November 13, 2020, <http://www.massobservation.amdigital.co.uk.ezpl.lib.umn.edu/Documents/FileReports?page=2&returning=true>.

Imperial War Museum "Voices of The First World War: Zeppelins Over Britain," Accessed June 29, 2020, <https://www.iwm.org.uk/history/voices-of-the-first-world-war-zeppelins-over-britain>.

## **Newspapers**

*Belfast Telegraph, 1939*

*Birmingham Daily Gazette, 1940*

*Birmingham Mail, 1939*

*Daily Herald, 1932, 1936, 1940, 1941*

*Daily Mirror, 1937, 1940*

*Kensington Post, 1941*

*Lancashire Evening Post, 1939*

*London Evening Standard, 1934*

*Nottingham Evening Post, 1935*

*Radio Times*, 1939

*Reynolds Newspaper*, 1935

*Scotsman*, 1940

*Sphere*, 1940

*Times (London)*, 1924, 1930, 1933, 1935, 1936, 1939, 1940, 1941

*War Illustrated*, 1940, 1941

*Western Mail*, 1940

*West Middlesex Gazette*, 1939

*Wiltshire Times and Trowbridge Advertiser*, 1940

*Yorkshire Post and Leeds Intelligencer*, 1940

### **Speeches**

National Churchill Museum. "Every Man to His Post, 1940" Accessed December 18, 2020. <https://www.nationalchurchillmuseum.org/>.

### **Video**

British Council Film Collection. "War Comes to London" British Council (1940). Accessed September 27, 2018, <http://film.britishcouncil.org/british-council-film-collection>.

British Pathé, "Air Raid Precautions" (1938). Accessed September 27, 2018, <https://www.bing.com/videos/search?q=air+raid+precautions++great+britain&&view=detail&mid=7EB82C93F629FBBBF2617EB82C93F629FBBBF261&&FORM=VD RVRV>.

British Pathé, "Do the Job Well" (December 19, 1940). Accessed September 27, 2018, <https://www.britishpathe.com/video/do-the-job-well/query/air+raid>.

British Pathé, "Gas Mask Store" (September 22, 1938). Accessed December 10, 2020, [Gas Mask Store - British Pathé \(britishpathe.com\)](https://www.britishpathe.com/video/gas-mask-store).

British Pathé, "Gas Masks for Civilians" (January 14, 1937). Accessed December 10, 2020, [Gas Masks For Civilians - British Pathé \(britishpathe.com\)](https://www.britishpathe.com/video/gas-masks-for-civilians).

- British Pathé, “Get Under Cover” (January 1, 1940). Accessed September 27, 2018, <https://www.britishpathe.com/video/get-under-cover>.
- British Pathé, “How to Deal with an Incendiary Bomb,” (June 13, 1940). Accessed November 13, 2020, <https://www.britishpathe.com/video/VLVA8QVT5M3E014YK11KLCXLMMQFB-HOW-TO-DEAL-WITH-AN-INCENDIARY-BOMB/query/civil+defence>.
- British Pathé, “Shelter Trailer” (April 8, 1941). Accessed September 27, 2018, <https://www.britishpathe.com/video/shelter-trailer/query/air+raid>.
- British Pathé, “The Royal Tour” (April 25, 1940). Accessed November 14, 2020, <https://www.britishpathe.com/video/the-royal-tour-3/query/king+and+queen>.
- British Pathé, “What to Do in The Event of an Air Raid” (1940). Accessed November 13, 2020, <https://www.britishpathe.com/video/what-to-do-in-an-air-raid/query/air+raid>.
- British Pathé, “Your Home as An Air Raid Shelter” (July 10, 1940). Accessed September 27, 2018, <https://www.britishpathe.com/video/your-home-as-an-air-raid-shelter>.
- British Pathé, “Sir John Anderson Speaks On The Need For Air Raid Precautions” Gaumont British Newsreel, (March 30, 1939). Accessed November 13, 2020, <https://www.britishpathe.com/video/VLVA5B3X83XQE70E92TWK7FV9ELY3-SIR-JOHN-ANDERSON-SPEAKS-ON-THE-NEED-FOR-AIR-RAID-PRECAUTIONS/query/wildcard>.
- British Movietone. “70/-Air Raid Shelter” (1940s). Accessed September 27, 2018, <https://www.bing.com/videos/search?q=British+Movietone+70%2fair+raid&&view=detail&mid=54899374FBDD37D9180254899374FBDD37D91802&&FORM=VRD GAR>.
- British Movietone News. “Interview with Sir Samuel Hoare,” (March 24, 1938). *AP Archive*, Accessed November 13, 2020, [http://www.aparchive.com/metadata/Interview-with-Sir-Samuel-Hoare/5793f97576174ccdbe9f945d00ab0cc6?query=air+raid+precautions&current=3&orderBy=Relevance&hits=3&referrer=search&search=%2fsearch%2ffilter%3fquery%3dair%2520raid%2520precautions%26from%3d1%26orderBy%3dRelevance%26allFilters%3dBritish%2520Movietone%257C43894%253APartner%252C1930%253ADecade%252CEducation%253ASubject%26ptype%3dIncludedProducts%26\\_%3d1604679529299&allFilters=British%2520Movietone%7c43894%3aPartner%2c1930%3aDecade%2cEducation%3aSubject&productType=IncludedProducts&page=1&b=ab0cc6](http://www.aparchive.com/metadata/Interview-with-Sir-Samuel-Hoare/5793f97576174ccdbe9f945d00ab0cc6?query=air+raid+precautions&current=3&orderBy=Relevance&hits=3&referrer=search&search=%2fsearch%2ffilter%3fquery%3dair%2520raid%2520precautions%26from%3d1%26orderBy%3dRelevance%26allFilters%3dBritish%2520Movietone%257C43894%253APartner%252C1930%253ADecade%252CEducation%253ASubject%26ptype%3dIncludedProducts%26_%3d1604679529299&allFilters=British%2520Movietone%7c43894%3aPartner%2c1930%3aDecade%2cEducation%3aSubject&productType=IncludedProducts&page=1&b=ab0cc6).

King George IV, "Address to the People," September 23, 1940, Accessed December 7, 2020, [HM King George VI - HM's Encouraging Address to the People - 23 September 1940 - YouTube](#).

Imperial War Museum Film, Accessed September 9, 2018  
[https://film.iwmcollections.org.uk/?\\_ga=2.118839937.903982490.1536507488-728509597.1535920241](https://film.iwmcollections.org.uk/?_ga=2.118839937.903982490.1536507488-728509597.1535920241).

### **Websites**

"Air Raid Precautions Notice." *People's Collection Wales*, Accessed November 6, 2020, <https://www.peoplescollection.wales/items/44480>.

"The British World War Two Home Front in ARP Cigarette Card Pictures: About Cigarette Cards and Cigarette Card Albums" 1900s.org.uk, Accessed November 11, 2020, <https://www.1900s.org.uk/1940s-homefront-images.htm>.

"News – Britain Begins to Prepare for War," BBC, September 26, 1938, *BBC Archive*, Accessed November 13, 2020, <https://www.bbc.co.uk/archive/news-britain-begins-to-prepare-for-war/zdvky9q>.

Collage, London Picture Archive, Accessed February 24, 2019, <https://collage.cityoflondon.gov.uk/>.

Commonwealth War Graves Commission, Accessed September 19, 2018, <https://www.cwgc.org/>.

George Arents Collection, "Cigarette Cards: 1939-1945". The New York Public Library. Accessed September 23, 2018, <https://digitalcollections.nypl.org/collections/cigarette-cards#/?tab=navigation>.

Imperial War Museum Photo Collections, Accessed May 25, 2020, <https://www.iwm.org.uk/collections/photographs>.

World Digital Library, "Disarmament Conference", Geneva 1933, Accessed July 29, 2020 <https://www.wdl.org/en/item/11592/>.

London Metropolitan Archives. Accessed February 23, 2019, [https://search.lma.gov.uk/scripts/mwimain.dll?logon&application=UNION\\_VIEW&language=144&file=\[WWW\\_LMA\]home.html](https://search.lma.gov.uk/scripts/mwimain.dll?logon&application=UNION_VIEW&language=144&file=[WWW_LMA]home.html).

## Secondary Sources

### Books

- Adamson, Ian. *Bombs on Belfast, The Blitz 1941* Belfast: Pretani Press, 1984.
- Alton, Douglas. *Birmingham At War, A Pictorial Account*. Birmingham: Birmingham Post and Mail, 1982.
- Barton, Brian. *The Belfast Blitz: The City in the War Years*. Belfast: Ulster Historical Foundation, 2015.
- Bell, Amy Helen. *London Was Ours: Diaries and Memoirs of the London Blitz*. London: I.B. Tauris & Co Ltd., 2008.
- Bialer, Uri. *The Shadow of the Bomber: The Fear of Air Attack and British Politics, 1932-1939*. London: Royal Historical Society, 1980.
- Blackstone, Geoffrey Vaughn, *A History of the British Fire Service*. Routledge & Kegan Paul: 1957
- Brayley, Martin. *The British Home Front 1939–45*. London: Bloomsbury Publishing, Jan 1, 2006.
- Brown, Mike. *Put that light out! Britain's Civil Defence Services at War 1939-1945*. Stroud: Sutton, 1999.
- Christopher, John, ed. *Air Raids What You Must Know What You Must Do! The Wartime Guide to Surviving the Blitz*. Boston: Gloucestershire: Amberley Publishing, 2014.
- Calder, Angus. *The Myth of the Blitz*. London: Cape, 1991.
- Calder, Angus. *The People's War: Britain 1939-1945*. New York: Pantheon Books, 1969.
- Cherry, Gordon. *Birmingham: A Study in Geography, History, and Planning* Milton, Australia: John Wiley & Sons Australia LTD, 1994.
- Churchill, Winston. *The Second World War: Volume II, Their Finest Hour*. Boston: Houghton Mifflin Company, 1949.
- Clodfelter, Michael. *Warfare and Armed Conflict: A Statistical Reference of Casualty and Other Figures, 1618–1991*. Jefferson, North Carolina: McFarland and Company Publishers, 2017.

- Cole, Christopher; Cheeseman, E. F. *The Air Defence of Britain, 1914–1918*. London: Putnam, 1984.
- Collier, Basil. *Defence of the United Kingdom: History of the Second World War: United Kingdom Military Series: Official Campaign History, 1957*. Kindle addition, United Kingdom: Naval & Military Press, 2004.
- Curran, James, Anthony Smith, and Pauline Wingate. *Impacts and Influences : Media Power in the Twentieth Century*, Kindle addition, United Kingdom: Hoboken: Taylor and Francis, 2013.
- Connelly, Mark. *We Can Take It!* Hoboken: Routledge, 2014. eBook Academic Collection (EBSCOhost), EBSCOhost. Accessed September 9, 2017.
- Davis, Richard G. *Bombing the European Axis Powers. A Historical Digest of the Combined Bomber Offensive 1939-1945*. (Maxwell Air Force Base, Alabama: Air University Press: 2006. (archived 5 March 2009) Accessed October 21, 2018, [https://web.archive.org/web/20090305023036/http://aupress.au.af.mil/Books/Davis/Davis\\_B99.pdf](https://web.archive.org/web/20090305023036/http://aupress.au.af.mil/Books/Davis/Davis_B99.pdf)
- Doyle, Peter. *ARP and Civil Defence in the Second World War*. Oxford: Shire Publications, 2011.
- Ellis, John. *World War II: A Statistical Survey. The Essential Facts & Figures for All the Combatants*. New York: Facts on File, 1993.
- Farrington, Karen. *The Blitzed City: The Destruction of Coventry, 1940*. London: Aurum Press, 2015.
- FitzGibbon, Constantine. *The Winter of the Bombs: The Story of the Blitz of London*. New York: W.W. Norton & Company, Inc., 1957. Accessed January 30, 2021, <https://ia902704.us.archive.org/13/items/winterofthebombs010956mbp/winterofthebombs010956mbp.pdf>.
- Gardiner, Juliet. *Blitz: The British Under Attack*. London: HarperCollins Publishers, 2011.
- Gaskin, Margaret. *Blitz: The Story of December 29, 1940*. Orlando: Harcourt, Inc., 2005.
- Geraghty, Tom and Whitehead, Trevor. *The Dublin Fire Brigade*. Dublin: Four Courts Press, 2004.
- Graystone, Philip *The Blitz on Hull (1940–45)*. Great Britain: Lampada Press, 1991.



- Grayzel, Susan R. *At Home and Under Fire: Air Raids and Culture in Britain from the Great War to the Blitz*. Cambridge: Cambridge University Press, 2014.
- Harrison, Tom. *Living through the Blitz*. London: Collins, 1976.
- Ingersoll, Ralph. *Report on England, November 1940*. New York: Simon and Schuster, 1940. Accessed January 20, 2021, <https://babel.hathitrust.org/cgi/pt?id=mdp.39015027338212;view=1up;seq=9>.
- Jenkins, P. *Battle over Portsmouth: A City at War in 1940*. Midhurst: Middleton Press, 1986.
- Kelly, John. *Never Surrender: Winston Churchill and Britain's Decision to Fight Nazi Germany in the Fateful Summer of 1940*. New York: Scribner, 2015.
- Kemp, Anthony. *Southampton at War*. Southampton: Ensign Publications, 1989.
- Kennett, Lee B. *A History of Strategic Bombing: From the First Hot-Air Balloon to Hiroshima and Nagasaki*. New York: Scribner, 1982.
- Levine, Joshua. *Forgotten Voices of the Blitz and the Battle of Britain*. UK: Ebury Press, 2006.
- Longmate, Norman, editor. *The Homefront: An Anthology of Personal Experience, 1938-1945*. London: Chatto & Windus, 1981.
- Longmate, Norman. *Air raid: The Bombing of Coventry, 1940*. New York: D. McKay, 1978.
- Mackay, Robert. *Half the Battle Civilian Morale in Britain During the Second World War*. Manchester: Manchester University Press, 2003.
- Macleod, John. *River of Fire: The Clydebank Blitz*. Edinburgh: Birlinn Ltd, 2010.
- Ministry of Home Security. *Front Line 1940-41: The Official Story of The Civil Defense of Britain*. London: HMSO, 1942.
- Morgan, Dennis. *Cardiff – a City at War*. UK: Dennis Morgan, 1998.
- Mosely, Leonard. *London Under Fire, 1939-45*. London: Pan Books: 1972.

- O'Brien, T.H. *History of the Second World War: Civil Defence*. London: HMSO, 1955. Accessed January 30, 2021, <https://ia800603.us.archive.org/21/items/HistoryOfTheSecondWorldWarCivilSeriesCivilDefence/obrien-civil-defence.pdf>.
- Overy, Richard. *The Bombing War Europe 1939-1945*. London: Penguin, 2014.
- Price, Alfred. *Blitz on Britain 1939-45*. 2<sup>nd</sup> ed. (1977) U.K.: Sutton Publishing, 2000.
- Ponting, Clive. *1940: Myth and Reality*. Chicago; Ivan R. Dee, 1993.
- Proctor, Tammy M. *Civilians in a World at War, 1914-1918*. New York: NYU Press, 2010. eBook Academic Collection (EBSCOhost), EBSCOhost (accessed September 16, 2018).
- Ray, John Philip. *The Night Blitz 1940-1941*. Cassell Military, 1996.
- Jones, H.A. *The War in the Air: The Part Played in the Great War by the Royal AirForce Vol. 5*. Oxford: University Press, 1935. Accessed July 8, 2020, <https://ia801604.us.archive.org/29/items/warinairbeingsto05rale/warinairbeingsto05rale.pdf>.
- Simons, Geoff. *Iraq: from Sumer to Saddam*. New York: St. Martin's Press, 1994.
- Smith, Malcom. *Britain and 1940: History, Myth and Popular Memory*. Hoboken: Taylor and Francis, 2014.
- Spaight, J.M. *Bombing Vindicated*. London: Geoffrey Bles, 1944. Accessed July 6, 2020, <https://archive.org/details/aircraftinwa00spai/mode/2up>.
- Stansky, Peter. *The First day of the Blitz*. Carlton North, Vic: Scribe, 2007.
- Taylor, A.J.P. *English History: 1914-1945*. Great Britain: Oxford University Press, 1965.
- Taylor, Frederick. *Coventry; 14 November 1940*. London: Bloomsbury Publishing PLC, 2015.
- Titmuss, Richard. *History of The Second World War Problems Of Social Policy*. London: HMSO, 1950. Accessed January 30, 2021 <http://www.ibiblio.org/hyperwar/UN/UK/UK-Civil-Social/UK-Civil-Social-25.html>.

- van Leeuwen, Bas and Jieli van Leeuwen-Li, "Education since 1820", in Jan Luiten van Zanden, et al. (eds.), *How Was Life?: Global Well-Being since 1820*, Paris: OECD Publishing, 2014. Accessed November 12, 2020, [https://read.oecd-ilibrary.org/economics/how-was-life/education-since-1820\\_9789264214262-9-en#page15](https://read.oecd-ilibrary.org/economics/how-was-life/education-since-1820_9789264214262-9-en#page15).
- Vidal Manzanares, César. *La destrucción de Guernica: un balance sesenta años después*. Chapter 9 Translated by Peter Miller. Madrid: Espasa, 1997. Accessed September 23, 2020, <http://www.buber.net/Basque/History/guernica-ix.html>.
- Wallington, Neil. *Firemen at War: The Work of London's Fire-fighters in the Second World War*. Huddersfield UK: Jeremy Milles Publishing, 2005.
- Ward, Laurence *The London County Council: Bomb Damage Maps 1939-1945*. London: Thames and Hudson LTD, 2015.
- Whiting, Charles. *Britain Under Fire: The Bombing of Britain's cities, 1940-1945*. London: Century, 1986.
- Whittington-Egan, Richard. *The Great Liverpool Blitz*. United Kingdom: The Gallery Press, 1987.
- Williams, Kevin. *Read All About It!: A History of the British Newspaper*. London: Routledge, 2010. Accessed November 13, 2020, <http://search.ebscohost.com/unk.idm.oclc.org/login.aspx?direct=true&db=e000xna&AN=289819&site=eds-live>.
- Ziegler, Phillip. *London at War 1939-1945*. London: Sinclair-Stevenson, 1995.
- Zeiler, Thomas W. *Annihilation: A Global Military History of World War II*. New York: Oxford University Press, 2011.
- Journal Articles**
- Bell, Amy. "Landscapes of Fear: Wartime London, 1939-1945." *Journal of British Studies* 48, no. 1 (January 2009): 153-175. Academic Search Premier, EBSCOhost. Accessed September 24, 2017.
- Bialer, Uri. "Elite Opinion and Defence Policy: Air Power Advocacy and British Rearmament during the 1930s." *British Journal of International Studies* 6, no 1 (April 1980): 32-51. Accessed July 21, 2020, <http://www.jstor.com/stable/20096876>.

- Bialer, Uri. "Humanization of Air Warfare in British Foreign Policy on the Eve of the Second World War." *Journal of Contemporary History* 13, no 1 (January 1978): 79-96. Accessed July 21, 2020, <http://www.jstor.com/stable/260094>.
- Chapman, James. "Re-presenting war." *European Journal of Cultural Studies* 10, no. 1 (February 2007): 13. Complementary Index, EBSCOhost. Accessed September 24, 2017.
- Corum, James S. "The Luftwaffe's Campaigns in Poland and the West 1939–1940: A Case Study of Handling Innovation in Wartime". *Security and Defence Quarterly* (2013): 158–189. doi:[10.5604/23008741.1191778](https://doi.org/10.5604/23008741.1191778). Accessed January 19, 2021, [Security and Defence Quarterly - Articles by James S. Corum](https://www.tandfonline.com/doi/full/10.1080/13619460600600763).
- Dallek, Matthew. "London Burning: The Blitz of England and the Origins of "Home Defense" in Twentieth-Century America." *Journal of Policy History* 27, no. 2 (April 2015): 197-219. Academic Search Premier, EBSCOhost.
- Ewen, Shane. "Preparing the British Fire Service for War: Local Government, Nationalisation and Evolutionary Reform, 1935–41," *Contemporary British History*, 20:2, (2006): 209-231, DOI: [10.1080/13619460600600763](https://doi.org/10.1080/13619460600600763). Accessed September 2, 2018, <https://www.tandfonline.com/doi/pdf/10.1080/13619460600600763?needAccess=true>.
- Field, Geoffrey. "Nights Underground in Darkest London: The Blitz, 1940-1941." *International Labor and Working Class History*, No. 62, *Class and Catastrophe: September 11 and Other Working Class Disasters* (Fall, 2002), pp. 11-49. Accessed October 2, 2017, <http://www.jstor.org/stable/27672803>.
- Garon, Sheldon. "Defending Civilians against Aerial Bombardment: A Comparative/Transnational History of Japanese, German, and British Home Fronts, 1918-1945" *Asia-Pacific Journal: Japan Focus*, Vol. 14, Issue 23, (December 1, 2016), pp. 1-19. Accessed February 18, 2019, <https://unk.idm.oclc.org/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=poh&AN=119933628&site=eds-live>, <https://apjff.org/2016/23/Garon.html>.
- Holman, Brett. "The Air Panic of 1935: British Press Opinion between Disarmament and Rearmament." *Journal of Contemporary History* 46, no 2 (April 2011): 288-307. Accessed July 21, 2020, <http://www.jstor.com/stable/41305313>.
- Meisel, Joseph S. "Air Raid Shelter Policy and its Critics in Britain before the Second World War", *Twentieth Century British History*, Volume 5, Issue 3, (January 1994): 300–319. Accessed February 7, 2021, <https://doi.org/10.1093/tcbh/5.3.300>.

Robb, Linsey “‘The Front Line’: Firefighting in British Culture, 1939–1945.” *Contemporary British History*, 29:2, (2015): 179-198, DOI: [10.1080/13619462.2014.969715](https://doi.org/10.1080/13619462.2014.969715). Accessed September 2, 2018, <https://www-tandfonline-com.unk.idm.oclc.org/doi/pdf/10.1080/13619462.2014.969715?needAccess=true>.

Yelton, David K. "British Public Opinion, the Home Guard, and the Defense of Great Britain, 1940-1944." *The Journal of Military History* 58, no. 3 (1994): 461-80. Accessed October 2, 2017, [www.http://jstor.org/stable/2944135](http://jstor.org/stable/2944135).

### **Papers**

Butchart, Ed. “Unemployment and Non-Employment in Interwar Britain.” University of Oxford, Discussion Papers in Economic and Social History, Number 16 (May 1997). Accessed October 22, 2020, <https://www.nuffield.ox.ac.uk/economics/history/paper16/16www.pdf>.

### **Unpublished Sources**

Allwright, Lucy (2011) *The War on London: Defending the City from the War in the Air 1932-1943*. PhD thesis, University of Warwick. Accessed September 18, 2018, <http://webcat.warwick.ac.uk/record=b2581807~S1>.

### **Video**

Clark, Isabelle and Costelle, Daniel. *Apocalypse la 1ère Guerre mondiale*. 2014; Paris: CC&C and ECPAD. 2020. Direct TV Channel 287.

### **Websites**

Adams, Eric W. (Islington Town Clerk and ARP Controller). “The Blitz Period in Islington (1940-1941),” Friends of Islington Museum, September 2, 2020. Accessed January 20, 2021 [The Blitz Period in Islington \(1940-41\) – Friends of Islington Museum \(friendsofim.com\)](http://www.friendsofism.com).

“A History of the Ministry of Information, 1939-46: The Ministry at a Glance,” MOI Digital, Accessed September 8, 2018, <http://www.moidigital.ac.uk/blog/ministry-glance/>.

“Air Raid Shelter Protection,” Royal Air Force Museum, 2016. Accessed September 12, 2017, <https://www.rafmuseum.org.uk/research/online-exhibitions/history-of-the-battle-of-britain/air-raid-shelter-protection.aspx>.

- “Air Raid Shelters: A short history of British air-raid shelters WW1 and WW2,” Military History Monthly, October 1, 2010. Accessed July 8, 2020, <https://www.military-history.org/articles/air-raid-shelters.htm>.
- “A Ministry Worth Exploring,” MOI Digital: A History of the Ministry of Information, 1939-46. Accessed September 8, 2018, <http://www.moidigital.ac.uk/blog/ministry-worth-exploring/>.
- “A Private History of a Public City: London Blitz,” A London Inheritance. Accessed September 23, 2017, <http://alondoninheritance.com/tag/london-blitz/>.
- “A Short History of British Television,” National Science and Media Museum, 2011. Accessed November 4, 2020, <https://blog.scienceandmediamuseum.org.uk/history-of-british-television-timeline>.
- Barrow, Mandy, *Project Britain: British Life and Culture*, 2013, Project Britain. Accessed January 11, 2021 [Average hours of daylight in Britain through out the year. \(projectbritain.com\)](http://projectbritain.com).
- “Blitz WW2 – The Battle of London,” Military History Monthly, October 1, 2010. Accessed September 15, 2017, <https://www.military-history.org/articles/world-war-2/blitz-ww2.htm>.
- "Bomber." Encyclopedia Britannica. Accessed January 22, 2021, <https://www.britannica.com/technology/bomber-aircraft>.
- “Bombing, States and Peoples In Western Europe 1940-1945 The Project Exhibition Comparative Overview,” University of Exeter. Accessed September 5, 2018, [http://humanities.exeter.ac.uk/media/universityofexeter/collegeofhumanities/history/researchcentres/centreforthestudyofwarstateandsociety/bombing/comparative\\_overview.pdf](http://humanities.exeter.ac.uk/media/universityofexeter/collegeofhumanities/history/researchcentres/centreforthestudyofwarstateandsociety/bombing/comparative_overview.pdf).
- Castle, Ian. “London, Bombing of, in 1914-1918-online.” International Encyclopedia of the First World War, ed. by Ute Daniel, Peter Gatrell, Oliver Janz, Heather Jones, Jennifer Keene, Alan Kramer, and Bill Nasson, issued by Freie Universität Berlin, Berlin 2016-04-14. DOI: [10.15463/ie1418.10889](https://doi.org/10.15463/ie1418.10889). Accessed November 6, 2017, [https://encyclopedia.1914-1918-online.net/article/london\\_bombing\\_of](https://encyclopedia.1914-1918-online.net/article/london_bombing_of).
- Cooper, Nick. “The Underground at War,” nickcooper.org, Last updated 2010. Accessed February 6, 2021, <http://www.nickcooper.org.uk/subterra/lu/tuaw.htm>.
- “Cinema Attendance UK,” Economics Help: Helping to Simplify Economics. Assessed October 28, 2017, <https://www.economicshelp.org/blog/6693/business/cinema-attendance-in-uk/>

- Edwards, Phil. "When emergency warnings were a guy with a sign hanging from his neck," Vox, March 27, 2015. Accessed July 25, 2020, <https://www.vox.com/2015/3/27/8301253/wwi-warning-signs>.
- Essex-Lopresti, Timed. "A Brief History of Civil Defense" Civil Defense Association, Derbyshire: Higham Press Ltd, 2005. Assessed October 28, 2017, <http://www.civildefenceassociation.org.uk/HistCDWebA4V7.pdf>.
- Feltus, Pamela. US Centennial of Flight Commission "Aerial Warfare and the Spanish Civil War" Internet Archive, Wayback Machine. Accessed September 16, 2018, [https://web.archive.org/web/20111014115539/http://www.centennialofflight.gov/essay/Air\\_Power/Spansh\\_CW/AP18.htm](https://web.archive.org/web/20111014115539/http://www.centennialofflight.gov/essay/Air_Power/Spansh_CW/AP18.htm).
- "Firefighters of the Second World War," London Fire Brigade, 2021. Accessed January 20, 2021 [Firefighters of the Second World War | London Fire Brigade \(london-fire.gov.uk\)](http://www.london-fire.gov.uk).
- Geekie, Peter. "The London Blitz - Terrifying five years of death and horror every day and night - could we cope with this today?," Hub Pages, March 26, 2017. Accessed January 20, 2020 [The London Blitz - Terrifying five years of death and horror every day and night - could we cope with this today? - HubPages](http://www.hubpages.com/hub/The-London-Blitz-Terrifying-five-years-of-death-and-horror-every-day-and-night-could-we-cope-with-this-today).
- Geoghegan, Tom. "Did the Blitz really unify Britain?" BBC, September 8, 2010. Accessed September 11, 2017, <http://www.bbc.com/news/magazine-11213968>.
- Gilbert, Adrian. "The Blitz." Encyclopædia Britannica. March 09, 2017. Accessed December 17, 2020, [www.britannica.com/event/the-Blitz](http://www.britannica.com/event/the-Blitz).
- Glancey, Johnathan. "Our Last Occupation: Gas, chemicals, bombs: Britain has used them all before in Iraq," The Guardian. April 19, 2003. Accessed, May 31, 2020, <https://www.theguardian.com/world/2003/apr/19/iraq.arts>.
- Goddard, Jane. "Before and after views show extent of destruction to Leicester street during 1940 Blitz," LeicestershireLive, July 1, 2021. Accessed November 23, 2020, ['Before' and 'after' views show extent of destruction to Leicester street during 1940 Blitz - Leicestershire Live \(leicesterm Mercury.co.uk\)](http://www.leicesterm Mercury.co.uk).
- Green, Walter G. ed. "Air Raid Precautions Organization," Electronic Encyclopaedia of Civil Defense and Emergency Management, September 9, 2003, University of Richmond School of Continuing Studies. Accessed January 19, 2021, <https://web.archive.org/web/20060627190249/http://www.richmond.edu/~wgreen/EC Dwarsaw.html>.



- Hanke, Heinz Marcus. "The 1923 Hague Rules of Air Warfare: A Contribution to the Development of International Law Protecting Civilians from Air Attack," International Review of the Red Cross. IRCC No 292 March 1993. Accessed, July 29, 2020 , <https://international-review.icrc.org/articles/1923-hague-rules-air-warfare-contribution-development-international-law-protecting>.
- Hickman, Kennedy. "Spanish Civil War: Bombing of Guernica," ThoughtCo. May 13, 2017. Accessed, July 25, 2020, <https://www.thoughtco.com/spanish-civil-war-bombing-of-guernica-2360536>.
- "History," St Clement Danes Church. Accessed May 26, 2020, <https://stclementdanesraf.org/history/>.
- "Hugh Montague Trenchard, 1st Viscount Trenchard," Encyclopædia Britannica, February 06, 2020. Accessed May 31, 2020, <https://www.britannica.com/biography/Hugh-Montague-Trenchard-1st-Viscount-Trenchard>.
- Institut d'Estadística de Catalunya. Catalonia: Idescat. Population Estimates. Source Spain: INE, 8/30/2017. Accessed 10/22/2017, <http://www.idescat.cat/pub/?id=aec&n=245&lang=en>.
- Jones, Edgar. "Air Raid Casualties in the First World War," Govt. UK, January 19, 2015. Accessed January 23, 2021, [Air-raid casualties in the First World War - History of government \(blog.gov.uk\)](http://www.blog.gov.uk/2015/01/19/air-raid-casualties-in-the-first-world-war/).
- Klein, Christopher. "London's World War I Zeppelin Terror: Before London was blitzed in World War II, massive German zeppelins rained bombs and terror upon the British capital in World War I," History.com, August 31, 2018. Accessed June 2, 2020, <https://www.history.com/news/londons-world-war-i-zeppelin-terror>.
- "League of Nations," Encyclopaedia Britannica, March 3, 2020. Accessed July 29, 2020, <https://www.britannica.com/topic/World-Disarmament-Conference>.
- LeClere, Matt. "Folkestone Air Raid: 100 years one town remembers Tontine Street disaster," Kent Online, May 24, 2017. Accessed July 25, 2020, <https://www.kentonline.co.uk/folkestone/news/a-quiet-spring-day-then-126206/>.
- London Online, Population, Accessed January 14, 2021, <http://www.londononline.co.uk/factfile/historical/>.
- "Londoner Remembers the Stainer Street Bombings," BBC News, February 23, 2010. Accessed January 20, 2021, [BBC - Londoner remembers the Stainer Street bombings](http://www.bbc.com/news/uk-126206).



“Luftwaffe Terror Raids: Warsaw (September 24-27, 1939),” Children in History, April 23, 2013. Accessed January 23, 2021, [Luftwaffe Terror Raids : Warsaw \(histclo.com\)](http://histclo.com).

McKenzie, Alastair. “Who Had the Most Reliable Bombs in World War II”, March 18, 2018. Mechtraveller. Accessed January 12, 2021, [Who had the most reliable bombs in WW2? | Mechtraveller](http://www.mechtraveller.com).

Meikle, James. “Smoking falls to lowest level in UK since recording started in 1940s,” The Guardian, October 7, 2014. Accessed November 11, 2020, <https://www.theguardian.com/society/2014/oct/07/smoking-falls-lowest-level-uk-recording-started-1940s>.

“Popular Pastimes and Entertainment in the Second World War,” Imperial War Museum. Accessed November 6, 2020, <https://www.iwm.org.uk/history/popular-pastimes-and-entertainment-in-the-second-world-war>.

Pruszewicz, Marek. “The 1920s British air bombing campaign in Iraq” BBC News, October 7, 2014. Accessed June 2, 2020, <https://www.bbc.com/news/magazine-29441383>.

Reid, Alanah. “A History of the Guardian Newspaper,” Historicnewspapers.com, November 12, 2020. Accessed December 11, 2020, [Full History of the Guardian - Historic Newspapers \(historic-newspapers.co.uk\)](http://www.historicnewspapers.com).

Richards, James. “The Blitz: Sorting the Myth from the Reality,” BBC, Last modified February 2, 2011. Accessed September 11, 2017, [http://www.bbc.co.uk/history/britain/britain\\_wwtwo/blitz\\_01.shtml](http://www.bbc.co.uk/history/britain/britain_wwtwo/blitz_01.shtml).

Riddle, Lincoln. “The Luftwaffe’s Trial Run – 1937 Bombing of Guernica” War History Online, August 16, 2016. Accessed November 6, 2017, <https://www.warhistoryonline.com/world-war-ii/the-1937-bombing-of-guernica-spain.html>.

“Second Italo-Ethiopian War,” New World Encyclopedia 2019. Accessed July 8, 2020. [https://www.newworldencyclopedia.org/entry/Second\\_Italo-Ethiopian\\_War](https://www.newworldencyclopedia.org/entry/Second_Italo-Ethiopian_War).

Seymour, Veronica. “Hastings in World War II,” 2015. Accessed November 21, 2020, [Hastings in WW2 - Victoria Seymour.com](http://www.victoria-seymour.com).

Shiffer, Mark. “This Accident May Have Changed the Course of WWII,” War History Online, June 10, 2018. Accessed December 1, 2020, [This "Accident" May Have Changed the Course of WWII \(warhistoryonline.com\)](http://www.warhistoryonline.com).

- “The Art of War, The Home Front.” The National Archives. Accessed November 11, 2020, [http://www.nationalarchives.gov.uk/theartofwar/prop/home\\_front/](http://www.nationalarchives.gov.uk/theartofwar/prop/home_front/).
- “The Blitz,” West End at War. Accessed September 2, 2018, [http://www.westendatwar.org.uk/page\\_id\\_152\\_path\\_0p2p.aspx](http://www.westendatwar.org.uk/page_id_152_path_0p2p.aspx).
- “The Bombing of Britain, 1940-1945 Exhibition,” University of Exeter. Accessed September 5, 2018, [http://humanities.exeter.ac.uk/media/universityofexeter/collegeofhumanities/history/researchcentres/centreforthehistoryofwarstateandsociety/bombing/THE\\_BOMBING\\_OF\\_BRITAIN.pdf](http://humanities.exeter.ac.uk/media/universityofexeter/collegeofhumanities/history/researchcentres/centreforthehistoryofwarstateandsociety/bombing/THE_BOMBING_OF_BRITAIN.pdf).
- “The Bombing of Civilians in World War II,” World Future Fund.org. Accessed November 10, 2017, <http://www.worldfuturefund.org/wffmaster/Reading/war.crimes/World.war.2/Bombing.htm>.
- “The Bombing of Rotterdam: 14 May 1940,” Stadsarchief Rotterdam, Museum Rotterdam. Accessed February 7, 2021, <http://www.brandgrens.nl/en/the-bombing-of-rotterdam#rotterdam-14th-of-may-1940>.
- Utracka, Katarzyna, “Warsaw – the City that is No More,” Warsaw Institute, January 2, 2019. Accessed January 23, 2021, [Warsaw – the City that is No More | Warsaw Institute](http://www.warwainstitute.org/en/warsaw-the-city-that-is-no-more).
- Wheeler, Lauren. “30 Rare Photos of Bomb Shelters From World War II and Beyond,” Showbiz CheatSheet, September 4, 2018, H F Davis/Getty Images. Accessed December 10, 2020, <https://www.cheatsheet.com/culture/rare-photos-of-bomb-shelters-through-history.html/>.
- Wooldridge, C. Frederick and Everard, Cyril Ernest. "English Channel," Encyclopedia Britannica, August 28, 2019. Accessed February 6, 2021, <https://www.britannica.com/place/English-Channel>.
- Zakrzewski, Antoni, “Bombing of Wieluń. Polish Guernica,” European Network Remembrance and Solidarity, August 13, 2019. Accessed January 23, 2021, [Bombing of Wieluń. Polish Guernica | ENRS](http://www.enrs.eu/en/bombing-of-wielun-polish-guernica).