

WHAT ARE YOU GOING TO DO ABOUT IT?

The Effect of Air Defense on Morale During World War II

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Abstract: During World War II, air defense played a prominent role in safeguarding against bombing raids and enemy planes. However, those defenses were just as useful, if not more, for keeping up morale as they were for shooting down planes. This project examines how anti-aircraft artillery affected morale and argues that the unintended consequence of air defense was the preservation of morale among civilians and soldiers alike. This project asks to what degree did air defenses lessen the panic experienced by enduring aerial bombings. This analysis brings up the ethical and technological implications of air defenses during World War II and beyond.

A sound like thunder rolls over the skies. In the pitch black of night, the sky is illuminated by the explosions and flash of anti-aircraft guns. A distant “pop-pop-pop-pop” fills the air as they take shots at the whirl of aircraft; a rumble of explosions as bombs reach their target or miss completely. The ground shakes and smoke obscures your vision as you cough from the acrid smoke. How do you fight back against this threat from the sky, so far above your head? This trauma was far too common as both soldiers and civilians alike experienced constant bombings in their homes, cities, and battlefields.

Much like the fear of gas and chemical warfare during World War 1, bombings were a looming specter to both civilians and military alike during World War 2. Every country involved in the conflict faced and feared air raids and bombings. Even countries that were far from the front lines of the conflict, such as the United States, dreaded this specter from the air, and when it would strike. This fear was so prevalent that the United States government made films depicting how to survive air raids in order to quell possible panic. In an attempt to allay this terror, countries sought to grow the anti-aircraft defenses on the ground. But how effective were those defenses really? Did the anti-aircraft artillery help lessen the frequency or impact of aerial bombings? Or was it simply a morale measure to help prevent panic? Air defense was war changing by helping preserve morale as the technology served its intended purpose. The primary sources analyzed in the following pages paint a picture of a contemporary technological marvel that raised morale while also happening to shoot down

and deter bombers and planes. Some sources discussed here paint a clear picture of the effect on morale, while others talk around it or simply imply that outcome. The anti-aircraft artillery of World War 2, while it had its weaknesses, was a powerful tool that influenced both civilian and soldier morale during bombings. Air defense was integral against the bombings campaigns of World War II and the rise of air warfare, but the effect on morale is buried under the story of technological advancement.

Air defense got its start long before it the bombing campaigns of World War II with the use of aerial balloons during the American Civil War. At the time it was mostly just theoretical, as aviation was limited to the balloon's ability to go up and down. The fear of the skies was not prominent or considered much of a threat. The only thing lurking above your head was a bird and the occasional bomb they would drop. This all changed during the conflict to end all conflicts; the Great War, or as we know it today, World War 1. As planes became more reliable and more value was placed in their ability to observe the trench lines and fight other enemy planes, those on the ground felt the increasing need to develop weapons to combat them. The Germans were the first to turn to artillery as a defense against airplanes. It was their name for artillery that was shortened to flak, which became a universal term for anti-aircraft fires.¹ The primitive artillery and machine guns used were not incredibly effective in shooting down airplanes but it forced observation planes to fly higher and be less accurate. The theories on air defense that sprang from the experiences in World War I didn't get tested until the interwar period between World War I and World War II, when many thinkers understood both the need for air defense and its potential capabilities. When World War 1 broke out in 1914, the use of planes was far more prevalent and so was the need for protection against them, yet the danger posed by airplanes was not as strong as in World War II. In the beginning of World War II, anti-aircraft artillery relied mainly on sight and searchlights to spot planes and adjust the artillery fires from there. Later, Britain introduced radar which provided an early warning system for

planes approaching mainland Britain. While the advancement in technology is an important part of determining the effectiveness of air defense, the specific details are not the most important part of the scholarship on air defense. Instead, there is considerable debate on how it changed and what prompted said change.

The conversation on air defense during World War II by prominent scholars is focused almost entirely on the technological advancements made before, during, and immediately after the war. Most experts examine air defense through the lens of technological advancement due to mistakes in doctrine, and view the improvements as the result of adaptation to those faults. The other school of thought views air defense through the lens of doctrinal change due to technological advances, which argues that the upgrades in technology is what caused the popular conceptions of air defense to change. No matter the school of thought, both sides agree that military commanders and thinkers tended to only focus on the technological aspects of air defense rather than its effects on population. The response to technological adaptations in air defense, as well as the existence of anti-aircraft artillery as a whole, is undervalued when compared to the technological analysis. This technological argument is the main focus of almost all scholarship on air defense, especially that which is focused on World War II. Many scholars are blinded by the idea that the technology and advancement of such is the only thing that matters to advance the narrative of progress.

Nothing explains how prominently the United States's late start to the war affected air defense like "Learning to Fight from the Ground Up: American Anti Aircraft Artillery in World War II" by Bryon Greenwald. The article discusses how the United States soldiers made costly mistakes due to their inexperience. Greenwald argues that "no single theory—top down, bottom up, middle out, inter or intra-service rivalry, or single or double loop learning—is sufficient to understand how innovation and adaptation occurs in combat."² Instead, change occurs in many dimensions, in multiple ways. He argues that

1 James Crabtree. On Air Defense. 13.

2 Bryon Greenwald. Learning to Fight From the Ground Up: American Antiaircraft Artillery in World War II. 37.

the main areas of change were in technology, resources, training and doctrine, and from the “top down” in leadership. Greenwald uses the example of Chief of Staff at the time, General George C. Marshall, meeting with other top leaders to encourage officers to take responsibility for training as well as lengthening training time with anti-aircraft crews and practicing with real equipment and live fires, using live ammunition. It was this change in both doctrine and resources that molded U.S. air defenses into an effective fighting force. This change was prompted by the necessity for advances in technology, as anti-aircraft units were shooting down more friendly planes than enemy planes.

Greenwald argues that this change was a natural progression of making mistakes and learning from them, and so was driven by how anti-aircraft artillery affected the people around it. In the book “On Air Defense” by James Crabtree, the main argument was that air defense improved through responses to advances in aviation technology. During World War 1 “...air defense would prove not only practical but necessary in the new ways of waging wars, new ways that would just begin to touch on a separation in air defense between the tactical battle of the field armies and the strategic defense of home cities”.³ The change in air defense was as a reaction to innovation in other fields of aviation and warfare, rather than the result of anticipating threats from aviation. Crabtree documents the changes made to air defense from its birth in the late 1800’s to the modern usage in 1990’s, and in each stage documented the specific technological changes that caused air defenses to adapt. He relies on evidence mainly from maps and plans from the eras he studies, as well as an analysis of the technology itself. These pieces of evidence further support his technological argument, as the upgrades to air defense batteries only came about as a reaction to attacks, mainly bombings.

The article “Fighter Defence before Fighter Command: The Rise of Strategic Air Defence in Great Britain, 1917–1934” by John Ferris, also contains a technological argument, however this one differs slightly from “On Air Defense”.

“Fighter Defence Before Fighter Command” argues that instead of air defense changing due to technology, technology changed due to air defense. Ferris says “FAHQ had solved every other problem in air defence. It began to solve the remaining problems in 1933–34, through the development of radar, high performance cantilever monoplanes with eight wing mounted machine guns, and the systematic improvement of air tactics.”⁴ proving that Britain’s Fighting Area Headquarters (FAHQ) had developed air defense technology to preempt any technological advancements in aviation. This highlights the interdependence of technology and air defense, suggesting that the relationship between the two is the most important facet of the advancement of air defense and the primary indicator of what trends will play out in the progress of air defense.

Most, if not all, academics on air defense during this time period agree that technology was either influenced by adaptations or was the cause of adaptations, or both. However there is some disagreement on the extent that technology played on this. An example of this is in “On Air Defense” and “Learning to Fight From the Ground Up”. Both sources agreed that technology helped adaptation, but there was a disagreement on the role technology played in that adaptation. “On Air Defense” used various technological advancements to emphasize that technology was the most important force in the evolution of air defense. Its consecutive upgrades asserts that technology was the driving factor in overall progress. “Learning to Fight from the Ground Up” instead suggested that the technology came second to the training on said technology, and that by increasing time spent with the weapons systems, pushed air defense further than just technology alone.

Any historian of air defense during World War II would agree with the idea that technology played at least some part in the evolution of air defense, that much is clear. The source of the argument lies in exactly how great of a part technology actually played and to what degree. This distinction, while from the outset appears to be just semantics, is crucial for showing how

³ James Crabtree. On Air Defense. 11.

⁴ John Ferris. Fighter Defence before Fighter Command: The Rise of Strategic Air Defence in Great Britain, 1917–1934.

effective air defense was thought to be, at least from a historical point of view. In modern times, scholars can use statistics and documented casualties to prove that air defense did something, in terms of fighting bombers and other aircraft. These “hard facts” were unavailable to the people who lived in that time and could only rely on what they saw and heard. The disagreement among historians then lies in how it affected morale and civilians, as well as to which degree air defense helped prevent and protect cities and populations. It is this focus on technology which obscures the broader, unstated argument about morale.

The primary handbook that detailed explicitly how the United States air defenses worked in a technological sense was the “Army Air Forces Field Manual”. It was published in 1943, as the United States joined the fight in World War II. The manual was created in order to “present a general statement of the organization for air defense”⁵ and lay out the organization and principles for the U.S. Army air defenses in World War II. This source was published by the War Department and while it can be considered fact, it shows how air defense should have been, not how it actually was. The information inside was laid out plainly with little to no emotion, yet it is possible to infer the effects on morale these instructions provided. The instructions in the manual advised to keep minimal interference on communities and civilians, in order to win over attitudes towards anti-aircraft batteries. It also contains a section entirely devoted to civilian defense and assisting the surrounding civilian population.⁶ Why would soldiers care about the fears and attitudes of civilians, especially ones in countries that were not their own? Even as inexperienced as the soldiers of the United States were, they understood the effect air defenses and bombings would have on civilians and they wanted to have as much of a positive influence as possible.

This source implies the boost to morale that comes from air defense, rather than explicitly stating it, like some others in this analysis. In contrast to the next source, the “Army Forces

Field Manual” seemed to care more about the civilians it defended rather than the soldiers themselves and their attitudes and morale. It placed the initiative on the commanders and officers to motivate their soldiers while also protecting the morale of civilians.

The source IX Air Defense Command: Historical and Statistical Summary 1 Jan 1944– 1 June 1945 shows that the air defenses in Belgium had the morbid outcome of destroying more friendly planes than enemy planes. This particular unit reported 36 enemy fighters shot down and 69 friendly shot down.⁷ While the defenses mentioned did shoot down enemy fighters, it shot down nearly double the amount of friendly aircraft.⁸ This source is one of the few that shows a loss in morale as the unit was forced to reckon with the friendly casualties it caused. The unit in the summary was one of many in Europe at the time, and it paints a picture of technological failure that was all too common among air defense units, especially the new United States ones.

This source paints a picture of technological and doctrinal failure by using statistics and “hard facts” to summarize the performance of the unit as a whole. The report was created by Brigadier General William Richardson, later Major General, who was in charge of organizing and training the Ninth Air Defense Command of the Ninth Air Force, and planned the air defense operations for the continental invasion of Europe during World War II. He compiled all the data on his unit into a report to be analyzed and was likely motivated by a desire to learn from his mistakes and better his unit. He assumes, when writing and compiling this that it would be for a military audience, namely his commanders. It is likely he is biased in reporting failures as it would make his leadership look bad. There is a possibility there are more friendly casualties than reported or less enemy casualties than reported. The report is representative of many other air defense units, specifically U.S. ones, and paints a picture of what air defense during World War II in the U.S. Army was like as a whole. The secondary source

5 United States Dept. of the Army. Army Air Forces Field Manual. 1.

6 United States Dept. of the Army. Army Air Forces Field Manual. 23.

7 William Richardson. IX Air Defense Command: Historical and Statistical Summary 1 Jan 1944– 1 June 1945.

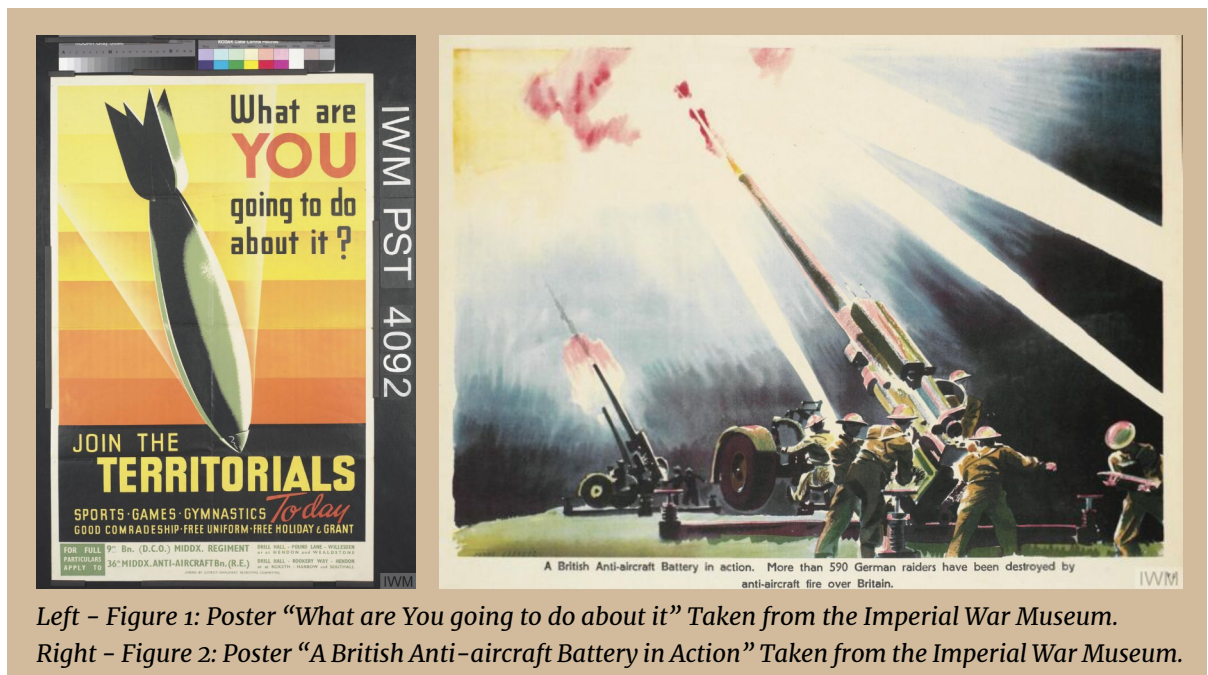
8 William Richardson. IX Air Defense Command: Historical and Statistical Summary 1 Jan 1944– 1 June 1945.

“Learning to Fight from the Ground Up: American Anti Aircraft Artillery in World War II” also describes the same problems this particular unit ran into which was that anti-aircraft artillery often shot down more friendly planes than enemy.⁹ Shooting down friendly planes would affect morale in a negative way rather than the positive boost to morale that is found in other sources. Soldiers manning these sites would feel incredibly guilty about friendly fire and would be less likely to fire on aircraft as a whole, decreasing effectiveness and continuing to lower morale. They would be forced to live and continue with the knowledge that they were responsible for the killing of other Americans. Did this shock to morale cause soldiers to be less eager to fire on planes or did the heat of battle and fear of death override any guilt they had? This report provides a view from the very top of the command chain, and so misses any picture of the soldiers on the ground. This source and the one before it give a glimpse of the American view on morale and air defense, yet America only spent about three years in the war and joined at the very end. The British joined the war three years before the Americans did and bore the brunt of the bombings as one of the last holdouts in Europe to the German war machine.

The sources from the British point of view paint a far greater picture of their struggles to maintain and increase morale through years of bombings.

One such source was a poster with the title “What Are You Going To

Do About It?” which shows a picture of a falling bomb on a yellow, orange, and red background, made using a lithograph. The date of origin is unknown but it was sponsored by the 9th Battalion Middlesex Regiment and the 36th Middlesex Anti-Aircraft Battalion (Royal Engineers) of the Territorial Army. The poster is an advertisement for joining the “territorials,”¹⁰ the territorial army of the British. The use of the bomb as a recruiting tool shows the fear created by the constant bombings by the Germans. Even though the poster itself is advertising “sports, games,” and “good comradeship”¹¹ which are arguably positive and pleasant things, the main draw is the lurking threat that every person in Britain feels. The recruiters who sponsored and published this wanted to use a “carrot and the stick” type of draw to the territorial army. There were good things to gain by joining the territorials, but there was also the feeling of accountability to protect yourself, your family, and your country from the German bombs. The poster was clearly aimed at the British public and was broad in nature in order to capture the attention of as many people as possible. The use of language in the title almost seems accusatory by forcing the viewer of this poster to ask themselves what they are doing to help both the war effort and



Left – Figure 1: Poster “What are You going to do about it” Taken from the Imperial War Museum.

Right – Figure 2: Poster “A British Anti-aircraft Battery in Action” Taken from the Imperial War Museum.

9 William Richardson. IX Air Defense Command: Historical and Statistical Summary 1 Jan 1944– 1 June 1945.

10 Territorial Army, 9th Battalion (the Duke of Cambridge’s Own) Middlesex Regiment, What are You going to do about it?

11 Territorial Army. What are You going to do about it?

fight the Germans. The color of the bomb as pitch black in contrast to the light background evokes a feeling of dread, as you can't see any detail to the bomb itself, just the silhouette. The encouragement to essentially band together in the face of a threat would encourage morale through shared struggles and bonds, by fighting back against said threat. The British government wanted to resist the feelings of helplessness and doubt and would use propaganda such as posters like this source and the next one.

The poster "A British Anti-aircraft Battery in Action" shows two British anti-aircraft guns in the foreground, taking up most of the space. The rest of the image shows the light emitted from the guns as they fire, breaking the darkness surrounding the guns. The text of the poster says "A British Anti-aircraft Battery in action. More than 590 German raiders have been destroyed by anti-aircraft fire over Britain."¹² The poster was created by James Gardner, a prolific poster maker who's artwork spanned the entirety of World War 2 and a few years beyond. Most of his posters displayed British aircraft or the war effort during World War 2. In this poster, Gardner clearly wants to show the might and effectiveness of the anti-aircraft guns. Though the number of planes shot down shows that the technology was effective,¹³ the main purpose of this poster was to raise morale. The poster showed that the guns were doing something against the bombers that attacked Britain, which meant that the British were not helpless, or at least didn't feel helpless, which is far more important than the numbers of planes shot down. The use of language describing the Germans as "German Raiders"¹⁴ evokes imagery of barbarians who are cruelly attacking Britain. It paints a very clear picture of "Us" normal people versus "them" savage and aggressive people. The symbolism of the bright light of the guns firing, reflected on the dark skies shows how the anti-aircraft artillery was the bright light in the darkness of the bombing raids, and would bring people hope when they saw it. Both the air defenses and the picture of the air defenses were important tools to withstand apprehension and

dread that derived from the constant bombings. Not only would joining anti-aircraft batteries physically repel bombings, it would also provide opportunities to showcase this resistance to the public.

Another example of photographs being used to increase morale is a photo that juxtaposes the princess royal, who we know as Elizabeth II with air defenses. This photograph illustrates air defenses being used for morale purposes by showing the current queen of England Elizabeth II, though at that point only a princess, visiting a mixed anti-aircraft battery. The photo features HRH surrounded by her entourage and other soldiers standing next to a large 3.7 heavy anti-aircraft gun. The gun is about double her size and stands in the foreground while in the background soldiers wearing MK II helmets demonstrate how it works. The caption on the back reads "Gunnery officers explaining points of interest to H.R.H. about a 3.7 Heavy A.A. gun."¹⁵ The back of the picture also reveals the photo was "taken by Lt. O'Brien"¹⁶ dated 5.8.44. This photo was taken exactly a year before V-E day and while the threat of bombings had faded with the Allies on the offensive, it was important to continue to preserve morale for both soldiers and civilians. The royal family of England acts as a cultural head of state, and photographs of them observing important defenses and visiting soldiers would boost the spirits of both soldiers and civilians alike. It would also show that everyone in Britain, from the lowest level to the highest, was doing their part for the war effort. While this photograph combines both the Royal Family and air defenses to raise morale, the next photograph focuses solely on air defenses.

The photograph "The Auxiliary Territorial Service At An Anti-Aircraft Gun Site In Britain, December 1942" looks very similar to the poster "A British Anti-aircraft Battery in Action", in that it features two anti-aircraft guns firing at night and lighting up the sky. The picture was taken in December 1942, which was after the Blitz. With hindsight, we know that the threat

¹² James Gardner. A British Anti-aircraft Battery in Action.

¹³ Gardner. A British Anti-aircraft Battery in Action.

¹⁴ Gardner. A British Anti-aircraft Battery in Action.

¹⁵ Lt. O'Brien. H.R.H. THE PRINCESS ROYAL VISITS MIXED HEAVY ANTI-AIRCRAFT BATTERY.

¹⁶ O'Brien. H.R.H. THE PRINCESS ROYAL VISITS MIXED HEAVY ANTI-AIRCRAFT BATTERY.

of bombs had subsided, but the fear remained and with it the constant training against it.

This photo demonstrates how bombings at this point were so engrained in life in Britain and provides an example of showcasing resistance in the public sphere. The photo may have been demonstrating technological capabilities but it was created with morale in mind. The display of power would have bolstered public morale and shown that Britain was still prepared and ready to fight the threat from the sky. The bright lights of the guns are providing the light needed to take the photo, symbolizing how the air defenses lit up the skies and provided hope for citizens living through the constant bombings. These bombings were engrained in public life and so photos like these were created for the benefit of public morale. In writings and discussions from the time period, British commanders and soldiers state as much, often explicitly or indirectly.

The RAF narrative on the Air Defense of Great Britain Vol III, Night Air Defence, June 1940–December 1941, paints a different picture and focuses on the technology and how that supported RAF operations. From the text the RAF states “The problem of air defence is well conceived in three subsidiary but interrelated phases. Simply stated, these are early detection of the enemy, his continuous and accurate location and, finally, engagement and destruction. In broad terms, these are the prerequisites of successful interception both by day and by night, with the important difference that by night the limitations of human vision had somehow to be made good.”¹⁷ This shows that anti-aircraft artillery was limited by technology and human error, and had many limitations to be effective at shooting down aircraft. The tradeoff for accuracy was the impact on both civilian and military populations. The goal was to alleviate feelings of

helplessness and defeat by providing a visual counteroffensive to German planes. The RAF were far more concerned about the technological failings than the impact on the public¹⁸ that other government officials were, and so often ignored these impacts. Much like the American “Army Air Forces Field Manual” this source implies the effect on morale, rather than stating it directly. They were focused on air defense’s primary objective which was the defense against aircraft. In contrast, air defense’s secondary objective to provide a source of morale is stated more explicitly in the next source, which is a film.

The video source “When Air Raids Strike “ is an American propaganda film created in 1942, after the US had entered World War 2. The film describes what to do when an air raid happens. While the United States had only experienced the attack on Pearl Harbor, the fear of bombings was just as present in the minds of the public. The United States designated certain coastal areas as “target areas” and the population living in those areas started preparing for what they felt was an inevitable attack. They too had to adjust to the fear of bombings prevalent in Europe and Asia, though they were slower to adapt as they “long imagined that it was well out of war’s reach.”¹⁹ The film helps boost morale as it not only informs the viewer what to do in the event



Left - Figure 3: Photograph “H.R.H. THE PRINCESS ROYAL VISITS MIXED HEAVY ANTI-AIRCRAFT BATTERY” Taken from the Imperial War Museum. Right - Figure 4: Photograph “The Auxiliary Territorial Service At An Anti-Aircraft Gun Site In Britain, December 1942” Taken from the Imperial War Museum.

¹⁷ Air Historical Branch Air Ministry. Air Defense of Great Britain Vol III, Night Air Defence, June 1940–December 1941. 7.

¹⁸ Air Historical Branch Air Ministry. Air Defense of Great Britain Vol III. 8.

¹⁹ Westbrook Van Voorhis. The March of Time: When Air Raids Strike. 0:01:35.

of an air raid but also gives the example of Great Britain as a grizzled veteran of air raids. By showing the anti-aircraft batteries of Britain, the film shows that the people of England have gone through it and so can the Americans. Just the use of the imagery of anti-aircraft boosts morale and provides comfort against the threat of bombs. The film also brings up the point that "Whether or not the anti-aircraft gunners actually shoot down the enemy, their curtain of fire has time and again made precision bombing impossible."²⁰ By directly stating that the use of air defense is not primarily in how many planes it shot down but how it prevented accuracy and saved lives and industry like factories for armaments and hospitals exemplifies the argument that air defenses increased and effected morale. Less bombs on target often means less destruction of homes, cities, and important infrastructure. Less destruction means less recovery and more of the things you need and want in day to day life. This film, much like the film in the next source, shows Britain as a war-hardened and determined people, though it emphasizes anti-aircraft artillery as a primary defense for several reasons. In the film "When Air Raids Strike" its purpose is to show that Britain is fighting back. In the film in the next source, its purpose is to show that Britain can withstand any bombings launched at it.

The film "London Can Take It" was a propaganda film released by the British government in 1940 with the aim of being released in the United States to raise support for Britain. Despite being made in Britain, specifically by the British government, it is narrated by an American war correspondent Quentin Reynolds. This was meant to try and influence the American public by presenting a familiar voice, one with an American accent. This was meant to be filmed like a documentary, though there is some question as to how much of it is accurate or representative of the whole population. The title "London Can Take It" evokes imagery of a bomb-hardened London citizen who isn't asking for pity from the American people but support for the war against the "barbaric" Germans. The title is itself a challenge to both the British and the Germans. It shows the

Germans that Britain would withstand anything that was launched at them and it asked British people to demonstrate a deeper resolve and morale to remain strong.

The film demonstrates how continuous anti-bombing propaganda was a part of maintaining morale, along with air defenses and anti-aircraft artillery. This source is one that implies an effect on morale rather than stating it. The film does not want to portray the British public as weak or doubtful, and so it pushes a narrative that everyone was doing what they can to fight back. This anxiety is also shown through the oral history of a woman who worked in a mixed anti-aircraft battery.

I turn now to the oral histories, an important yet often overlooked piece of the story of air defense. While they tend to be subjective, it provides a firsthand account of morale during the war. These are the testimonies of the people who lived and experienced bombings and worked on the antiaircraft batteries. Their stories and experiences working on these batteries are arguably the most important pieces of evidence for the effect of air defense on morale because they often explicitly state how air defenses increased their morale during the war. The experiences and stories of those who lived provide the closest glimpse into what actually happened that academics can get without physically being there themselves. This personalizes the story and completely illustrates the human factor of war.

The story of Rosemary Sylvia Shea demonstrates how the fear of bombings pulled those who weren't necessarily the first to join the fight. The desire to fight against the bombings was strong enough to persuade women to join the Auxiliary Territorial Service and man the air defenses. The bombing campaigns against the British provided an indiscriminate enemy that could unite everyone, regardless of their background. This led to the creation of mixed [gender] batteries which were often used as propaganda pieces on top of their duties as air defenses. They were often used to show that all of Britain stood united which increased morale of civilians who couldn't fight

20 Van Voorhis. When Air Raids Strike. 0:04:26.

and simply had to endure. Shea remarks how she was “very proud”²¹ of how the batteries did and it gave you “satisfaction or pride”²² in what you did for the war efforts. Her pride in the batteries exemplifies the morale boost that air defenses provided. Rather than remember and discuss the bombings and the feelings those evoked, she instead recalls her efforts on the battery itself as her main memories of the war. This idea, that civilians would be more influenced by air defenses than the bombings itself was hypothesized in the years leading up to World War II, as shown by the next source.

Even from the beginnings, theorists of air power knew the affect planes and bombs would have on those stuck on the ground. One of those theorists, William C. Sherman, one of the first Army Air force instructors foresaw this effect and wrote about how civilians suffered more from bombings than military personnel. “Air Warfare” by William C. Sherman was published in 1926, around 15 years before the start of World War II. Sherman was a premier thinker and strategist of air warfare and air defense. His writings in the book predicted how air warfare would be fought and what affects air defense would have on warfare. By writing this, Sherman wanted to predict and influence future conflicts and be better prepared for any coming wars. William Sherman ended up dying in 1927 as an aviation instructor at Fort Leavenworth, Kansas, so he never saw how correct he would end up being during World War II. Most of what Sherman wrote ended up being reliable though he admits that it was influenced by many others and was purely personal opinion, not an official publication. Sherman clearly values aviation as a viable method of study for future wars. This source is not directly tied to World War II but it accurately predicted how aviation and air defense would be used. Sherman knew, years before air warfare was truly a threat, that there would be a human factor that affected air power.²³ Fear is a powerful psychological motivator, and bombings

would instill that fear. He knew that people on the ground, essentially helpless from destruction raining from the sky, would affect morale and the people’s view on war. Sherman explicitly states “For the nature of man is the same today as of old, and his reactions to physical stimuli remain essentially unchanged.”²⁴ (page 6) While he didn’t explicitly say that air defenses would be the answer to this “reaction to physical stimuli”²⁵ it is implicitly stated. Sherman’s writings were an accurate predictor of bombings in World War II and beyond, and are supported by several oral histories, including this next source.

A testimony of how air defenses increased morale came from the oral history of Herbert Stanley Grove, who worked as a spotter on an anti-aircraft site called Chigwell Rise in Essex, England. As he describes his experiences training and operating on one of these sights he mentions that there “Wasn’t enough anti-aircraft firing going on to build up the morale of the civilian population”²⁶ and so the British government and head of the British Army had them fire more rounds during raids. Clearly, the decision makers of the time knew about the effect of the air defenses on the morale of the civilian populations. Almost as a result of this, he also noted that there was “very little defeatism about the blitz”²⁷ and that most British were willing to fight their way through. This relationship between the British morale and air defense was interconnected throughout the war. The British were ready and had the morale to fight against bombings and so turned to air defenses to protect their homes. The air defenses provided morale and caused the general population to be far more willing to withstand the constant bombings.

Even if the defenses weren’t incredibly effective against the aircraft solely by aiming, they could provide fields of fire that made the bombings inaccurate, while providing a spectacle for the civilians stuck experiencing the bombings. Even a soldier on the ground understood the

21 Rosemary Sylvia Shea. Interview by Conrad Wood. 2002.

22 Shea. Interview by Conrad Wood. 2002.

23 William Carrington Sherman, Johnson, and Air University (U.S.). Press [1926] 2002. Air Warfare.

24 Sherman. Air Warfare. 6.

25 Sherman. Air Warfare. 6.

26 Herbert Stanley Grove. Interview by Conrad Wood. 1992.

27 Grove. Interview by Conrad Wood. 1992

need for air defenses and the morale boost it provided, as shown in both this oral history and the next one.

The oral history of Helen Constance Cousins who worked on a gun site provides a similar narrative on working on anti-aircraft defenses. She remarks on how they were encouraged to join due to the need for air defenses and people to man them. There was an increase in fear as the threat changed from aircraft bombings to long range rockets which were almost impossible to hit by anti-aircraft defenses. Cousins describes her battery as very effective against German aircraft but was shocked by seeing German pilots who seemed very young. However, she realized that "it was us or them"²⁸ and was less perturbed by doing her job. Her narrative provides another look at British who felt gratified by manning air defenses and it provided them something to do against the Germans, rather than experience the helplessness of being unable to fight back. Cousins' testimony provides evidence for both a positive and negative effect on morale. On one hand, she was proud of her battery and what it did for the people around her. On the other hand, she felt somber and mournful for the lives of the German pilots that she felt responsible for killing. Despite this, it was the hopefulness and camaraderie that the anti-aircraft battery provided that won out, showing the positive impact that it had on both her and the British public.

Much like the thoughts on the war itself, there was a divide in how both the British and the Americans thought about air defense. The British had the advantage of having both experience with being bombed and defending against bombings, and they had the ability to test what worked and what didn't over several years. The Americans had the ability to learn from others' mistakes as they had joined the war in the last few years. However, they did not do that and often ended up repeating the same mistakes as others such as not having the ability to distinguish friendly planes from enemy planes. Nonetheless, they were able to make use of radar and other technological advances in air defenses and use that to their advantage. Due to this divide in thinking,

the Americans were often behind on how to use air defenses and how effective they could be.

With the increase in both air defenses and bombings in modern warfare, the effect on morale will be a crucial influence on civilian and soldier's morale. It determines how willing these people were to fight a long, hard war which required sacrifices and strong resolve. The major effect would be deterrence against bombers but the secondary effect is on morale. Morale is chased and far more necessary than many believe because it influences if people will fight a war. Low morale often means low support for war, which causes lost battles and low public support for war. Even in today's military, morale is crucial to soldier readiness and productivity. Anti-aircraft artillery worked both to shoot down bombers and make their bombing raids less accurate along with the unintended consequence to prevent panic from the threat of bombings. The research suggests that people of the time understood the effects on morale and how they helped or hindered the war effort, but that conclusion seems to have been glossed over in subsequent scholarly research. So often the human aspect of military history has been lost or ignored to chase flashier aspects of technology, strategy, and tactics. This issue is one that should bear more weight moving forward in this field of research, as the human aspect is arguably the most important. History is easy to perceive as only words on a page and it is easy to forget that real people lived through these real life experiences. The field of military history would benefit greatly by expanding into how the people experienced and felt, not just what they did. This opens up a rich perspective and gives a far greater understanding to history as a whole.

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