



Spring 2017

# Saving Grace on Feathered Wings: Homing Pigeons in the First World War

Brandon R. Katzung Hokanson '20, Gettysburg College

Follow this and additional works at: [http://cupola.gettysburg.edu/student\\_scholarship](http://cupola.gettysburg.edu/student_scholarship)

 Part of the [European History Commons](#), and the [Military History Commons](#)

**Share feedback about the accessibility of this item.**

---

Katzung Hokanson, Brandon R., "Saving Grace on Feathered Wings: Homing Pigeons in the First World War" (2017). *Student Publications*. 567.

[http://cupola.gettysburg.edu/student\\_scholarship/567](http://cupola.gettysburg.edu/student_scholarship/567)

This is the author's version of the work. This publication appears in Gettysburg College's institutional repository by permission of the copyright owner for personal use, not for redistribution. Cupola permanent link: [http://cupola.gettysburg.edu/student\\_scholarship/567](http://cupola.gettysburg.edu/student_scholarship/567)

This open access student research paper is brought to you by The Cupola: Scholarship at Gettysburg College. It has been accepted for inclusion by an authorized administrator of The Cupola. For more information, please contact [cupola@gettysburg.edu](mailto:cupola@gettysburg.edu).

---

# Saving Grace on Feathered Wings: Homing Pigeons in the First World War

## **Abstract**

Soldiers of the First World War came in all shapes and sizes. The humble homing pigeon is one of the more unique and critical examples of such. They served in the armed forces of both the Allies and the Central Powers. Used as a last-ditch form of communication, the homing pigeons were exceptional in the work of sending messages back and forth between the battle lines. Little has been written about their vital role and even less in the rigorous training the birds and their handlers both endured. Understanding their training is critical to understanding how the homing pigeons performed so well under the extreme conditions of combat.

## **Keywords**

Homing Pigeons, The First World War, Great Britain, United States

## **Disciplines**

European History | Military History

## **Comments**

Written for HIST 219: The Great War. Received the Edwin T. Greninger '41 Award in History in Fall 2017.

## **Creative Commons License**



This work is licensed under a [Creative Commons Attribution-NonCommercial 4.0 License](https://creativecommons.org/licenses/by-nc/4.0/).

Saving Grace on Feathered Wings: Homing Pigeons of the First World War

Brandon R. Katzung Hokanson

*The Great War*

Professor Isherwood

It might seem bizarre to place the lives of thousands of soldiers in the hands, or in this case the wings, of a pigeon. Yet this is precisely what happened in the First World War. Homing pigeons were utilized by both the Allied and Central Powers during the conflict and served as a last-resort form of communication between the frontlines and headquarters with an exceptional rate of efficacy. Countless soldiers depended their very lives on homing pigeons. However, the full picture of how pigeons managed to complete their dangerous and difficult mission is overlooked. Actions taken on the home fronts, the care and training of both the pigeon and the handlers, and pigeon performance in actual combat were the contributing factors that allowed pigeons to complete their task of saving human lives.

Using pigeons for military purposes was not a new idea at the outbreak of the First World War. Since Ancient Rome, the sole purpose of the pigeon was communication. Homing pigeons proved to be excellent at transporting handwritten messages attached to their legs. By the beginning of the twentieth century, not every nation continued to see pigeons as useful tools for war. Military officials in several nations believed the practice had been antiquated by 1914 with the advent of telephone communication. Others looked upon using military pigeons as a mere joke. It did not take long, however, for military officials to realize that relying on telephone communications was a flawed idea. The telephones used in the First World War were, while revolutionary for the time, terribly unreliable. Telephone's greatest flaw in this time period was that it relied on wires—hundreds of yards of wires stretching from station to station. The Western Front was not a good place to rely on exposed or slightly buried wires. They were easily cut by artillery shells or sabotaged by enemy soldiers. Communications soldiers known as linesmen would have to step out of the relative safety of the trench and repair cut lines, often several times a day. Countless linesmen were killed while trying to do so. When soldiers realized they needed a different form of communication to rely on after telephones and radios had failed, they simply had to look to the pigeon as the solution.<sup>1</sup>

France and Belgium entered the First World War already with effective pigeon communication units within their armed forces. These two nations especially recognized the value that homing pigeons still presented. France and Belgium had been wary of the possibility of a major European war, likely against Germany. Trained communication pigeons were viewed

---

<sup>1</sup> Editors of the Army Times, *A History of the U.S. Signal Corps* (New York, NY: G.P. Putnam's Sons, 1961), 115-118.

as key to national defense. France had firsthand experience with the benefits of pigeons in military service. During the Siege of Paris in the Franco-Prussian War, Parisians successfully used homing pigeons to send and receive letters to and from London. One pigeon alone managed to carry 40,000 messages on a micro-film that required a special magnifier to read. When the First World War broke out, the French rushed their pigeons to the front *en masse*, often using civilian autobuses as makeshift pigeon lofts.<sup>2</sup>

Belgium was known for having some of the finest breeding stock of pigeons in all of Europe. Their pigeon communication units functioned like a well-oiled machine. Unfortunately for the Belgians, this avian-run machine ran into a serious setback early into the First World War. When it became evident that Germany would capture Antwerp in late 1914, the commander of the Belgian Pigeon Service wept as he burnt alive nearly 2,500 of his much-beloved pigeons to prevent them from falling into German hands. Up with the flames went some of the best pigeons in Europe and the majority of Belgian Pigeon Service.<sup>3</sup>

Before the war, Germany had maintained a small Pigeon Service, but, like Britain, Germany believed that new technology would prevail. The Germans soon found out after initial battles with the Belgians and French that pigeons were still extremely reliable forms of military communication. To reinvigorate their Pigeon Service, Germany used pigeons donated by and, in some cases, were confiscated from civilians. Other pigeons were acquired by capturing French pigeon lofts. Not too long into the war, Germany went from having only a handful of pigeon stations to 384 located on all of its fronts.<sup>4</sup>

Britain struggled to put together effective pigeon units within the ranks of its army. The mobilization of thousands of pigeons for war was no simple task. Immediately after the outbreak of hostilities, Britain placed restrictions on pigeon movement by train because of the possibility of German spies using pigeons to send messages to Germany about British troop preparations. Their fear was legitimate. Several German spies were living in Britain and raising pigeons for that purpose. They were quickly caught by the local police and detained. Despite all of the rumors about traitorous pigeons roaming the landscape, the British realized they had to incorporate them into their own military. If there was one man who could build an entire British

---

<sup>2</sup> Alan Harfield, *Pigeon to Packhorse: The Illustrated Story of Animals in Army War Communications* (Chippenham, U.K.: Picton Publishing, 1989), 91.

<sup>3</sup> Jilly Cooper, *Animals in War* (London, U.K.: Corgi Books, 2000), 103.

<sup>4</sup> Walter Harter, *Feathered Heroes: Pigeons from Ancient Times to Now* (New York, NY: Criterion Books, 1968), 40.

Pigeon Service from scratch, it had to be Alfred H. Osman. He was perhaps the most well-known and well-connected Briton within the British pigeon fancier community. The British War Committee contacted Osman and offered him a commission in the Royal Army to create an Army Pigeon Service. He accepted this position under the conditions that he be given the honorary rank of captain and would not be paid. Osman sought birds from civilian pigeon breeders. Letters “were addressed to the owners asking for their cooperation and use of their birds,” Osman reported. “In no single case was refusal met with.” Osman himself donated 60 of his own birds to the Royal Navy Pigeon Service. The British Pigeon Service was officially organized in October 1914, first with the Navy, then the Army.<sup>5</sup>

“At the outbreak of the war the British Army had not paid any serious consideration of the use of pigeon,” remarked Osman after the war.<sup>6</sup> Despite this hurdle, Osman managed to start the Army Pigeon service with sixty enlisted men. As the war prolonged, this number greatly expanded. Pigeon breeders and experts made up a majority of men in the British Pigeon Service. Those who handled the birds had to be knowledgeable about them. Because of his strong connections, Captain Osman found many patriotic pigeon breeders who donated their birds, without compensation, to defend Britain. Osman noted that “100,000 birds passed through my hands for active service.”<sup>7</sup> The sacrifice that pigeon breeders made to the war effort did not go unnoticed. Nearly 600 pigeon breeders were awarded certificates by the British government as a thanks “for the meritorious performance of the birds they lent,” for the naval service alone.<sup>8</sup>

When the United States entered the First World War, its Pigeon Service was in a semi-ready state. This meant that, while the U.S. military initially had few pigeons in its ranks, American pigeon breeders were certainly ready to supply pigeons to the war effort. Since the beginning of the war in 1914, Americans cautiously watched the conflict engulf Europe. A movement of preparedness spread throughout the nation, such as men going to specific camps to receive some military training. For those who could not physically train for or fight in a potential European war, a 1916 *New York Times* article titled “Carrier Pigeons an Aid to Preparedness” suggested that raising homing pigeons was a worthy way to express patriotism. The article described the benefits of the homing pigeon, stating “nothing yet made can recall a pigeon once

---

<sup>5</sup> A. H. Osman, *Pigeons in the Great War: A Complete History of the Carrier-Pigeon Service during the Great War, 1914-1918* (London, U.K.: The Racing Pigeon Publishing Co., Ltd., 1928), 19.

<sup>6</sup> Osman, *Pigeons in the Great War*, 24.

<sup>7</sup> Osman, *Pigeons in the Great War*, 6.

<sup>8</sup> Osman, *Pigeons in the Great War*, 22.

on the wing with news of his country's invasion or peril . . . one man with pigeons could divide the labor by five." The article described that "preparedness lofts should be created by Americans." The article eerily prophesized the future, stating "Perhaps not this year or the next, but sometime your pigeons are going to be useful to your country."<sup>9</sup>

In June 1917, two months after America's declaration of war on Germany, General John Pershing requested immediate mobilization of military homing pigeons. In the 1917 edition of *American Squab Journal*, a journal for pigeon breeders, an article was written by the United States Department of Agriculture to ask American farmers to help raise more pigeons for the war effort. "The modest pigeon can play a prominent part in preventing progress of the Prussian peril," began the article. It emphasized that "EVERY farm must have poultry, or more poultry by next year. It will help win the war."<sup>10</sup> In order to construct an American Pigeon Service, Frank J. Griffin, an American authority on pigeons, was commissioned a major in the U.S. Army. In a matter of weeks, Major Griffin managed to construct the American Pigeon Service, consisting of 8 officers, 634 enlisted men, and approximately 10,000 donated pigeons. Compared to the British, the speedy American mobilization was largely due to the preparedness of America's pigeon breeders.<sup>11</sup>

After the pigeons had been taken in by the military, training of both pigeon and the handlers immediately commenced. The donated birds, however, were not quite enough to keep up demand. All nations that had efficient Pigeon Services had a thorough breeding program. The pigeon is a perfect bird for mass production; they reproduce like rabbits. Unlike other animals, when a male meets with a female, they partner for life. The 1920 U.S. Military manual on training pigeons even dedicates an entire section to cover proper pigeon breeding. The manual advised that it was best for the pigeons to choose their mates without human intervention. Pigeons become sexually active between the ages of four to nine months. They typically lay and sit on two eggs. During the First World War, pigeons sat on and incubated their eggs in a military-issued earthen bowl, somewhat resembling a wooden salad bowl. It usually took 17 days for a pigeon to hatch. Pigeon cocks and hens naturally take equal turns sitting on the egg so neither gets too fatigued. A few days after hatching, the squeakers, an appropriately given name

---

<sup>9</sup> "Carrier Pigeons an Aid to Preparedness," *New York Times*, July 16, 1916.

<sup>10</sup> Clarence Dubois, "Squab Production Urged by Government," *American Squab Journal* 6, no. 1 (1917): 8-9.

<sup>11</sup> Editors of the Army Times, *A History of the U.S. Signal Corps* (New York, NY: G.P. Putnam's Sons, 1961), 118.

for infant pigeons, were given a government band containing a serial number on their leg. After four weeks, the squeakers left their parents and began their military training.<sup>12</sup>

The first step for young pigeons was to be placed in a loft with windows. A loft is essentially the same thing as a chicken coop but specifically made for housing pigeons. In the loft, they see their surroundings for the first time, whether it be the British hills, American heartland, or the woodlands of Continental Europe. Soldiers were encouraged to handle the young pigeons daily, which trained the pigeons to become accustomed and comfortable with their human handlers.<sup>13</sup> When the time for flight training came about, the pigeons were allowed and trained to fly more miles away from their home loft day by day. Due to the homing pigeons instincts and intelligence they were extremely talented at finding home. Pigeoneers were instructed to feed the pigeons on light rations before a training flight, thus using the bird's appetite as an additional form of encouragement to return home. To increase the distances pigeon could fly, the pigeoneers released them, depending on their age, between 75 and a couple hundred miles away from their home loft. The pigeoneers simply had to wait for their pigeon comrades to return.

During these stages of training, pigeoneers often faced an annoying adversary—civilians. Especially in the United States and Britain, it was not uncommon for civilians to shoot the pigeons-in-training en route back to their home lofts. Civilians did this because they unfortunately thought pigeons were a nuisance. It became so problematic that both the British and American governments placed heavy fines for shooting pigeons serving the military. Newspapers also advocated against the shooting of military homing pigeons, saying that the death of each military pigeon at civilian hands was damaging to the war effort and criminal. A 1918 article of the *San Francisco Chronical* described Congress passing a law that included “maximum penalty of \$100 fine and six months imprisonment for killing Government pigeons.”<sup>14</sup>

If the pigeons did not happen to be shot by the civilians, they began advanced training. This step consisted of the pigeon being trained to now use mobile lofts. This was perhaps the most important part of training because it was the mobile lofts most commonly used at the front.

---

<sup>12</sup> U.S. War Department, *The Homing Pigeon: Care and Training for Military Purposes* (Washington, D.C.: Washington Government Printing Office, 1920), 11-12.

<sup>13</sup> U.S. War Department, *The Homing Pigeon*, 12.

<sup>14</sup> “Protection of Homing Pigeon US Problem,” *San Francisco Chronicle*, May 31, 1918.



They served the same function as home lofts did for the pigeons but with the added difficulty of being moved, often weekly, from place to place. Training began by changing the location of the mobile loft little by little. The pigeons were released miles away and expected to return to the mobile loft. Once this stage of training was mastered, pigeons were then ready for war.<sup>15</sup> In the case of American pigeons, this meant traveling overseas. In December 1917, the *New York Times* noted that “4,000 young birds are being shipped each month to France.”<sup>16</sup>

Just as important as the pigeons themselves were the men who handled them. The majority of the personnel that entered the Pigeon Service, regardless of their nation, had backgrounds raising pigeons. Soldiers in the Pigeon Service were given unique ranks, such as Chief Pigeoneer and Loft Master. The requirements for these two ranks included “leadership material,” “homing pigeon expert,” and “homing pigeon fancier.”<sup>17</sup> Even the mechanics who maintained pigeon lofts and the vehicles that transported them were to preferably have some sort of pigeon background. On the front, pigeons were distributed in a specific format. At least one mobile loft with pigeon personnel was stationed with a single division. After formal assignment to a division, additional men were added to the pigeoneer personnel serving the loft. They were drawn from the regular soldiers in the division who would take the pigeons into battle. Along with their rifles, these men would enter combat with pigeons inside wicker baskets on their backs. These baskets could hold several pigeons at once. While these new additional men did not come from a pigeon-based background, they were efficiently trained by the pigeoneers at the lofts in basic pigeon care, release of pigeons for flight, and the writing and fastening of messages to a pigeon’s leg. Pigeoneers in the army, navy, and air corps were instructed to write clear, complete, and brief messages. The messages, once written, were then inserted into a small metallic cylinder attached to the pigeon’s leg. With this last step of training of both bird and man complete, they were ready to enter combat.<sup>18</sup>

The majority of pigeons that served in the First World War served in a land-based army, and army life was particularly hazardous. Countless pigeons were killed by enemy artillery fire.

---

<sup>15</sup> U.S. War Department, *The Homing Pigeon: Care and Training for Military Purposes* (Washington, D.C.: Washington Government Printing Office, 1920), 27.

<sup>16</sup> “Poultry Show Tomorrow: Garden Being Prepared for Annual Exhibit of Feathered Tribe,” *New York Times*, December 27, 1917.

<sup>17</sup> U.S. War Department, *Personnel Specifications: Signal Corps: Field Signal Battalion, Telegraph Battalion, Pigeon Company* (Washington, D.C.: Adjutant General’s Office, 1918), 20-23.

<sup>18</sup> U.S. War Department, *The Homing Pigeon: Care and Training for Military Purposes* (Washington, D.C.: Washington Government Printing Office, 1920), 43.

Pigeons were also exposed to the horrors of gas-warfare. While most of the pigeons saw service with infantry, they were also utilized by cavalry, artillery, and even tank units. Despite these calamitous obstacles, army pigeons relayed accurate information from the front lines back to division headquarters in record time.

Perhaps the most well-known army pigeon from the First World War was Cher Ami. He was a British-born male homing pigeon in the American Pigeon Service and attached to a battalion of the 77th Division of the American Expeditionary Force. In the midst of battle in 1918, the battalion, commanded by Major Charles Whittlesey, advanced too far and became entrapped by the enemy. As his battalion became whittled down by enemy fire and fatigue, Major Whittlesey desperately sent requests for help, using seven of his eight pigeons. The German gunfire and artillery shrapnel was so thick that all seven of these pigeons fell dead or mortally wounded. In addition to the Germans, the New York battalion also came under fire from friendly artillery. Major Whittlesey, down to his last pigeon, Cher Ami, desperately sent a message to cease the friendly fire. After initial release, Cher Ami, hesitant to enter the hail of German firepower, perched on a tree instead of flying to the home loft. Frustrated, Major Whittlesey and a few men attempted to spook the pigeon to do his duty. Soon, Cher Ami's homing instinct kicked in and he entered the fray. Not long into the flight, he was struck by shrapnel. Cher Ami flapped on, becoming a literal bloody, flying mess. He reached his home loft in 25 minutes, covering a distance of nearly 24 miles. Because of Cher Ami, many men of the "lost battalion" were saved from certain death. With a torn breast and nearly severed leg, he delivered Major Whittlesey's message. For his efforts, Cher Ami was awarded the Croix de Guerre.<sup>19</sup>

Another pigeon, named Mocker, was recognized for providing valuable service. During battle on September 12, 1918, a message containing the coordinates of German gun emplacements was attached to Mocker's leg. As he flew back towards his loft to relay the information to American artillery, he was severely wounded. Despite suffering several gunshot wounds and a missing eye, Mocker shocked his handlers by finding his loft in good time, successfully accomplishing his mission. Surviving his wounds, Mocker was awarded the Croix de Guerre by France and given a Distinguished Service Cross by the Americans.<sup>20</sup>

---

<sup>19</sup> Robert Lubow, *The War Animals* (Garden City, NY: Doubleday & Company, Inc., 1977), 30-31.

<sup>20</sup> Walter Harter, *Feathered Heroes: Pigeons from Ancient Times to Now* (New York, NY: Criterion Books, 1968), 47.

French army pigeons became famous for their service in the battle of Verdun. One such pigeon delivered a message stating “We are undergoing a devastating gas attack. This is my last pigeon.”<sup>21</sup> The pigeon flew through clouds of mustard gas and, despite its lungs being severely eaten away, managed to return to its loft with the message. One French pigeon that emerged from the hell that was Verdun was awarded the Croix de Guerre and another was awarded the Legion d’Honneur. Newspapers also took notice of brave pigeons at Verdun. A 1917 *San Francisco Chronicle* article claimed that German artillery totally destroyed wireless communication and that the French soldiers of Verdun were “saved only by delicate little creatures being thrown into the breach—the cooing pigeons.”<sup>22</sup>

Another amazing example was the homing pigeon named President Wilson. He was a pigeon who served in the American Expeditionary Force’s new tank corps. Soon after being released from his tank with message in tow, President Wilson became severely wounded. After pushing through a dense fog, President Wilson found his home loft, where just outside its entrance, he collapsed out of sheer exhaustion and blood loss from a missing leg. Pigeoneers found him on the ground with the message still attached to his remaining leg. President Wilson was saved due to the gentle veterinary care provided by his handlers.<sup>23</sup>

Pigeons notably saved sailors and airmen as well. The main mission for naval and air force pigeons was to relay the location of sinking ships, seaplanes, and shot-down fighter planes. 717 messages were delivered to Britain alone by pigeons from planes downed at sea and sinking ships.<sup>24</sup> One famous example was a pigeon named Crisp. Crisp was a pigeon serving on the navy trawler *Nelson* when it was attacked and left severely disabled by a German U-boat. The mortally wounded captain scribbled out a message pleading for help and sent it off with Crisp. The pigeon successfully managed to deliver the message and the surviving crew of the *Nelson* were located and saved.<sup>25</sup>

Each seaplane serving the British Air Corps carried one to two pigeons kept in a box high up in the fuselage to prevent them from drowning. The pigeons were a last hope for airmen downed at sea to be rescued. One British homing pigeon, named Pilot’s Luck, managed to save

---

<sup>21</sup> Marion B. Cothren, *Pigeon Heroes: Birds of War and Messengers of Peace* (New York, NY: Coward-McCann, Inc., 1944), 21.

<sup>22</sup> Sterling Heilig, “Pigeons and Dogs Save French Front at Verdun during Days of Terror,” *San Francisco Chronicle*, November 25, 1917.

<sup>23</sup> Marion B. Cothren, *Pigeon Heroes: Birds of War and Messengers of Peace* (New York, NY: Coward-McCann, Inc., 1944), 27.

<sup>24</sup> Robert Lubow, *The War Animals* (Garden City, NY: Doubleday & Company, Inc., 1977), 29.

<sup>25</sup> A. H. Osman, *Pigeons in the Great War: A Complete History of the Carrier-Pigeon Service during the Great War, 1914-1918* (London, U.K.: The Racing Pigeon Publishing Co., Ltd., 1928), 21.

his entire seaplane crew. After crashing at sea on a freezing November evening, one airman scrawled “Airship foundered twenty miles seaward,” on a message attached to the leg of Pilot’s Luck. Despite being soaking wet and freezing, Pilot’s Luck took off from the sinking wreckage, soon finding his home loft. Because of weather conditions and the darkness of night, it took 11 hours for rescuers to find the wrecked seaplane. Although nearly frozen to death, all six airmen were pulled from the sea alive, thanks to Pilot’s Luck.<sup>26</sup>

The majority of pigeons did not receive accolades for their service. However, this did not mean their service went unnoticed. The men they served learned to appreciate and praise their winged heroes. Pigeons and pigeoneers received gratitude’s from privates to generals. American General John Pershing, a man once critical of pigeon usage by the military, even praised their service. At the conclusion of the war in 1918, both men and pigeons returned home. In the United States, pigeons were paraded alongside soldiers as heroes of the war. Some pigeons, like Cher Ami and President Wilson, were preserved via taxidermy and are currently kept the National Smithsonian Museum in Washington, D.C. for all to see. Britain and France commemorated the service of their pigeons by dedicating numerous monuments to them across the battlefields of Europe, while pigeons donated by civilians were returned to their owners by a thankful government. Pigeons hatched and raised by the military during the war remained government property. The fate of German pigeons was somewhat less glamorous, yet intriguing. Captured German pigeons were paraded and exhibited as mock prisoners of war. German pigeons were also put to work to breed more pigeons for the American Signal Corps. An example of such is the captured German pigeon appropriately named Kaiser. Kaiser, allowed to keep his leg band stamped with the German Imperial Crown, produced many offspring that would serve the United States Signal Corps. Some of his direct descendants even served in the American Signal Corps against Germany in World War II.<sup>27</sup>

It is hard to say exactly how many pigeons served in the First World War. It is possible that as many as 500,000 pigeons served on all fronts during the conflict. It is important to remember that the pigeons, civilians, pigeoneers, and training were equally important. Because of them, pigeons managed to save the lives of thousands of soldiers. The men who served in or with the Pigeon Service were pushed to the ultimate test under combat. Whether it was on a

---

<sup>26</sup> Marion B. Cothren, *Pigeon Heroes: Birds of War and Messengers of Peace* (New York, NY: Coward-McCann, Inc., 1944), 23.

<sup>27</sup> Marion B. Cothren, *Pigeon Heroes: Birds of War and Messengers of Peace* (New York, NY: Coward-McCann, Inc., 1944), 49.

sinking ship sending out a last SOS or an infantry battalion surrounded by the enemy, the pigeons and pigeoneers were there as a last hope. Despite the challenges of war, the pigeons had a success rate of 95 percent. The pigeoneers devotedly respected and cared for their pigeons just as a cavalryman genuinely cared for his horse. While they may have just seemed like regular birds to other soldiers, the pigeoneers knew their birds were special. Many pigeoneers sent individual pigeons they raised into battle. Thousands of pigeons died or were horribly mutilated by battle while doing their job. Pigeons and the pigeoneers “came through with messages of weal and woe; came through when shattered troops were crying for aid—when every other line of communication had failed.”<sup>28</sup>

---

<sup>28</sup>Robert Lubow, *The War Animals* (Garden City, NY: Doubleday & Company, Inc., 1977), 30.

### Bibliography

Cooper, Jilly. *Animals in War*. London, U.K.: Corgi Books, 2000.

Cothren, Marion B. *Pigeon Heroes: Birds of War and Messengers of Peace*. New York, NY: Coward-McCann, Inc., 1944.

Editors of the Army Times. *A History of the U.S. Signal Corps*. New York, NY: G. P. Putnam's Sons, 1961.

Harfield, Alan. *Pigeon to Packhorse: The Illustrated Story of Animals in Army Communications*. Chippenham, U.K.: Picton Publishing, 1989.

Harter, Walter. *Feathered Heroes: Pigeons from Ancient Times to Now*. New York, NY: Criterion Books, 1968.

Lubow, Robert. *The War Animals*. Garden City, NY: Doubleday & Company, Inc., 1977.

### Primary Sources

“Carrier Pigeons an Aid to Preparedness.” *New York Times*, July 16, 1916.

Debose, Clarence. “Squab Production Urged by Government.” *American Squab Journal* 6, no. 1 (1917): 8-9.

Osman, A. H. *Pigeons in the Great War: A Complete History of the Carrier-Pigeon Service during the Great War, 1914-1918*. London, U.K.: The Racing Pigeon Publishing Co., Ltd., 1928.

“Poultry Show Tomorrow: Garden Being Prepared for Annual Exhibit of Feathered Tribe.” *New York Times*, December 27, 1917.

“Protection of Homing Pigeon US Problem.” *San Francisco Chronicle*, May 31, 1918.

Sterling Heilig. “Pigeons and Dogs Save French Front at Verdun during Days of Terror.” *San Francisco Chronicle*, November 25, 1917.

War Department, U.S. *The Homing Pigeon: Care and Training for Military Purposes*. Washington, D.C.: Washington Government Printing Office, 1920.

War Department U.S. *Personnel Specifications: Signal Corps: Field Signal Battalion, Telegraph Battalion, Pigeon Company*. Washington, D.C.: Adjutant General's Office, 1918.