Exhibition Pilots 1909-1914

From Aerial Exhibition to War Clouds

James Tewes

HISTORY 489

Capstone Advisor:

Dr. Patricia Turner

Cooperating Professor:

Dr. James Oberly

Table of Contents

ABSTRACT

The focus of this paper is the role that early exhibition pilots had on changing the ambivalence that Americans experienced in the early twentieth century. This paper supports the argument that pre-existing doubt and ambivalence towards this new technology changed relatively quickly between1909 and 1914 while exhibition pilots plied their trade across the United States and Europe. From 1903 through 1908 there was considerable disbelief in what the Wrights had achieved. As exhibition pilots took to the air around the nation they changed peoples belief in this technology by proving it was valid and reliable. The end results of this changing attitude towards flying can be found in the support of Congressional approval for more government funding in this new field. Members of Congress helped lead to greater interactions in early flight training and in the early development of military use of this new technology by approving congressional bills for funding. Subsequent hearings to support spending on military aviation stand as examples of how the public perception of aviation changed from skepticism to acceptance of early aviation. Military aviation came to be viewed as necessary rather than wasteful. These changes also set the stage for early exhibition pilots to play a vital role in training America's earliest military pilots and the subsequent growth military aviation has undergone.

Introduction

In the present day, it is easy for society to imagine the wonders and horrors aviation has brought to our world. From 1903 through 1909, there was considerable disbelief in what the Wrights had achieved. The exhibition flyers who flew in the early days of aviation between 1909 and 1914 served a dual purpose. One purpose was to combat doubt in this new technological wonder and to prove that human mastery of the air was a reality. Their second purpose was to promote the practical possibilities of aviation in the public realm. Practical possibilities included both civilian and military uses for this new technology. Exhibition pilots helped early aviation move through various stages in the public's eye. Initial disbelief waned and was replaced by a notion of aviation as a sporting event that could be used as a promotional tool. This paper explores the changes that early exhibition pilots helped bring about in public opinion about the legitimacy of early aviation. These changes eventually manifested in calls for more spending and regulation in support of this new technology. By 1912 the public's perception of early aviation had been sufficiently influenced by the exploits of the early exhibition pilots. A growing number of congressional bills and subsequent hearings to support spending on military aviation stand as examples of how the public perception changed from skepticism to acceptance of early aviation. These changes also set the stage for early exhibition pilots to play a vital role in training America's earliest military pilots.

Using primary sources such as newspapers, the popular media of this period, this paper will focus on the earliest examples of exhibition pilots and the impact they made in the public's mind. Next, the focus will shift to exploring some of the earliest exploits of exhibition pilots who flew for either the Wright Exhibition Team or the Curtiss Exhibition Team. Primary and secondary sources will be employed for this examination. This paper will attempt to illustrate

how the public's ambivalence towards this new technology changed from doubt to acceptance. Public opinion changed quickly once the public began to recognize the validity in this technology. Finally, this paper will examine congressional hearings that asked for more funding for the military in this new field as well as the long range affects that this had on attracting exhibition pilots to serve as instructors for early American military aviation. Primary sources such as congressional hearings and newspaper articles will be employed for this research. Primary and secondary sources of statistical information on how the federal government began to monitor this new field will also be used for support. The conclusion will revolve around a correlation showing that the call for, and ultimate acceptance of, more funding was a significant change in the public's acceptance of this new field. This change became more visible as early as 1912 and manifested itself with calls for more military spending on aviation and its development. Exhibition pilots also had the effect of awakening the public's imagination and, in some cases, fears. These fears were evident in the suspicious eye often cast on European spending and development of this technology.

The exhibition flyers who flew between 1909 and 1914 served multiple purposes. One purpose was to challenge doubt in this new technological wonder and prove that human mastery of the air was a reality. Second, exhibition pilots promoted the practical possibilities of aviation in the public's view. Third, exhibition pilots served as a conduit for early flight training and helped foster dialogue and experimentation within this new technology. By doing this they also inspired practical possibilities of both civilian and military uses for this new technology. Exhibition pilots helped to move aviation through various stages of maturation in the public's attitude. Initial disbelief waned and was replaced by a notion of aviation as a sporting event that had potential as a promotional tool and even as a weapon of war. Early exhibition pilots helped

bring about important changes in public opinion. This change manifested itself in experiments in using early aviation in promotional roles and experiments in developing aircraft for military purposes. Eventually, they evolved to become some of the first instructors for early U.S. military aviation. By 1912, the public's perception of early aviation had been sufficiently influenced by the exploits of the early exhibition pilots to the point where Congressional hearings and bills submitted to support spending on military aviation were not seen as wasteful but rather necessary. These serve as examples of a change in the public's perceptions and acceptance of early aviation. The evidence of these changes can be found in newspaper accounts of the exploits various exhibition flyers as well as in the political culture of both American and European society. Some evidence suggests that a combination of influences of exhibition pilots and the proliferation of early flying clubs along with a wary eye on Europe's funding of early aviation helped to promote a sufficient change in the American public opinion towards aviation prior to the First World War.

Historiography: Going to the Sources

In analyzing the secondary sources associated with exhibition flyers, I realized that there were no real groundbreaking or classic texts yet available. There are, however, a number of texts that do cover this topic while they are discussing the larger history of aviation. Out of all the sources encountered, five of them stood out because each of them used a wealth of primary and secondary sources which were useful to me as I examined this topic further. Early exhibition flyers faced a public often imbued with doubt and ambivalence toward their chosen profession. It is important to try and understand more about the early crowds which often viewed the exploits of these early pilots. As the exploits of this first generation of pilots became widely known and observed firsthand, doubt and ambivalence began change to belief and affirmation in the wonders of this new technology.

An excellent text for this is A. Bowdoin Van Riper's work *Imagining Flight: Aviation and Popular Culture.* This text was important because it explors the cultural beliefs that exhibition pilots were dealing with when they flew. Van Riper's argument supports the statement of a public that was not entirely ready to believe in flight. Van Riper lays out two different visions or forecasts of powered flight during the turn of the century. The first is called an "insiders forecast" and explains the point of view of those who were most familiar with aviation in the early 1900.[1] The second is called the "outsiders forecast" and was a point of view often held by more of the general public.[2] Within the second group, the "technical" or working knowledge of flight was considerably less than that of the first group.

The second group of people who had an "outsiders" knowledge of flight were much slower and much more skeptical of the success of people such as the Wrights. Many within this

[1] Van Riper, *Imagining Flight Aviation and Popular Culture,* 13-18.
[2] Ibid., 19.

"outsiders" group were largely unaware of the success of the Wrights.[3] Van Riper points out that this group of people remained skeptical yet continued to dream of the possibilites of flight. Some in this second group envisioned a world where flying machines made war obsolete and nations grew closer together. In this imagined world, nationalism and trade tariffs were well on their way to being antiquated concepts. People and goods could move freely about the world with reasonable cost and saftey.[4] This second group of people did not start to take the accomplishments of the Wrights or Curtiss seriously until late 1908 and early 1909. Once the reality of flight began gaining acceptance this group of people enthusitically embraced all the practical and impractical possiblities that this new technology offered.[5]

Van Ripper points to an interesting paradigm shift between these two groups. The more skeptical group of persons classified as having an "outsiders knowedge" of flight began leading the charge in advancement and ideas of what this technology could offer. On the other side of this coin, those who possessed an "insiders knowledge" of what was truly capable in the realm of manned flight began to call for slow, scientific advancement.[6]

The central argument of Roger E. Bilstein *Flight in America 1900-1983: From the Wrights to the Astronauts* is that the belief in flight has influenced America and its social and economical development in various ways. His discussion starts with the utter disbelief that people had towards the Wrights. Their idea of manned flight lasted largely until 1908. Bilstein alludes to the general dismissive attitudes that the public had towards flight between 1903 and 1908. This author elaborates on the belief held by most of "those in the know" from this early era who believed in human flight. This group consisted of those who had been seriously studying the

[3] Van Riper, *Imagining Flight Aviation and Popular Culture*, 13.
[4] Ibid., 28-29.
[5] Ibid., 14.
[6] Ibid., 27.

problem of flight, and felt it was just a matter of time before successful powered flight would happen.[7]

Bilstein alludes to possible reasons why the Wrights and others started using exhibition pilots and contracting exhibition flights. He suggests it was ultimately an attempt to gain recognition and credibility for their achievement. Orville and Wilbur systematically plotted out a road map of development that would help their invention gain acceptance within the American popular consciousness. Military operations would be first, followed by exploration and transportation. Lastly would be aviation for sport and entertainment. In reality, this is the exact opposite of the way the general public came to believe in and eventually support early aviation development. Entertainment or exhibition flying actually served to popularize early aviation before military use.

Bilstein argues that the American public perception of flight remained ambivalent for many reasons, the most influential of which was the failure of Samuel Langley and his Aerodrome just weeks before the Wright's success.[8] The Wrights faced an issue of publicizing their success; despite credible witnesses and even photos, many did not believe them. It appeared that early aviation needed to be promoted to gain legitimacy.

The Wright's found a lack of interest from the military. Their claim to being the sole owners of the secret of flight faced serious challenges. They began to look for other sources of revenue for their invention. They found a need to legitimize theit invention for the public. For example, in 1909 the Wrights established a team of exhibition pilots and in 1910, this was followed by the Curtiss exhibition team. Both the Wright and Curtiss companies started exhibition companies to promote their aircraft and generate needed revenue for their fledgling

[7] Bilstein, *Flight In America 1900-1983*, 15.
[8] Ibid., 12.

companies. Between 1909 and 1911, the Wright Exhibition Company grossed close to one million dollars annually.[9] It appears that turn of the century audiences had a great appetite to see this new invention for themselves and would pay handsomely for it. According to Bilstein, the principal role of the exhibition flyers in this early era of flight according to Bilstein was to encourage sales of aircraft and, in turn, help build the infrastructure needed to support these machines. They also flew in defiance of the belief that man had not conquered the air. In flying around the United States and even parts of Canada, these early exhibition flyers wetted the public's appetite for flight and planted the seeds for future possibilities of air travel and transportation of both goods and people.[10]

Laurence Goldstein's work *The Flying Machine & Modern Literature* takes a critical look at the works of Jules Verne and H.G. Wells. Goldstein's central argument is about the likely probability that this new technology of flying machines could play in warfare. Goldstein's examination of the works of Verne and Wells emphasizes a strong correlation between popular literature of the day and public ambivalence towards flight. Around the turn of the century, the possibilities of large airships seemed somewhat limitless in the public's mind, where flying machines were seen as the by-prouct of a mind that was less than sound. What if, in a time of war, these machines were refined for other means? H.G. Wells work *The War in the Air* pays heed to this possibility. This text plays off a persistent fear that England had of an attack. The invention of the airship and other flying machines raised troubling new possibilites. In this story, the hero Bert Smallways is unwillingly forced to watch as a fleet of German airships attack and utterly destroys New York city.[11] This fictional account of flying machines destroying a city

[9] Bilstein, *Flight In America 1900-1983*, 17-19.
[10] Ibid., 26-28.
[11] Goldstein, *The Flying Machine & Modern Literature,* 66-67.

seemed too impossible to be real. This feeling of impossibility had the effect of dimming the legitimate possibility of flight in world oppinion.

Was all of this fiction just to much to handle for the turn of the century mind? When Goldstein examined the worry and skepticism found among people in Europe and American newspapers at the time, he was inclined to think that most people generally disbelieved in powered flight. However, the actions of European governments at the Hague Conference of 1899 and 1907 are good examples of the fear European nations had about airships that suggests otherwise.[12]

Authors Lloyd Morris and Kendall Smith work *Ceiling Unlimited: The Story of American Aviation From Kitty Hawk to Supersonics* is influental to this topic because it looks at aviation and its development through the early 1950s. This text has a shorter version of aviation history because it was written almost fifty years ago. It has a more in depth examination of the era being specificlly examined. Morris and Smith do an excellent job of examining the role of public doubt and how the Langley failure affected availability of public funds for early aviation.[13] They also do an excellent job of examining the era of the exhibition flyers more than any other source explored. This text explored the growth of the popularity of exhibition events in Europe and the United States. It also explored the early growth of both the Wright and Curtiss exhibition companies. The most important use that this text served was to suggest other roles early exhibition pilots adopted. The most important of which was as instructors for some of the American military's first instructors.[14]

[12] Goldstein, *The Flying Machine & Modern Literature,* 65.
[13] Morris *Ceiling Unlimited*, 40-41.
[14] Ibid., 93-126.

The final text used was *The Winged Gospel* by Joseph J. Corn. This text was referred to in Roger E. Bilstein work *Flight in America 1900-1983: From the Wrights to the Astronauts,* as well as in A. Bowdoin Van Riper's *Imagining Flight: Aviation and Popular Culture.* Corn focused his own argument on the almost religious ferver that people adopted towards flight once they came to believe in it. He also outlined in detail the doubt that many held in dealing with early flight.[15] Corn points to how some thought that this invention would be the great equalizer for man and nations alike. Even as the hopes of manned flight being able to end all war was destroyed in the dogfights that raged over the Western Front of the First World War, people still did not lose faith and devotion to the possibilities that this technology possesed. [16]

Most importantly, Corn elaborates on the doubts a majority of people in the United States had towards flight beteen the years of 1903 and 1908. He also underlined the significant role that exhibition flyers played in changing this perception.[17] Corn pointed to the U.S. Army and its acceptance of viewing demonstration flights as the starting point in the changing perceptions of flight in the minds of Americans. Perhaps the most inportant event outside of December 17th, 1903 for the Wrights and early avaiation in general was the date of Sepetember 3rd , 1908. When thousands of people showed up to see this new-fangled flying machine with their own eyes in Ft. Myer, Virginia, here aviation came to the American masses in a significant way. Even the most hard-boiled skeptic could be found walking around the grounds of the U.S. Army Signal Core mumbling something to the effect of "My God" or even, "I would not have believed it if I had not seen it with my own eyes." [18] It was this two week span of time that when the Wrights were

[15] Corn, *The Winged Gospel,* 9-10.
[16] Ibid., 12.
[17] Ibid.,10.
[18] Ibid., 4.

given almost all of their dues. Years of doubt began to disappear and the fictional accounts of H.G. Wells and Jules Verne versions flying machines were changed.

The vision of fleets of giant airships raining down death started to fade. Slowly, an idea of a different sort of flying machine replaced them. However, the idea of using this as a weapon did not disappear. It was slow to form in the beginning, but Corn pointed to the fact that the Army was interested in using this invention as an observation tool and suggests this was an indication that aircraft and flight always had an implied military use. Even after the popular success of 1908 for both the Wrights and Curtiss, many could not believe that flight was possible until they had seen it with their own eyes. Corn reinforced this belief that early skeptics often had in the legitimacy of people saying that these new machines could take humanity aloft. He further suggested that for some people legitimacy remained a problem well into the nineteen-teens. [19]

[19] Corn, *The Winged Gospel,* 6.

Attitudes and Angst about Human Flight

The beginning of civilization's infatuation with flight is based in legend. Greek mythology tells the story of Pegasus, a flying horse, and the messenger god Hermes with his winged sandals flying throughout the world to deliver messages of the gods. The Valkyries of the Norse myths traveled through the air on winged horses. The ancient Greek myth of Icarus tells the tale of how, with wings made of wax and feathers, Icarus escapes from captivity. But Icarus flew too close to the sun, his wings melted, and he fell to his death. In these early writings we see the beginning of long lasting perceptions about human flight as myth and fancy.[20]

In the late 1700s, experiments in France proved that hot air balloons were possible but still dangerous. By the mid 1800s the state of flight was literally full of hot air and other dangerous gases. Aerial ascension by balloon became more popular though balloons proved to be dangerous due to the fires and gasses involved. This danger was met with new and innovative designs that eventually spurred the development of rigid balloons or airships. These were often held aloft with gas filled bags. By the time of the American Civil War, balloons had evolved to a mediocre success as a tool for spotting enemy troop movements. Spotting balloons were cumbersome and time consuming to use. They were marginally useful and in some cases was the first time the general public had an introduction to lighter than air machines being used to lift humans into the skies.[21]

In literature, a new genre of fictional writing came to be immensely popular during the late nineteenth and early twentieth centuries. It was called science fiction and it easily co-opted the idea of flight. Writers such as H.G. Wells and Jules Verne took ideas associated with flight to new and terrifying possibilities within the literate populations of the world. In fictional works

[20] A. Bowden Van Riper, *Imagining Flight: Aviation and Popular Culture,* 6-8.
[21] Rodger E. Bilstein, *Flight In America 1900-1983: From the Wrights to the Astronauts,* 5-7.

by Vern such as *Clipper of the Clouds* from 1885 and its sequel *Master of the World* in 1904 and Wells work *The War in the Air* of 1908 hundreds of thousands of people were introduced to fantastic possibilities of a not too distant future with flying machines raining down death and destruction.[22] These works are significant because they represent a persistent understanding that if a suitable and reliable flying machine could ever be developed, it would not be much harder to make it a weapons platform. Having a weapon that could go anywhere at any time was a powerful appeal to most industrialized nations.

For early readers, the scenarios described by Wells and Verne were not such a fantastic impossibility. At the time, the idea of massive flying machines seemed fantastic but was not an impossible stretch of reality due to the evolving airship technology that was occurring throughout Europe. In fact, fear was very strong among many European nations and spurred the development of treaties among European nations not to arm the new designs for airships. Conferences such as the Hague Conferences of 1899 and 1907 are good examples of a persistent fear European nations had of this technology.[23] Many felt it was more a matter of when, not if, these machines could be constructed.[24] At the turn of the century many scientific journals and magazines such as *Scientific American* and *Century Magazine* had articles about flight on a regular basis for both American and European audiences. These articles debated the possibility of flight and what possible form these flying machines might take. Debates included whether wings would be fixed or be movable like a birds wing.[25] As debates raged, other inventors such as the Wright's were more interested in practical, scientific development of flying machines. The

[22] Laurence Goldstein, *The Flying Machine and Modern Literature,* 64-73.
[23] Ibid.
[24] Van Riper, *Imagining Flight: Aviation and Popular Culture,* 7-8.
[25] Rodger D Launius. "The Wright Brothers, Government Support For Aernautical Research, And the Evolution of Flight." In *Reconsidering a Century of Flight*, 51-60.

Wrights were part of a growing number of early individuals who were engaged in employing science to crack the mystery of flight. This tradition began as far back as the 15th century with Leonardo da Vinci and in the latter 1800s, it continued with pioneers such as American Civil Engineer Octave Chanute and Germanys Otto Lilienthal's. Their notes on glider experiments and new developments were often published and had an immense influence on people like the Wrights.

The First Experiments in Modern Flight

In the latter half of the 1890s, Samuel P. Langley was developing his Aerodrome while building off accrued information on flight around the turn of the century. His early successes with smaller steam powered models were impressive. One of them actually flew over four thousand feet at an average speed of 20 miles per hour as early as 1896.[26] In December of 1903 it looked as if Langley was going to be the first into the air with a manned flying machine. The odds of success were in his favor. Just after the turn of the century, Langley had secured a $50,000 grant from the War Department with help from Theodore Roosevelt. Roosevelt saw the military potential for aircraft in the role of scouting and was eager to help make this potential a reality. However, due to many design flaws of the airframe, Langley's machine crashed twice. It simply did not work. Many in Congress felt that the grant was wasted. Langley's failure was unjustly ridiculed in many of the national newspapers of the day. *The Chicago Tribune* and *The Washington Post* offered harsh criticism of Langley's ill fated aerodrome.[27] His final failure opened the flood gates of criticism for inventors trying to overcome gravity. The majority of literate Americans, if they read any newspaper accounts of Langley's failed attempt, were reading of a fool's errand about a crazy man trying to fly. Criticism left lasting marks on the

[26] Bilstein, *Flight In America* 1900-1983, 9-10.
[27] Ibid 13-14.

public's image of flight. Failures such as Langley's reinforced a lasting skepticism of man ever achieving flight. This skepticism was so strong that even after December 17, 1903 when the Wright Brothers had flown their own machine under its own power, many accounts of their achievement were reported on incorrectly or were ignored all together. This can be seen in the example of an article in the *Newark Daily Advocate* from December 28th 1903.[28] This article incorrectly reported that the Wrights machine used one of its two propellers to stay aloft and the other for forward momentum. Despite the fact that Orville and Wilbur Wright filed a detailed account of their success with the Associated Press on January 5, 1904, and had other verified firsthand accounts, their success was still reported on incorrectly and was often buried within papers if it was included at all.[29]

[28] Machine That Flies, *Newark Daily Advocate*, December 28, 1903.
[29] Peter l. Jakab and Rick Young. *The Published Writings of Wilbur And Orville Wright,* 14-16.

They Did What? 1903-1908

Today it is easy for us to take for granted how common flight is in our modern world, though it is important to remember this was not always the case. From 1903 through 1908 there was considerable disbelief in what the Wrights had achieved. Newspaper reports of other failed attempts at flight and popular fiction had predisposed the public's perception of manned flight. Initial reports on the Wrights' success were believed to be exaggerated or just wrong. Many reports were often ignored as slipshod reporting or just hearsay. For many people, it required seeing these "flying machines" in person before they would believe humanity had conquered the air.[30]

Presently, it is easy to appreciate what air travel does for today's society. Today international and domestic air travel is common. It is so common and so regulated that people readily accept that "air travel is safer than travel by automobile".[31] Judging by the annual traffic deaths worldwide versus the annual deaths attributed to air travel there is some validity to this statistic.[32] Today we also take advantage of international package delivery and "next day" delivery through any number of package handling services. Perhaps the most awe-inspiring show of air technology to date can be found in the military service.

In the first years after the Wrights succeeded in sustained flight, many people were reluctant to believe in what they had achieved. The utter disbelief that people had towards the Wrights and the idea of manned flight largely held fast until 1908.[33] Between 1903 and 1908, word of what the Wrights had achieved was largely dismissed as fiction and hearsay despite credible reports from some firsthand witnesses. What accounted for this reluctance to believe?

---

[30] Morris, *Ceiling Unlimited*, 42.
[31] Perrow, *Normal Accidents: Living With High Risk Technologies* 125-27.
[32] Ibid.
[33] Bilstein, *Flight In America,* 12-14.

It appears to have stemmed from various sources. Two of the most influential sources appear to have been contemporary literature and newspapers. Literature from "science fiction" pioneers such as Jules Verne and H.G. Wells depicted flying machines as too fantastic to be real. These works played off a notion that while airships may be possible, winged aircraft were just unfeasible. [34] This is understandable when exploring the known state of flight and flying machines with which these authors may have been familiar. Airships, although marginally successful, appeared to have great potential. If humanity could ever work out persistent technological issues associated with them, their potential seemed limitless.

One of the most widely covered events just prior to the Wright Brothers' success was that of the Langley Aerodrome.[35] However, when a full scale example of his machine failed to carry a human aloft on two different occasions, the public's skepticism was dramatically reinforced[36]. In the years immediately following the Wrights' success, public opinion regarding flying was divided. Most of the public had little understanding about the state of aeronautics in the latter half of the nineteenth and early twentieth century's.[37]

Skepticism was fed by the inaccurate reports of successful flying machines. Unfortunately, early coverage of the Wrights' achievements were also incorrect. For example the Ohio newspaper, the *Athens Messenger and Herald* from January 14th 1904 in a short report stated that the Wrights' were successful. However it had them flying at an amazing height of one thousand feet for well over a mile.[38] In reality the first flight of the Wrights was less than

[34] Bilstein, *Flight In America*, 12-14.
[35] Launius, *Reconsidering a Century of Flight*, 53-56.
[36] Ibid.; Flying Machine Fiasco, *New York Times,* October 8,1903.
[37] Van Riper, *Imagining Flight Aviation and Popular Culture*, 13-26.
[38] Dayton, *Athens Messenger and Herald*, January 14, 1904.

twelve feet in height and not much longer than a one hundered and fifty feet.[39] Worse yet, papers as late as 1906 were still actually reporting on this event incorectly this can be seen in newspapers such as the *Van Wert Daily Bulletin* of Ohio in 1906 incorrectly reported about the way the Wright's craft functioned.[40] These inaccuracies can also be seen in coverage from larger papers like the *New York Times* as late as 1906.[41]

Skepticism was encouraged in the press through the summers of 1904 and 1905. During this time the Wrights decided to test and perfect their new aeroplane near their home town of Dayton, Ohio. They moved their experiments to Huffman Prairie just outside of Dayton.[42] While in residence here the Wrights often flew in open view of the public and even the local interurban train line that passed by them. The Wrights' did not conduct these tests in secret; however, they did not openly advertise them either. The local press often missed the chance to report on what the Wrights were doing and in some cases, when a reporter was present, the Wrights' were not flying due to weather conditions or mechanical issues. Despite growing first-hand accounts from locals who saw the Wrights flying machine in the air, a lack of coverage caused some in the media to question whether the Wrights' and their flying machine were a story worth persuing.[43]

From 1904 through 1908 the Wrights faced a mixture of skepticism in the public press and growing competion for recognitionfrom other aviation pioneers. Competiton came from two sources. The first was from those who were not successful in replicating the success of flying. This also helped to fuel established skepticism. The other was from others who were successful

[39] Morris, *Ceiling Unlimited,* 46.
[40] Air Navigation Assured, *Van Wert Daily Bulletin*, February 03, 1906.
[41] Another Attempt to Solve Aerial Navigation Problem, *New York Times*, January 7, 1906.
[42] Ibid., 47-49.
[43] Corn, *The Winged Gospel,* 5-7.

in cracking the secret of flight. Glenn Curtiss and Thomas Edison's partnership was the foundation for the Aerial Experiment Association. This cooperative partnership presented a serous threat to the Wright's claims, especially in 1908 with the first successful flight of their own aircraft. When their aircraft, called the June Bug, flew with Curtiss at the controls, the Wrights lost their monopoly on operational flying machines in the United States.[44]

Perhaps the most unusual reason why people failed to believe in what the Wrights had done was that their flying machine did not look like what people thought a successful flying machine should look like. Up until the Wrights had refined the basic problems associated with the theories of lift, airfoils, and control, flying machines had usually been suspended in the air by means of hot air or gas filled bags. These would have some sort of structure mated to them to hold both propulsion and operator. Those who had followed humanity's attempt to fly in the ninteenth century were most familiar with early airships and balloons. However, when the Wrights and their machine appeared, many viewed it as an overgrown child's toy, often equating it with a big box kite.[45] The notion of lift being generated by a properly formed airfoil was not widely understood. A gereral understanding of the principles of flight demanded a need for having the machine somehow suspended in the air.[46] The Wright machine and subsuquent other flying machines simply looked like they would not work given the conventional wisdom of what had appeared to have worked in the past. Again this was often reflected in newspaper coverage of the time. Many reports often attempted to stress the fact that the Wrights machine was

[44] Bilstein, *Flight In America,* 16-17.
[45] Corn, *The Winged Gospel,* 7-8.
[46] Ibid.

different because it lacked gas filled balloons or other previously understood methods of holding flying machiens aloft.[47]

The Wrights, Curtiss, and future exhibition pilots of early aviation proved that this preconceived notion associated with flying machings false. In fact they proved that the earlier notions and examples of airships were effective but the new fixed wing self propeled flying machine was superior. It was more versital, more controalable and better suited for expanding humanity's conquest of the air.[48] Around 1909 those who were initialy skeptical of the achievements of the Wrights began to believe in their succes they took off flying toward a future of humanity with its feet off the ground. Some dreamed of a world where flying machines made war oposliete and where nations grow closer together. In this imaginary world nationalism and trade tariffs were well on their way to becoming antiquated concepts. People and goods could move freely about the world with reasonable cost and saftey.[49]

[47] Another Attempt to Solve Aerial Navigation Problem, *New York Times*, January 7, 1906.; Machine That Flies, *Newark Daily Advocate*, December 28, 1903.; Aerial Navigation Assured, *Newark Daily Advocate*, September 9, 1908.

[48] Morris, *Ceiling Unlimited*, 98.

[49] Van Riper, *Imagining Flight Aviation and Popular Culture,* 13-26.

Changing the Mind of the Public

From 1903 through 1909 there was considerable disbelief in what the Wrights had achieved and an ambivalence towards flight. It was in this environment that the exhibition flights took place. The exhibition flyers who flew from 1909 through 1914 helped to define early aviation as an established, legitimate technology and in doing this they helped to promote the possibilities of aviation in the public's eye.[50] This in turn helped legitimize funding for the early military use of this new technology. The year's between1908 and 1910 were watershed years for early aviation. A number of major events took place. Two events stand out as ones that that would serve to convince the doubting masses. The first was the Wright Brothers delivery of their first aeroplane to the U.S. Army's inventory. The second was the "air show" or aerial exhibition held in Reims, France. These events, aviation received enormous publicity and catapulted early aviators such as Orville and Wilbur Wright and Glenn Curtiss to international fame and promoted the legitimacy of aviation by bringing definitive proof of the possibilities of flight to hundreds of thousands of people.

In the summers of 1908 and 1909, Orville and Wilbur Wright were validated in their pursuit of powered flight.[51] Their tests for the Army were, in themselves, a testament to the growth that this new technology possessed, giving it validity. It allowed the public to see the military potential that it held. Doubt began to fade. The initial test flights for the Army at Ft. Myer, Virginia led to even more successful tests at College Park, Maryland.[52] Initial tests at Fort Myer were a mixed blessing. The Fort Myer tests attracted large crowds of spectators and

[50] Morris, *Ceiling Unlimited*, 117-120.

[51] Allen, Catherine Wallace. "Wright Military Training," Air Power History, 49 no. 4[Winter 2002]: 12-21.

[52] Chenoweth, David R. "Testing the Military Flyer at Fort Myer," Air Power History, 49 no. 4[Winter 2002]: 6.; Aerial Craft May Never Be Used Commercially, Declares Orville Wright, *Washington Post*, Sunday, August 30,1908.

even influential dignitaries such as President Taft and members of his cabinet. These tests also attracted military observers from several foreign countries.[53] Observers from France, Germany, Russia, and even China took careful notes on this new technology. Unfortunately, there was also a tragedy that resulted in the first causality from an airplane crash.[54] Despite this tragic turn of events, aviation had become set in the public's mind as something tangible and in some cases deadly.

In the spring of 1909, the Wrights resumed their tests for the Army with a new flyer and in a new location at College Park, Maryland, just across the Potomac River and Washington, D.C.[55] It was here that the Wrights needed to complete the final requirements for their Army contract. The Wright's had to provide training for two Army officers so that they were to become proficient in all operations of the Army's first aircraft. Wilbur had to wait for the airfield at College Park to be finished before training could begin in earnest. While Wilbur was waiting he played a significant role in the Hudson-Fulton celebration in and around New York City. Wilbur Wright's participation was significant because his flights down the Hudson River and around the Statue of Liberty allowed an estimated one million New Yorkers to witness their first glimpse of a flying machine. The October 6th, 1909 *Washington Post* from stated that "crowds that lined the Jersey shores of the river as well as those watching from the assembled battleships over which he flew gave him a tremendous ovation for his flight."[56] Wilbur's flight in and around New York added to people's familiarity with and appreaciation of flying machines. Magazines such as

[53] Chenoweth, David R. "Testing the Military Flyer at Fort Myer," Air Power History, 49 no. 4[Winter 2002]: 4-11.

[54] Ibid.; 8.

[55] Allen, Catherine Wallace. "Wright Military Training," Air Power History, 49 no. 4[Winter 2002]: 14.

[56] Ibid.,15.

Scientific American from June 1909 show dramatic changes in public perception of this new field and the daring people who pioneered this technology.[57]

Aerial exhibitions and exhibition pilots evolved to serve as emissaries of flight to many thousands of people who were reluctant to believe that humanity could defy gravity. Beginning in 1909 with the Reims Air Meet aerial exhibitions grew in popularity as early pilots began to try and outdo each other by competing for endurance, distance, altitude and speed records. In *Ceiling Unlimited* Lloyd Morris and Kendall Smith contend that the Reims meet was "the" seminal event in early aviation. They state the Reims event literally set the stage for the path early aviation would follow for the next decade or so.[58] The crowds at Reims were expected to only range between fifty and sixty thousand spectators. This later proved to be grossly under estimated. In reality the Reims air meet attracted an astounding 250,000 spectators. The composition of the spectators at Reims consisted of persons from around the world, with ordinary men and women mixing with world class dignitaries from across Europe.[59] The Reims exhibition set the mold for similar aerial events that would be held over the next six years. Aerial exhibitions spread in popularity and were held in Germany and Britain the following year. Back in the United States there were a number of large and quite significant aerial exhibitions held. Three of the most prominent in 1910 were in Los Angeles, Chicago, and New York.[60]

Soon after Reims, the Wright and Curtiss Companies expanded. They created exhibition teams with the goal of gaining sorely needed capital for their parent companies and hopefully encouraging sales for their products. These early exhibition teams competed for prizes and fame

---

[57] Ernest McCullough, "Impressions of American Inventers." *Scientific American* 100, no. 24 (June 12,1909): 443.

[58] Morris, *Ceiling Unlimited,* 98.

[59] Morris, *Ceiling Unlimited,* 93.

[60] Jessie L. Embry, "Transportation, Sport, or Community Pride," Journal of the West 42, no. 2 (Summer 2003): 65-75 http://jow.abc-clio.com/?bookid=00225169&loc=42-2-65 [accessed October 5, 2008].

and brought entertainment to millions of Americans. [61] An important role that early exhibition flyers filled was to introduce skeptics to the very real fact that humanity had conquered the air. More importantly, they helped to cultivate an early demand for aviation that ran from advertising to event promotion. While these early aviators crossed the country, they had vital interactions and influence with a wide variety of people, including those in Congress and the early civilian officers of the National Guard.

The Events in America and the Wild West: 1910-1911

Beginning in January of 1910, aerial exhibitions came to the American West. In an effort to promote the growing city of Los Angeles to a wider world stage, local businessmen from the Los Angeles area conceived the idea of the Los Angeles Aviation Meet. [62] The underlying idea was to use the public's new found fascination with flight to promote the area of Los Angeles and Southern California to the rest of the United States and around the world.[63] The show began on January 10th, 1910 and drew famous aviators such as the American Glen Curtiss and Louis Paulhan from France. Estimates place those in attendance over the ten days in excess of five-hundred thousand spectators.[64]

The Los Angeles Aviation Meet sparked the idea of hosting similar events in other cities throughout the United States. Throughout 1910 and into 1911, business owners in larger cities such as Seattle, Washington, Denver, Colorado, and Portland, Oregon soon latched onto the idea of using these air events to promote their respective communities. Most were as successful as the Los Angeles exposition. Crowds in Denver were estimated to be over fifty thousand, and

[61] Morris, *Ceiling Unlimited,* 99-100.

[62] Jessie L. Embry, "Transportation, Sport, or Community Pride," Journal of the West 42, no. 2 (Summer 2003): 65-75 http://jow.abc-clio.com/?bookid=00225169&loc=42-2-65 [accessed October 5, 2008].

[63] Ibid.; 71.

[64] Ibid,; 65.

attendance in Portland swelled to almost eighty thousand spectators. [65] Aviation expositions meets and exhibition pilots promoted individual cities, and a new vision of what aircraft were capable of. An excellent example of this is noted by Jessie Embry in his article on the early air exhibitions. He uses the example of Lieutenant Paul Beck of the Signal Corps during the San Francisco air exhibition who amazed the crowds as he took photos and drew sketches from the air.[66] Other exhibition pilots at the San Francisco meet fired pistols at ground targets while flying. They successfully hit the targets and even launched bombs hitting ground targets with reasonable accuracy.[67] Coverage of these events signaled that a change was taking place as people began to dream of future possibilities for air travel. The Wright and Curtiss Aircraft Company's exhibition teams took to the air across the nation to meet the public's growing fascination with realities of flight. These teams formed the core of men and women who would go on to influence early aviation in numerous ways. They made flying a sport or entertainment that could showcase this new technology. Showcasing this helped legitimize it in the mind of the public. This in turn exposed ever growing numbers of people to the reality of flight and encouraged speculation and imagination on what it might someday offer.

Exhibition pilots faced increasing demands for them to showcase their skills. Trophies and staggering sums of prize money were offered. During the latter half of 1910, the East Coast hosted a second round of aerial expositions. In September, the Harvard Aeronautical Society hosted an exposition in Squantum, Massachusetts. Later during the month of October, an

[65] Jessie L. Embry, "Transportation, Sport, or Community Pride: Air Shows In the West, 1910s," Journal of the West 42, no. 2 (Summer 2003): 75 http://jow.abc-clio.com/?bookid=00225169&loc=42-2-65 [accessed October 5, 2008].

[66] Jessie L. Embry, "Transportation, Sport, or Community Pride: Air Shows In the West, 1910s," Journal of the West 42, no. 2 (Summer 2003): 75 http://jow.abc-clio.com/?bookid=00225169&loc=42-2-65 [accessed October 5, 2008].

[67] Ibid.; 69.

exhibition was held in Belmont Park, Long Island. The Belmont Park and Squantum exhibitions were quite successful in drawing very large numbers of spectators.[68] The Belmont Park exhibition proved to be especially significant because it served as a showdown between the Curtiss and the Wright exhibition teams. [69] The exploits of exhibition pilots at Belmont Park and many others helped to reinforce the idea that these machines and the early pilots who flew them were reliable and only getting better.

By 1910, the notion that two different companies were producing these new flying machines and fielding two distinct exhibition teams helped to reinforce legitimacy in potential and staying power of this technology. Through regular improvements in equipment and the daring skills of early pilots, flight times were becoming more reliable and their length of time in the air steadily increased. Most importantly, the exploits of exhibition pilots were becoming more daring. For example, at the Belmont Park exposition, this was showcased exhibition pilot Ralph Johnstone who reached a staggering height of 9,741 feet.[70] By the end of 1910 and well into 1911 the members of the Wright and Curtiss Exhibition Teams regularly stayed in the air for thirty minutes or more and were flying distances of fifteen to twenty miles. The crowds who attended loved the fevered pitch at which each team competed in this new form of aerial sport.

It was not long before "aerial sport" prompted interest in using the public's newfound fascination with flying in the advertisement of new products. The 1911 cross county flight of the Vin Fiz Flyer by Calbraith Perry Rodgers serves as a great example. Rodgers flew in pursuit of the $50,000 Hearst prize for the completion of the first American continental flight. He was lacking necessary capital to organize a team to follow his cross country trip. Chicago millionaire

[68] Morris, *Ceiling Unlimited,* 100-103.
[69] World Famous Aviators Will Compete at the Belmont Park Meet, *New York Times*, October 16, 1910.
[70] Ibid.

J. Armour sponsored Rodgers with $23, 0000 for this trip provided Rodgers painted advertisements for Amours new grape soft drink, Vin Fiz, on the wings and tail surfaces of his aircraft. [71] This proved to be an important example of advertising using exhibition pilots. Although Rodgers did not complete the trip within the required 30 days to win the Hearst prize money, he did complete the trip. His exploits had another side affect on the public response to early aviation. Such a long cross country flight of an airplane was previously thought impossible. Rodgers helped early aviation to take on even greater legitimacy by proving the technology at work was reliable. He was flying nonstop over greater distances than anyone had previously done. Critics of Rodgers flight noted the regular crashes and incessant repairs needed to keep the flying machine in the air and the overall time of forty-nine days it took him to cover the continent could be done by train in as little as five. However, none of them criticized the importance of the achievement that Rodgers had accomplished by flying coast to coast.[72]

The Wright and Curtiss companies recognized a need to promote their aircraft and a required an ever growing pool of pilots to help them achieve this. Both Companies established flight schools where anyone, male or female, could be trained to fly, so long as they could afford the cost of instruction.[73] Once their training was completed they often had a chance to be self employed as exhibition pilots or they could become part of the company's exhibition team. Many chose to take advantage of this latter option and work under contract as an exhibition flyer. In the example of a native Wisconsinite named John Kaminski, that is exactly what he chose to do. Like many early pilots, he had a particular skill set and once licensed, faced the question of

[71] Morris, *Ceiling Unlimited,* 106-107.; Bilstein, *Flight In America,* 25.
[72] Morris, *Ceiling Unlimited,* 109.; Bilstein, *Flight In America,* 26.
[73] Morris, *Ceiling Unlimited* 79-80.

how to make a living. He signed up with the Curtiss Exhibition Team and flew for it from 1912 until 1915.[74]

Similarly, early pilots such as Lincoln Beachey, Arch Hoxsey and Farnum F. Fish, all flew for one of the early exhibition companies. This collection of early pilots helped ignite the public's imagination with other promises of aviation. In an article from the *New York Times* article that covers a series of flights by Arch Hoxsey, it quotes the observations of one Lieutenant Vernon Boller and several other army offices from Fort Whipple, Arizona. Lieutenant Boller suggested that the airplane may one day replace the lowly army mule for transporting army personnel and equipment.[75] Ahead of his time, Lieutenant Boller was indeed thinking of a future reliant on this technology. Later, in 1912 on an exhibition flight from Milwaukee to Watertown, Wisconsin, Farmun Fish flew his aircraft loaded with bundles of newspapers to be delivered. While on this trip, he delivered newspapers via air to Waukesha and Oconomowoc Wisconsin.[76] This exploit helped to reinforce the possibility for delivering other commodities like the mail by air. Flight had evolved a technological oddity which society did not really understand to a popular source of entertainment with infinite future promise. The idea of applying this technology for war lurked in its shadows almost from the start. Both domestic and European development of this technology increased as it became apparent that it could be applied to war.

[74] John G. Kaminski Papers, 1912-1960. Correspondences. Box 1, Folders 2-3. Milwaukee Mss 146. Wisconsin Historical Sociey. Records housed in Milwaukee Area Research Center. University of Wisconsin-Milwaukee. Milwaukee, Wisconsin.

[75] Aviator Soars Over Mountain, *Chicago Tribune*, December 30, 1910.

[76] Newspapers by Aeroplane: Farnum Fish Flies over Wisconsin Dropping Bundles from Machine, *New York Times*, May 30, 1912.

War Clouds

By 1912, the notion of powered flight had taken root in the mind of the public as real and more substantial than just a sport. What had initially been disbelieved was becoming widely popularized and once again began to have an influence in congress. In 1912, Secretary of War Henry Stimson forwarded bill (H.R.17256) to the House of Representatives whiched called for a substantial increase in the numbers of enlisted officers detailed for aviation duty and fixed an acceptable rate of pay for them.[77] Stimson's bill also called for expanding aviation within the Army and Navy to include standing officers, enlisted men, and materials. His bill is important because it represents a significant and measured change in perception on the usefulness of aircraft in the mind of the public and the policy makers. Stimson's bill called for a rather large increase of aircraft, pilots and requisite mechanics and infrastructure. His plans called for the "establishment of 15 flying squadrons with a total of 120 military "aeroplanes" to be in the charge of two colonels, two lieutenant colonels, eleven majors, 270 captains or lieutenants and 720 enlisted men." [78] Stimson favored the deployment of such forces throughout the continental U.S. and even in its bases in the Philippines and Panamanian Isthmus.

Perhaps the second most important issue raised by this bill was the call for the expansion of training schools for military aviation. Stimson favored the idea of also extending training and development into the newly organized National Guard "militias" so as to create a further pool of potential soldiers specifically trained for military aviation operations.[79] This bill sparked healthy debate in Congress which did not end in total denial of the significance that this new technology held. Previous calls for funding of military aviation had often been dismissed with whispers of

[77] Air Fleet For Army Urged By Stimson, *New York Times*, April 27, 1912.
[78] Ibid.
[79] Ibid.

the Langley failure some ten years earlier.[80] Although this was a significant change in the United States, international, calls to fund military aviation were becoming common. By 1912, the United States had begun to lag behind other nations in development of this new technology.

Civilians also favored the expansion of military aviation. On February 17th, 1913 Alfred W. Lawson, America's most fervent civilian proponent of aviation development, addressed both the House of Representatives and the United States Senate in an open letter. Lawson attempted to persuade Congress to spend an astounding ten million dollars in aviation development. Lawson's plea echoed a long standing fear of how this new invention might be used in war to decimate great cities and possibly break America's security afforded it by two great oceans. Lawson's address to Congress made a plea for increased spending on both rigid airships and airplanes.[81]

Most importantly, Lawson outlined, in striking terms, the vast difference in spending on aviation between the United States and other "modern" nations. Internationally by 1911-12, aviation was being heavily funded in many European nations. Germany was spending an astounding twelve million dollars, France was spending nine million dollars, and Russia was spending six million dollars annually. At this same time, the United States military was spending roughly three hundred thousand dollars annually.[82] Although Lawson's call to support spending was somewhat skewed by his focus on airships his concern led to significant change in the public's perception of powered flight. In fact, Lawson voiced a prophetic point of view that was beginning to gain traction within more traditional military circles. Lawson stated: "There are great scientists and famous war strategists in harness today who will tell you that within a few

[80] Morris, *Ceiling Unlimited,* 40-41.
[81] Cong. Rec., 62nd Cong. 3rd sess., 1913, 49, pt 1-3: 3276-3278.
[82] Ibid.

years 'that a county's air fleet which controls the air above will control the ground or water below.' " [83]

By 1912 a change in the larger public's perception of aviation was becoming palpable. Disbelief and ambivalence were fading. Flight was becoming widely popularized and began to have influence in Congress as seen by the 1912 bill that Secretary of War Stimson forwarded to the House of Representatives. Change in the public's perception of aviation was not only evident in letters, such as those by Alfred Lawson, but also in newspaper articles. An increasing number of articles began to pay more attention to spending and development in Europe concerning aviation. American press seemed content to shine a spotlight on European militarization of this new "fad" while at the same time shining a light on the lack of American militarization of this new technology. [84] Debates emerged in Congress over issues such as permanently fixing the status of officers involved with flying as well as how much those associated should be paid, even to how they should to be insured. Given the ease with which one could die in the air, it was understandable to try and make it more appealing to entice more people to be active participants in it. This train of thought was especially evident in military circles.

Some of the first debates over rates of pay for officers were interesting because they shed a light on income for both civilian exhibition pilots and their military counterparts. In order to establish a core of officers for military air service, a consensus had to be reached on what they should be paid. In testimony before the Committee on Military Affairs, the House of Representatives Captain Paul Beck testified that rates of pay were a big stumbling block in the expansion of military aviation. Captain Beck felt that increasing pay for enlisted men would prove to be more beneficial than increasing just the rank from enlisted man to officer for those

[83] Cong. Rec., 62nd Cong. 3rd sess., 1913, 49, pt 1-3: 3276-3278.
[84] Aeroplane Armament An Essential Measure, *New York Times*, June 16, 1912.

associated or interested in flying while in military service.[85] Captain Beck also suggested that increased rates of pay would be more beneficial to enlisted men and their families in the long run due to the cost and difficulty in finding health insurance and the hardships of the work they are asked to do.[86] The most interesting information forwarded by Captain Beck is the rate of pay for both civilian and military airmen. For the time period of June through December of 1911, civilian exhibition pilots were estimated to have an annual income of about $21,000 where enlisted men were only making about $2,700.[87] This proved to be a dramatic difference that many felt had to be addressed in order to effectively encourage enlisted men to take up this hazardous calling. By the latter half of 1913 Congress was seriously considering Secretary of War Henry Stimson calls for increased spending on military aviation. [88] Pragmatic fears in 1912 in both civilian and political arenas called for the increased spending citing military preparedness as a primary reason to devote public funds to a previously questionable technology. The focus on whether this technology should be funded for military development changed to how it should be done. Congressional hearings continued throughout 1912 and 1913; Stimson's bill (H.R. 17256) was finally approved in 1913 after concerns for the pay and insurance status of those associated with aviation had been addressed.[89]

By the time calls for increased domestic funding for aviation were addressed, those within the general public who had doubted the validity of early aviation were largely converted to believers in its usefulness. This was large part due to the exploits of early exhibition pilots

[85] House. Committee on Military Affairs. *Increase of Pay For Officers and Enlisted Men Engaged In Aviation Service and To Provide Regulations For Such Service.* 62nd Cong., 2nd sess. January 22, 1912, 7-18.

[86] Ibid.

[87] Ibid.

[88] Air Fleet For Army Urged By Stimson, *New York Times*, April 27, 1912.

[89] Senate Committee on Military Affairs, *Status of Army Officers In Aviation Service, ETC*. 62nd Cong., 3rd sess., 1913, S. Rep. 1174, 1-6.

who were crisscrossing America and continually proving this technology was good and becoming better. One large issue remained. In order to develop aviation for military purposes, the American military needed flight instructors.[90] The numbers of men and material the Army Signal Corps could devote to this development remained limited well after Congress had addressed some of the most pressing issues of funding. This would remain a problem up to and beyond the eve of the First World War. They did not immediately have the pool of instructors needed to adequately train men in large numbers for this field. However, there was a large established pool of civilian aviators who might be able to meet this need: exhibition pilots. Their interactions with civilians in the early National Guard helped open the door for greater interactions on the eve of the First World War.

Dr. Herbert Johnson's article "Seeds of Separation*"* points to exhibition pilots as helping to have changed the mind of influential policy makers and the roles they played in early military aviation development.[91] He reiterates that one of basic the ways this was achieved was by simply flying. The more this early collection of aviators flew, the more legitimacy developed for themselves and the technology. Dr. Johnson suggests that another very influential interaction early exhibition pilots had had with the public, or rather, the civilians in the early National Guard. Dr. Johnson suggests that this influence came in many direct and indirect ways. One of the more direct ways was through the instruction offered by exhibition pilots to civilians who were also members of the National Guard. [92]

[90] Morris, *Ceiling Unlimited,* 111-112.

[91] Herbert Johnson, "Seeds of Separation," *Air University Review* (November- December 1982) http://www.airpower.maxwell.af.mil/airchronicles/aureview/1982/nov-dec/johnson.html [accessed January 25, 2009].

[92] Ibid.

Dr. Johnson underlines the role that The Aero Club of America had as a significant organizational pool of professional aviators who served the general public and civilians in the early National Guard during the early days of aviation. A good example of this interaction can be found in the actions of men such as Captain Homer W. Hedge who was a member of the New York National Guard as well as an officer in the Aero Club of America. His influence serves as a vital example of this interaction because Captain Hedge often heavily promoted National Guard participation in military flying by training at civilian air fields with civilian pilots who were often former exhibition pilots. By providing both training and much needed equipment, these flying clubs had a great influences upon those trained to fly in early military aviation.[93] This interaction also had the side effect of making early exhibition pilots skilled instructors. This would prove to be integral in the earliest days of U.S. involvement in the First World War. In the first stages of the war, those wishing to fly often had to go abroad to achieve the required training. By the latter half of 1915 and early 1916 exhibition pilots such as John Kaminski and others were engaged as civilian instructors in training military pilots. The role of exhibition pilots evolved again from pilots flying for entertainment and sport to pilots playing a vital role as instructors.

Perhaps the most important result of this early interaction between military officers in the National Guard was the development of another organization called the United States Aeronautical Reserve Corps (USARC) which was founded in September 1910.[94] In this same year, this organization already claimed 3200 members and even boasted the membership of President William Taft. The actions of the USARC underscored a need to develop a strong

[93] Herbert Johnson, "Seeds of Separation: The General Staff Corps and Military Aviation before World War," *Air University Review* (November- December 1982) http://www.airpower.maxwell.af.mil/airchronicles/aureview/1982/nov-dec/johnson.html [accessed January 25, 2009.]

[94] Ibid.

relationship with both the War Department and the Department of the Navy. The relationship between the USARC and the Departments of War and the Navy grew quickly. By the latter half of 1912 civilians in the USARC were gaining military assistance with experiments they were conducting. A great example of this was the relationship between the Navy and USARC member Harry S. Harkness in the development of wireless communications between aircraft and ground based revivers. The Navy had a strong interest in using Aircraft to call in naval artillery on targets. The department of the navy ordered the navy's wireless station at Point Loma in California to cooperate with Mr. Harkness in development of this communications technology.[95]

This cooperation stands as another important hallmark of the changed perception people had towards early aviation. Although the actions of the military branches of the government are not completely representative of the government's non-military branches, they do suggest a trend of acceptance and regulation of this industry.

By examining sources such as the *Statistical Abstract of the United States* and the *Bicentennial Edition of Historical Statistics of the United States* we can also see an increase in the statistical data associated with this new technology.[96] This is significant because it represents recognition of the early aviation industry by American government. More importantly the fact that the government was beginning to compile statistical information on this new technology is another strong testament a changing mind set towards flight.

---

[95] Herbert Johnson, "Seeds of Separation: The General Staff Corps and Military Aviation before World War," *Air University Review* (November- December 1982) http://www.airpower.maxwell.af.mil/airchronicles/aureview/1982/nov-dec/johnson.html [accessed January 25, 2009.]

[96] United States, Department of the Treasury, Bureau of Statistics, et al. *Statistical Abstract of the United States 1916-1918.* 182-183,186-187,200-201.

By 1914 there were sixteen manufacturing companies engaged in the manufacturing of aircraft.[97] The *Bicentennial Edition of Historical Statistics* documents the growth of aviation before the First World War. This source covers data from 1913 through 1970; in it we can find a separate heading for "Air Transportation". Statistical data before 1914 only goes back as far as 1913 which reinforces the notion that these years were significant in the overall recognition of aviation. From this source, we see that there is a noted increase in the numbers of aircraft being devoted to military use. This number is quite small in comparison to those for civilian use. However, in 1917 there is a dramatic increase to 2,013 airframes built that were devoted to military operations. At that same time only, 135 airframes were devoted to civilian use.[98]

[97] United States, Department of the Treasury, Bureau of Statistics, et al. *Statistical Abstract of the United States 1916-1918.* 182-183,186-187,200-201..

[98] U.S. Department of Census. *Bicentennial Edition Historical Statistics of the United States Colonial Times to 1970.* Washington, D.C., 1975, 767-770.

Conclusion

From 1903 through 1908 there was considerable disbelief in what the Wrights had achieved in making flight a reality. As exhibition pilots took to the air around the nation they changed peoples belief in this technology by proving it was valid and reliable. Ambivalence towards this new technology changed relatively quickly between1909 and 1914, the results of this changing attitude towards flying can be found in the support of Congressional approval for more government funding in this new field. Spending on military aviation stands as example of how the public perception of aviation changed from skepticism to acceptance of early aviation.

On the eve of the Great War in Europe, Americans were still growing in their appreciation and understanding of aviation. From 1914 through 1917, just before the official involvement of America in hostilities in Europe, exhibition pilots found new roles to fill in furthering their chosen field of expertise. After funding issues and military structure were addressed. Many exhibition pilots left exhibition flying and became flight instructors. As war drew closer, the U.S. military began to prepare for it. Exhibition pilots such as John Kaminski took up residence at air fields and began to instruct military personnel in flying. In 1916, Kaminski went to Mineola, Long Island to train pilots for the Signal Corps. With the United States entering the war in 1917 he joined the Army with the rank of non-commissioned flying officer.[99] Kaminski was not the only former exhibition pilot to do such. Many others who also found the work more consistent and the pay more stable were drawn into becoming instructors for the military.[100]

[99] Harold E. Morehouse Flying Pioneers Biographies Collection, "*The Flying Pioneers of Aviation."* Smithsonian Institution.*; Early Birds of Aviation, Inc. Collection, "John G. Kaminski"* Smithsonian Institution.

[100] *Early Birds of Aviation, Inc. Collection, "John G. Kaminski,"* Smithsonian Institution.

Exhibition pilots continued to fly before large crowds of spectators. In order to keep crowds coming they often had to innovate their routines, further developing their standard flights into elaborate performances. These performances further refined aviation in both the practice of pilot and performance of machine. Exhibition pilots allowed for important interactions between civilian pilots and early pilots in military aviation. They also served a more important role. They served as a ready pool of instructors once hostilities in Europe provoked America's involvement. Many early exhibition pilots started out as civilian instructors for military personnel and eventually enlisted themselves to draw an officer's rank and associated salary. If it had not been for the early influence of exhibition pilots on the general public and those within Congress, passage of bills favorable to aviation development might have died in commission. The rate of pay appeared to have been an important factor that, once addressed, was greatly beneficial in attracting early exhibition pilots. By engaging in training for the military, early exhibition pilots could stabilize their income from a boom and bust cycle. This was beneficial for both pilot and American military preparedness.

In conclusion exhibition pilots served a multitude of roles in early aviation. By flying for a demanding public they gained handsome profits and a celebrity status as early daring birdmen. By doing so, they were instrumental in changing public opinion from cynical skepticism to wondrous acceptance of the possibilities of flight. Most importantly, their time as exhibition pilots enabled a great number of these early pilots to become a necessary resource to train America's first generation of aerial warriors who would fight and die in the skies over Europe.

Primary Sources:

John G. Kaminski Papers, 1912-1960. Correspondences. Milwaukee Mss 146. Wisconsin Historical Society. Records housed in Milwaukee Area Research Center. University of Wisconsin- Milwaukee. Milwaukee, Wisconsin.

Smithsonian:

Harold E. Morehouse Flying Pioneers Biographies Collection, "*The Flying Pioneers of Aviation."* Smithsonian Institution, Washington D.C., Box 7 Folder 3. http://www.nasm.si.edu/research/arch/findaids/morehous/hem_sec_6.html

Early Birds of Aviation, Inc. Collection, "*John G. Kaminski*" Smithsonian Institution, Washington D.C. Box 31 Folder 8. http://www.nasm.si.edu/research/arch/findaids/eb/eb_sec_10.html

Congressional (Other):

U.S. Congress. House. Committee on Military Affairs. *Increase of Pay For Officers and Enlisted Men Engaged In Aviation Service and To Provide Regulations For Such Service.* 62nd Cong., 2nd sess. January 22, 1912.

U.S.Congress. *Congressional Record*. 62nd Cong. 3rd sess., 1913 Vol.49, pt 1-3.

U.S. Congress. Senate Committee on Military Affairs, *Status of Army Officers In Aviation Service, ETC*. February 1, 1913, 62nd Cong., 3rd sess., 1913. S. Rep. 1174.

Government Statistics:

U.S. Department of Census. *Bicentennial Edition Historical Statistics of the United States Colonial Times to 1970.* Washington, D.C., 1975.

Department of Commerce: Bureau of Foreign and Domestic Commerce. *Statistical Abstract of the United States 1916*. Washington D.C. Government Printing Office. 1917.

Department of Commerce: Bureau of Foreign and Domestic Commerce. *Statistical Abstract of the United States 1917.* Washington D.C. Government Printing Office. 1918.

Department of Commerce: Bureau of Foreign and Domestic Commerce. *Statistical Abstract of the United States 1918*. Washington D.C. Government Printing Office. 1919.

Newspapers:
New York Times

Flying Machine Fiasco, *New York Times*, October 8,1903. http://query.nytimes.com/mem/archive-free/pdf?res=9B05E4DD1039E333A2575BC0A9669D946297D6CF (accessed February 14, 2009).

Fall Wrecks Airship., *New York Times*, May 27, 1904. http://query.nytimes.com/mem/archive-free/pdf?res=9C06E3DA113CE433A25754C2A9639C946597D6CF (accessed January 4, 2009).

Another Attempt to Solve Aerial Navigation Problem, *New York Times*, January 7, 1906. http://query.nytimes.com/mem/archive-free/pdf?_r=1&res=9E00EFDE103EE733A25754C0A9679C946797D6CF (accessed January 4, 2009).

Good Flights By Wrights: One for 27-16 Miles - Rate Over 46 Miles an Hour, *Ney York Times*, May 12, 1908. http://query.nytimes.com/mem/archive-free/pdf?_r=1&res=9E0DE3DA1639E333A25751C1A9639C946997D6CF (accessed January 6, 2009).

Rheims Gets Ready for Week of Flying, *New York Times*, Thursday, August 19, 1909. http://query.nytimes.com/mem/archive-free/pdf?res=9806E1D6143DE733A2575AC1A96E9C946897D6CF (accessed January 5, 2009).

Air Races Begin at Rheims To-Day, *Ney York Times*, August 22, 1909. http://query.nytimes.com/mem/archive-free/pdf?res=9A06E4DE143EE033A25751C2A96E9C946897D6CF (accessed January 6, 2009).

World Famous Aviators Will Compete at the Belmont Park Meet, *New York Times*, October 16, 1910. http://query.nytimes.com/mem/archive-free/pdf?_r=1&res=9A04E1DA1F39E333A25755C1A9669D946196D6CF (accessed January 6, 2009).

Rodgers Off In Race Flying Eighty Miles, *New York Times*, September 18, 1911. http://query.nytimes.com/mem/archive-free/pdf?_r=1&res=9B06E2DC163CE633A2575BC1A96F9C946096D6CF (accessed January 9, 2009).

Aeroplane Armament An Essential Measure, *New York Times*, June 16, 1912. http://query.nytimes.com/gst/abstract.html?res=9D00E0D91E3CE633A25755C1A9609C946396D6CF&scp=1&sq=Aeroplane+Armament+An+Essential+Measure&st=p (accessed January 22, 2009).

Newspapers by Aeroplane: Farnum Fish Flies over Wisconsin Dropping Bundles from Machine, *New York Times*, May 30, 1912. http://query.nytimes.com/mem/archive-free/apdf?_r=1&res=940DE1D81231E233A25753C3A9639C946396D6CF (accessed January 20, 2009).

Aviator Rodgers Plunges To Death, *New York Times*, April 4, 1912. http://query.nytimes.com/gst/abstract.html?res=9D01E2DB1F31E233A25757C0A9629C946396D6CF&scp=1&sq=Aviator+Rodgers+Plunges+To+Death&st=p (accessed January 9, 2009).

Newspapers By Aeroplane, *New York Times*, May 30, 1912. http://query.nytimes.com/gst/abstract.html?res=940DE1D81231E233A25753C3A9639C946396D6CF&scp=1&sq=Newspapers+By+Aeroplane&st=p (accessed January 10, 2009).

Air Fleet For Army Urged By Stimson, *New York Times*, April 27, 1912. http://query.nytimes.com/gst/abstract.html?res=9A00E1DE153CE633A25754C2A9629C946396D6CF&scp=1&sq=Air+Fleet+For+Army+Urged+By+Stimson+&st=p (accessed January 11, 2009).

Only 15 Airships for Field Service., *New York Times*, April 22, 1914. http://query.nytimes.com/mem/archive-free/pdf?res=9806EFD8163AE633A25751C2A9629C946596D6CF (accessed January 4, 2009).

Passes Hay Aviation Bill., *New York Times*, May 19, 1914. http://query.nytimes.com/mem/archive-free/pdf?_r=1&res=9802E6D61730E733A2575AC1A9639C946596D6CF (accessed January 10, 2009).

Chicago Tribune

Flying Machine Tried and Fails, *Chicago Tribune*, December 9, 1903. https://secure.pqarchiver.com/chicagotribune/access/407440571.html?dids=407440571:407440571&FMT=ABS&FMTS=ABS:AI&type=historic&date=Dec+9%2C+1903&author=&pub=Chicago+Daily+Tribune&edition=&startpage=1&desc=FLYING+MACHINE+TRIED+AND+FAILS. (accessed February 14, 2009).

Aviator Soars Over Mountain, *Chicago Tribune*, December 30, 1910. http://pqasb.pqarchiver.com/chicagotribune/access/387734731.html?dids=387734731:38

7734731&FMT=ABS&FMTS=ABS:AI&type=historic&date=Dec+30%2C+1910&author=&pub=Chicago+Daily+Tribune+(1872-1963)&edition=&startpage=5&desc=AVIATOR+SOARS+OVER+MOUNTAIN (accessed January 9, 2009).

Aviator Arch Hoxsey's Own Story of His Flight With Col. Roosevelt., *Chicago Tribune*, January 1, 1911. http://pqasb.pqarchiver.com/chicagotribune/access/386538271.html?dids=386538271:386538271&FMT=ABS&FMTS=ABS:AI&type=historic&date=Jan+1%2C+1911&author=&pub=Chicago+Daily+Tribune+(1872-1963)&edition=&startpage=2&desc=AVIATOR+ARCH+HOXSEY%27S+OWN+STORY+OF+HIS (accessed February 13, 2009).

Aviators To Fly This Morning, *Chicago Tribune*, August 11, 1911. http://pqasb.pqarchiver.com/chicagotribune/access/386911741.html?dids=386911741:386911741&FMT=ABS&FMTS=ABS:AI&type=historic&date=Aug+11%2C+1911&author=&pub=Chicago+Daily+Tribune+(1872-1963)&edition=&startpage=3&desc=AVIATORS+TO+FLY+THIS+MORNING (accessed January 10, 2009).

Beachey Battles Gale At Benefit, *Chicago Tribune*, August 22, 1911. http://pqasb.pqarchiver.com/chicagotribune/access/386930141.html?dids=386930141:386930141&FMT=ABS&FMTS=ABS:AI&type=historic&date=Aug+22%2C+1911&author=&pub=Chicago+Daily+Tribune+(1872-1963)&edition=&startpage=2&desc=BEACHEY+BATTLES+GALE+AT+BENEFIT (accessed January 10, 2009).

Chicagoans Ride High In Biplane, *Chicago Tribune*, June 8, 1911. http://pqasb.pqarchiver.com/chicagotribune/access/386809671.html?dids=386809671:386809671&FMT=ABS&FMTS=ABS:AI&type=historic&date=Jun+8%2C+1911&author=&pub=Chicago+Daily+Tribune+(1872-1963)&edition=&startpage=11&desc=CHICAGOANS+RIDE+HIGH+IN+BIPLANE (accessed January 9, 2009).

Expect Wrights At Aerial Meet, *Chicago Tribune*, August 10, 1911. http://pqasb.pqarchiver.com/chicagotribune/access/386910391.html?dids=386910391:386910391&FMT=ABS&FMTS=ABS:AI&type=historic&date=Aug+10%2C+1911&author=&pub=Chicago+Daily+Tribune+(1872-1963)&edition=&startpage=3&desc=EXPECT+WRIGHTS+AT+AERIAL+MEET (accessed January 10, 2009).

Five Fliers Fall on Opening Day; All Escape Harm., *Chicago Tribune*, August 13,1911. http://pqasb.pqarchiver.com/chicagotribune/access/386914291.html?dids=386914291:386914291&FMT=ABS&FMTS=ABS:AI&type=historic&date=Aug+13%2C+1911&autho

r=&pub=Chicago+Daily+Tribune&edition=&startpage=1&desc=FIVE+FLIERS+FALL+ON+OPENING+DAY%3B+ALL+ESCAPE+HARM (accessed January 10, 2009).

Smash World Record In Air; Snapshot City, *Chicago Tribune*, August 20, 1911. http://pqasb.pqarchiver.com/chicagotribune/results.html?st=advanced&QryTxt=Smash+World+Record+In+Air%3B+Snapshot+City&type=historic&sortby=REVERSE_CHRON&datetype=0&frommonth=01&fromday=01&fromyear=1985&tomonth=02&today=14&toyear=2009&By=&Title=&restrict=a (accessed January 10, 2009).

The Price of Mastering The Air, *Chicago Tribune*, August 6, 1911. http://pqasb.pqarchiver.com/chicagotribune/access/386906041.html?dids=386906041:386906041&FMT=ABS&FMTS=ABS:AI&type=historic&date=Aug+6%2C+1911&author=&pub=Chicago+Daily+Tribune+(1872-1963)&edition=&startpage=F5&desc=The+Price+of+Mastering+The+Air (accessed January 11, 2009).

Biplanes Crash In Air; Two Dead, *Chicago Tribune*, June 20, 1912. http://pqasb.pqarchiver.com/chicagotribune/access/392268551.html?dids=392268551:392268551&FMT=ABS&FMTS=ABS:AI&type=historic&date=Jun+20%2C+1912&author=&pub=Chicago+Daily+Tribune+(1872-1963)&edition=&startpage=13&desc=BIPLANES+CRASH+IN+AIR%3B+TWO+DEAD (accessed January 11, 2009).

Washington Post

Aerial Craft May Never Be Used Commercially, Declares Orville Wright, *Washington Post*, Sunday, August 30,1908. http://access.newspaperarchive.com/Viewer.aspx?img=5370441&firstvisit=true&src=search¤tResult=0 (accessed January 5, 2009).

Aeros Throng on High, *Washington Post*, Saturday, August 21, 1909. http://access.newspaperarchive.com/Viewer.aspx?img=5390982&firstvisit=true&src=search¤tResult=0 (accessed January 11, 2009).

The One Big Idea of the Wright Brothers' Aeroplane, *Washington Post*, Sunday, July 4, 1909. http://access.newspaperarchive.com/Viewer.aspx?img=5384588&firstvisit=true&src=search¤tResult=0 (accessed January 7, 2009).

In Swiftest Flight, *Washington Post*, Thursday, July 22, 1909. http://access.newspaperarchive.com/Viewer.aspx?img=5386815&firstvisit=true&src=search¤tResult=0 (accessed January 7, 2009).

Tragedies In the Air, *Washington Post*, Sunday July 24, 1910. http://access.newspaperarchive.com.proxy.uwec.edu/Viewer.aspx?img=5418655&firstvisit=true&src=search¤tResult=10 (accessed January 10, 2009).

Hoxsey's Fate Warns, *Washington Post.*, Sunday January 1, 1911. http://access.newspaperarchive.com.proxy.uwec.edu/Viewer.aspx?img=5423250&firstvisit=true&src=search¤tResult=0 (accessed January 11, 2009).

Other Newspapers

Machine That Flies, *Newark Daily Advocate*, December 28, 1903. http://access.newspaperarchive.com.proxy.uwec.edu/Viewer.aspx?img=6593920&firstvisit=true&src=search¤tResult=6 (accessed January 5, 2009).

Dayton, *Athens Messenger and Herald*, January 14,1904. http://access.newspaperarchive.com/Viewer.aspx?img=35350819&refer=browse (accessed December 8, 2008).

Air Navigation Assured., *Van Wert Daily Bulletin, Ohio*, Saturday, February 03, 1906. http://access.newspaperarchive.com.proxy.uwec.edu/Viewer.aspx?img=36588373&firstvisit=true&src=search¤tResult=0 (accessed January 5, 2009).

Flying in the Air: Much like Learning to Swim, Say Wright Brothers, *Daily News*, Friday, May 15, 1908. http://access.newspaperarchive.com/Viewer.aspx?img=844552&firstvisit=true&src=search¤tResult=1 (accessed January 5, 2009).

Aerial Navigation Assured, *Newark Daily Advocate*, Wednesday, September 9, 1908. http://access.newspaperarchive.com/Viewer.aspx?img=6768884&firstvisit=true&src=search¤tResult=6 (accessed January 5, 2009).

Wright Brothers Signally Honored In Their Home Town, *Hamilton Telegraph*, Thursday, June24, 1909. http://access.newspaperarchive.com/Viewer.aspx?img=71561878&firstvisit=true&src=search¤tResult=3 (accessed January 7, 2009).

Cede Taipoli or Fight, Says Italy to Turk, *Des Moines News*, Thursday September 26, 1911. http://access.newspaperarchive.com.proxy.uwec.edu/Viewer.aspx?img=83436235&firstvisit=true&src=search¤tResult=6 (accessed February 14, 2009).

Secondary Sources:
Books

Bilstein, Roger E. *Flight In America 1900-1983: From the Wrights to the Astronauts.* Baltimore: The John Hopkins University Press, 1984.

Perrow, Charles. *Normal Accidents: Living With High Risk Technologies*. Prinction: Prinction University Press, 1999.

Goldstein, Laurence. *The Flying Machine & Modern Literature* . Bloomington : Indiana University Press, 1986.

J.Corn, Joseph. *The Winged Gospel; America's Romance with Aviation, 1900-1950.* . New York : Oxford University Press , 1983.

Launius, Rodger D. "The Wright Brothers, Government Support For Aernautical Research, And the Evolution of Flight." In *Reconsidering a Century of Flight*, by Roger D. Launius And Janet R. Daly Bednarek, edited by Roger D. Launius And Janet R. Daly Bednarek, 51-69. Chapel Hill: The University of North Carolina Press, 2003.

Lloyd Morris, Kendall Smith. *Ceiling Unlimited: The Story of American Aviation From Kitty Hawk to Supersonics*. New York: The Macmillan Company, 1953.

Smithsonian Institution Press. *The Published Writings of Wilbur And Orville Wright.* Edited by Peter l. Jakab and Rick Young. Washington: Smithsonian Institution Press, 2000.

Van Riper, A. Bowdoin. *Imagining Flight: Aviation and Popular Culture.* College Station: Texas A&M University Press, 2004.

Journal Articles

Allen, Catherine Wallace. "Wright Military Training at College Park in 1909." Air Power History, 49 no. 4[Winter 2002]: 12-21.

Chenoweth, David R. "Testing the Military Flyer at Fort Myer, 1908-1909." Air Power History, 49 no. 4[Winter 2002]: 4-11.

Embry, Jessie L. “Transportation, Sport, or Community Pride?: Air Shows In the West, 1910s.” Journal of the West 42, no. 2 (Summer 2003). http://jow.abc-clio.com/favicon.ico (accessed October 5, 2008).

Johnson, Herbert. “Seeds of Separation: The General Staff Corps and Military Aviation Before World War.” *Air University Review* (November- December 1982). http://www.airpower.maxwell.af.mil/airchronicles/aureview/1982/nov-dec/johnson.html (accessed January 25, 2009).

McCullough, Ernest. “Impressions of American Inventers.” *Scientific American* 100, no. 24 (June 12, 1909)